LESSONS *for* TOMORROW

VOLUME II: APPENDICES

A Study of Education at the Smithsonian

Smithsonian Institution
Office of Policy and Analysis

August, 2009

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Preface

Upon the subject of education, I can only say that I view it as the most important subject which we as a people may be engaged in.

—Abraham Lincoln

This study was undertaken to provide an overview of education at the Smithsonian, highlight its importance, and strengthen it to meet the challenges of the 21st century. The report on the study consists of two volumes. Volume I, Summary Report, presents the main points to emerge from the study, along with conclusions and recommendations. This report, Volume II, contains more detailed findings and analysis.

Although the study looks at many aspects of education in broad terms, it is not comprehensive. For example, it does not examine the organization and management of education at each unit, nor does it evaluate individual programs. Rather, it focuses on the mission, strategy, audiences, programming, leadership, management, workforce, finances, facilities, and organizational alignment of education at the Smithsonian as a whole. The impact of new technologies on the Institution's ability to serve its audiences is also discussed, as is the critical issue of collaboration within the Smithsonian and with external organizations.

I am indebted to many people for helping the Office of Policy and Analysis (OP&A) carry out this challenging study. In the course of their research, OP&A staff interviewed approximately 300 people, including Smithsonian employees and stakeholders and non-Smithsonian museum and education professionals. I thank all of these interviewees for their cooperation, and appreciate their insights.

The following interns performed secondary-source research, participated in many long discussions, conducted telephone interviews, and prepared materials: Patience Baach, Stephanie Berger, Sarah Block, Meredith Ferguson, William Hix, Yena Kim, Christina Markle, Anne Lefebure, Heather Mauger, Sarah Morgan, Kristin Rector, and Robert Roach.

Collecting and analyzing the vast amount of information underlying this report, and assembling the report itself, were time-consuming processes. The project co-directors, Ioana Munteanu and James Smith, gave generously of their time and ideas. Ioana's eye for detail and careful analysis and James's ability to synthesize information underpin this study. The report could not have been completed without Whitney Watriss' extensive contributions to writing, analysis, and editing of the final report.

Other OP&A staff who contributed to all phases of the study include Andrew Pekarik, Zahava Doering, David Karns, Kathleen Ernst, and Lance Costello. They were assisted by three others who worked as members of the study team: Steven Williams, an educator from the National Air and Space Museum; Julie Blake Shook, a young museum professional from Canada; and Nino Gedevanishvili, a visiting scholar from the Georgian National Museum. Samantha Grauberger contributed logistical and administrative assistance.

I would like to thank Stephanie Norby, the director of the Smithsonian Center for Education and Museum Studies, and her staff for their interest in this project and willingness to share their knowledge, as well as the other Smithsonian educators who assisted the OP&A study team in coming to an understanding of the relevant issues.

Finally, I am grateful to Cristián Samper, the director of the National Museum of Natural History, who requested the study during his tenure as Acting Secretary of the Smithsonian Institution, and Secretary Wayne Clough for his interest in strengthening education at the Smithsonian, his support for OP&A's independent studies of organizational and managerial issues, and his desire to widen the Institution's vision, extend its reach, and explore its potential.

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Glossary of Acronyms

AAA	Archives of American Art
AAM	American Association of Museums
ACM	Anacostia Community Museum
AIB	Arts and Industries Building
APAP	Asian Pacific American Program
CAMEO	Conversations About Museum Education and Outreach (National Museum of Natural History)
CBCES	Chesapeake Bay Center for Environmental Studies (Smithsonian Institution)
CCSSO	Council of Chief State School Officers
CFCH	Center for Folklife and Cultural Heritage
CHNDM	Cooper-Hewitt, National Design Museum
CMS	Center for Museum Studies (Smithsonian Institution)
CEPS	Center for Earth and Planetary Studies (National Air and Space Museum)
CfA	Harvard-Smithsonian Center for Astrophysics
CFCH	Center for Folklife and Cultural Heritage
CIED	Council of Information and Education Directors (Smithsonian Institution)
CMED	Council of Museum Education Directors (Smithsonian Institution)
COBD	Council of Bureau Directors (Smithsonian Institution)
CRC	Conservation and Research Center (National Zoological Park)
EdCom	Standing Professional Committee on Education (American Association of Museums)
EDGE	Education Data Gathering and Evaluation (database)
EiP	Excellence in Programming Award (American Association of Museums)
ERP	Enterprise Resource Planning
FGA	Freer Gallery of Art
FONZ	Friends of the National Zoo
FSG	Freer and Sackler Galleries
GGHC	George Gustav Heye Center (National Museum of the American Indian)
GMU	George Mason University
HMSG	Hirshhorn Museum and Sculpture Garden
IMLS	Institute for Museum and Library Services
ISO	Institutional Studies Office (Smithsonian Institution)
IT	Information technology
LASER	Leadership and Assistance for Science Education Reform (National Sciences Resource Center)
MCI	Museum Conservation Institute

MER	Museum Education Roundtable
MS&RL	Museum Studies & Reference Library (Smithsonian Institution Libraries)
NAM	National Air Museum (Smithsonian Institution)
NAS	National Academy of Sciences
NASA	National Air and Space Administration
NASM	National Air and Space Museum
NCFA	National Collection of Fine Arts
NCLB	No Child Left Behind
NGA	National Gallery of Art
NHB	Natural History Building
NMAA	National Museum of American Art
NMAAHC	National Museum of African American History and Culture
NMAfA	National Museum of African Art
NMAH	National Museum of American History
NMAI	National Museum of the American Indian
NMNH	National Museum of Natural History
NMMNHS	New Mexico Museum of Natural History and Science
NOAA	National Oceanographic and Atmospheric Administration
NPG	National Portrait Gallery
NPM	National Postal Museum
NSF	National Science Foundation
NSRC	National Science Resources Center
NZP	National Zoological Park
OCIO	Office of the Chief Information Officer
OD	Office of Development
OECD	Organisation for Economic Co-operation and Development
OESE	Office of Elementary and Secondary Education (Smithsonian Institution)
OF	Office of Fellowships
OFEO	Office of Facilities Engineering and Operations
OHR	Office of Human Resources
OMP	Office of Museum Programs (Smithsonian Institution)
OP&A	Office of Policy and Analysis
SAAM	Smithsonian American Art Museum
SAO	Smithsonian Astrophysical Observatory
SCED	Smithsonian Council of Education Directors
SCEMS	Smithsonian Center for Education and Museum Studies
SE	Smithsonian Enterprises

SED	Science Education Department (Harvard-Smithsonian Center for Astrophysics)
SEEC	Smithsonian Early Enrichment Center
SERC	Smithsonian Environmental Research Center
SIA	Smithsonian Institution Archives
SIL	Smithsonian Institution Libraries
SITES	Smithsonian Institution Traveling Exhibition Service
SLC	Smithsonian Latino Center
SOE	Smithsonian Office of Education
SNB	Smithsonian National Board
SOER	Office of Educational Research (Smithsonian Institution)
SOLAA	Smithsonian Online Academic Appointments
STEM	Science, technology, engineering, and mathematics
STRI	Smithsonian Tropical Research Institute
TSA	The Smithsonian Associates
UHC	Steven F. Udvar-Hazy Center (National Air and Space Museum)
USPS	U.S. Postal Service
VCU	Virginia Commonwealth University
ZEG	Zoo Education Group (National Zoological Park)

Introduction

You cannot teach anybody anything. You can only help them discover it within themselves.

—Galileo

In spring 2008, Smithsonian Acting Secretary Cristián Samper asked the Smithsonian Office of Policy and Analysis (OP&A) to undertake a comprehensive study of education at the Institution. The purpose of this study was not to evaluate specific education programs, departments, or units, but rather to consider how the educational efforts of the Smithsonian as a whole might be strengthened.

When he assumed leadership of the Smithsonian in July 2008, incoming Secretary G. Wayne Clough expressed an interest in seeing the project go forward, and specifically asked the OP&A study team to explore the role that the Institution might play as a leader on the national and global educational stage.

The Big Picture

The Smithsonian possesses great potential as an educational organization. However, despite areas of unmistakable excellence, the Institution's current educational efforts are widely perceived to be fragmented, unfocused, and less impactful than one might expect from an organization of the Smithsonian's stature.

There appear to be two major reasons. First, the Smithsonian lacks an educational vision that would enable it to set clear strategic priorities at the Institutional level. Second, it lacks management mechanisms that would allow it to effectively marshal resources from across the units in the pursuit of such priorities.

Vision and Priorities

A realistic, explicit central vision for Smithsonian education does not currently exist. As a result, while many programs and unit education departments are excellent when considered in isolation, educational activities at the Smithsonian *as a whole* comprise a diffuse grab-bag of offerings.

The problem is not the broad scope of Smithsonian education offerings per se. The problem, rather, is that Smithsonian education is not *more* than the sum of its parts: it amounts to a

broad selection of offerings, devised by units largely in isolation from one another. It rarely reaches the critical mass in any specific area that would be necessary to have a real impact at the national level and beyond. Before it can do so, the Institution needs to define what it wants to be as an educational organization. This would allow it to set strategic priorities and focus resources on key areas.

Implementation

Establishing a vision and setting priorities are necessary but not sufficient for raising the Institution's profile as an educational organization. An additional issue is that the current culture, management, and organization of the Smithsonian are not well-suited for focusing resources on strategic Institutional priorities.

- In terms of *culture*, Smithsonian staff tend to place too much value on autonomy (at the unit, department, project team, and even individual levels), and not enough value on organizational learning. The former makes it difficult for units to cooperate in the pursuit of Institutional priorities. The latter hinders the Smithsonian from embracing innovative or experimental approaches to education.
- In terms of *management* and *organization*, educational activities are scattered across a highly decentralized structure in which no one plays a central coordinating role. Incentives and mechanisms for cooperation across units are weak; even basic cross-unit communications leave much to be desired.

Strong leadership is needed to effect the cultural, managerial, and organizational changes that will allow the Institution to leverage its limited educational resources, impose greater focus on its educational portfolio, and concentrate resources on strategic areas where the Smithsonian might make a significant national or global contribution.

Organization of This Volume

This volume consists of 17 appendices that expand on the findings and conclusions of Volume I, Summary Report. The initial two appendices contain the bibliography and list of organizations contacted for the study. The findings, analysis, and discussion are broken out by:

- History
- External Environment
- What Is Smithsonian Education?

- ◊ Audiences and Programs
- ◊ Professional Training
- ◊ Culture
- ◊ Management
- ◊ Structure and Organization
- ◊ Collaboration
- ◊ Financial Resources
- ◊ Human Resources
- ◊ Space and Facilities
- ◊ Technology
- ◊ Staff Responses from the Strategic Planning Survey

A caveat bears mention. This study deals with generalizations at the level of the Institution as a whole. For each of the generalizations, there are notable exceptions. Indeed, the study team found a number of instances where the units and central administration have already instituted changes to address problems discussed in this report.

Methodology

The findings, conclusions, and recommendations of this report are based on the following primary and secondary sources:

- ◊ An external literature review of published and unpublished books, articles, websites, and other documents relevant to the topics of learning and education, evaluation and assessment, management, organizational structure, collaboration, technology, and so on (see Appendix 1, Bibliography);
- ◊ An internal literature review of relevant OP&A and other Smithsonian program and policy studies (see Appendix 1, Bibliography);
- ◊ Interviews with educators and other personnel:

- » Internal—approximately 250 interviews with Smithsonian staff at all levels, including educators, unit and central leaders, IT professionals, fellows, curators and researchers, administrative staff, and others;[1]
- » External—about 50 interviews with education professionals at dozens of cultural and academic institutions (see Appendix 2, External Organizations Contacted);

◊ Smithsonian primary documents and data gathered from over 20 Smithsonian units and offices, including:

- » Organizational charts and other documents on reporting relationships;
- » Planning documents (such as strategic and operational plans);
- » Financial data (unit budgetary and expenditure data; data on gifts, grants, and sponsorships from the Office of Development [OD]; summary expenditure data from the Smithsonian's Enterprise Resource Planning [ERP] system, provided by the Office of Planning, Management, and Budget [OPMB]);

◊ Human resources data (unit-provided data; staffing data from the Office of Human Resources [OHR]; and data on academic appointments from the Office of Fellowships [OF]);

◊ Questionnaires sent to all unit education departments requesting information on collaborations (internal and external); space and facilities; evaluation efforts; audiences; programs; and other topics;[2]

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1 The study team conducted interviews at the following Smithsonian units: the Archives of American Art (AAA), Anacostia Community Museum (ACM), Asian Pacific-American Program (APAP), Center for Folklife and Cultural Heritage (CFCH), Cooper-Hewitt, National Design Museum (CHNDM), Freer and Sackler Galleries (FSG), George Gustav Heye Center (GGHI), the Hirshhorn Museum and Sculpture Garden (HMSG), Horticulature Services Devision (HSD), Lemelson Center, Museum Conservation Institute (MCI), National Air and Space Museum (NASM), National Museum of African American History and Culture (NMAAHC), National Museum of African Art (NMAfA), National Museum of American History (NMAH), National Museum of the American Indian (NMAI), National Museum of Natural History (NMNH), National Portrait Gallery (NPG), National Postal Museum (NPM), National Science Resources Center (NSRC), National Zoological Park (NZP), Office of the Chief Information Officer (OCIO), Office of Development (OD), Office of Fellowships (OF), Smithsonian Affiliations, Smithsonian American Art Museum (SAAM), Smithsonain Astrophysical Observatory (SAO), Smithsonian Center for Education and Museum Studies (SCEMS), Smithsonian Enterprises (SE), Smithsonain Early Enrichment Center (SEEC), Smithsonian Environmental Research Center (SERC), Smithsonian Institution Archives (SIA), Smithsonian Institution Libraries (SIL), Smithsonian Institution Traveling Exhibition Service (SITES), Smithsonian Latino Center (SLC), Smithsonian Photography Initiative (SPI), Smithsonian Tropical Research Institute (STRI), and Smithsonian Associates (TSA).

2 The study team sent the survey to all units where it conducted interviews except Affiliations, MCI, OCIO, OD, OF, and SE. Of those receiving the survey, three said they do not offer education programs and five did not return the data request (SLC, NMAH, SITES, NSRC, and HSD). The remaining units returned the survey, although they did not necessarily provide all requested data.

- ◊ The results of an online survey sent to all Smithsonian employees as part of the Institution-wide strategic planning process. Some of the approximately 1,000 responses to the survey's 12 open-ended questions discussed the Institution's educational programming and function; and
- ◊ OP&A study team participation in seminars and workshops on a variety of relevant topics (including museum education, Web 2.0, and informal education), as well as study team observation of internal Smithsonian education forums such as the Smithsonian Council of Education Directors (SCED) and the Educators Exchange.

In addition to considering information derived from secondary sources, internal Smithsonian documents and data, interviews, questionnaires, and in-person forums for information exchange, the study team drew on its decades of collective experience investigating program and policy issues at the Institution.

Appendix 1: Selected Bibliography

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Appendix 2: Outside Organizations Contacted

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American Museum of Natural History. New York, New York.
http://www.amnh.org

Art Institute of Chicago. Chicago, Illinois.
http://www.artic.edu

Boston Children's Museum. Boston, Massachusetts.
http://www.bostonchildrensmuseum.org

Brooklyn Botanical Garden. New York, New York.
http://www.bbg.org

Brooklyn Children's Museum. New York, New York.
http://www.brooklynkids.org

Bruce Museum of Arts and Science. Greenwich, Connecticut.
http://www.brucemuseum.org

California Academy of Sciences. San Francisco, California.
http://www.calacademy.org

Colonial Williamsburg. Williamsburg, Virgina.
http://www.history.org

Conner Prairie Interactive History Park. Fishers, Indiana.
http://www.connerprairie.org

Committee on Audience Research and Evaluation (CARE)/AAM. Washington, D.C.
http://www.care-aam.org

CREC Montessori Magnet School. Hartford, Connecticut.
http://www.crec.org/magnetschools/schools/montessori/

Dallas Museum of Art. Dallas, Texas.
http://dallasmuseumofart.org

Denver Art Museum. Denver, Colorado.
http://www.denverartmuseum.org/home

Duquesne University School of Education. Pittsburgh, Pennsylvania.
http://www.education.duq.edu/

EdCom: The Standing Professional Committee on Education/AAM. Washington, D.C.
http://www.edcom.org/

The Exploratorium. San Francisco, California.
http://www.exploratorium.edu

The Field Museum. Chicago, Illinois.
http://www.fieldmuseum.org

George Washington University. Washington, D.C.
http://www.gwu.edu

Iowa Science Center. Des Moines, Iowa.
http://www.sciowa.org

John F. Kennedy University
http://www.jkfu.edu

Library of Congress. Washington, D.C.
http://www.loc.gov/

Lower East Side Tenement Museum. New York, New York.
http://www.tenement.org

Metropolitan Museum of Art. New York, New York.
http://www.metmuseum.org

Minnesota Zoo. Apple Valley, Minnesota.
http://www.mnzoo.com

The Mint Museums. Charlotte, North Carolina.
http://www.mintmuseum.org

Museum Education Roundtable. Washingonton, D.C.
http://www.mer-online.org

National Building Museum. Washington, D.C.
http://www.nbm.org

National Gallery of Art. Washington, D.C.
http://www.nga.gov

Natural History Museum of Los Angeles County. Los Angeles, California.
http://www.nhm.org

New Jersey Historical Society. Newark, New Jersey.
http://www.jerseyhistory.org

New Mexico Museum of Natural History and Science. Albuquerque, New Mexico.
http://www.nmnaturalhistory.org

Peabody Essex Museum. Salem, Masschusetts.
http://pem.org

Philadelphia Museum of Art. Philadelphia, Pennsylvania.
http://www.philamuseum.org

San Diego Museum of Man. San Diego, California.
http://www.museumofman.org

San Diego Zoo. San Diego, California.
http://www.sandiegozoo.org

Science Museum of Minnesota. St. Paul, Minnesota.
http://www.smm.org

Seattle Art Museum. Seattle, Wisconsin.
http://www.seattleartmuseum.org

Wagner Free Institute. Philadelphia, Pennsylvania.
http://www.wagnerfreeinstitute.org

Appendix 3: A Brief History of Education at the Smithsonian Institution

Introduction[3]

Throughout its 163-year history, the Smithsonian Institution has participated in a broad range of educational activities. Interests of Smithsonian and Congressional leadership, the reality of funding, and activities elsewhere in the education and cultural sectors have influenced the form, content, and philosophy of these activities. The arrival of a new Secretary has led to renewed attention to education's definition, role, functions, activities, and organizational structure.

This appendix provides a brief historic overview of education and educational activities at the Smithsonian and identifies some of the key events, decisions, ideas, and documents that have shaped, and continue to shape, their present status. It is written from an assumption that understanding the past can inform both present and future decisions on education. The closing pages of this appendix offer some generalizations about the development and evolution of the education function at the Institution that provide insight into the present state of affairs.

This brief history for the most part does not address education and educational activities outside the Smithsonian (see Appendix 4, External Environment for that discussion). It is important to recognize, however, that national—and international—educational trends and currents, including national initiatives focused specifically on museum education, influence how the Smithsonian has handled this function.

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3 The Office of Policy and Analysis (OP&A) acknowledges the help, encouragement, and support of Pamela M. Henson, director of the Institutional History Division, SIA, Pamela Hudson-Veenbaas, Office of Fellowships, and Nancy Fuller and Bruce Craig of the Smithsonian Center for Education and Museum Studies (SCEMS). Any opinions expressed here are those of the OP&A study team.

This history is based on primary source materials held by the Smithsonian Institution Archives (SIA), secondary sources developed by SIA (e.g., online exhibitions), and primary and secondary sources in the Smithsonian Institution Libraries (SIL), including legal documents, committee reports, memoirs, internal records, and histories. Discussions of post-War II activities were informed by personal interviews with both retired and present Smithsonian staff. The inherent limits of such sources must be noted. For example, implementation of policies is often subject to exceptions, newspaper articles contain distortions, legislative victories occur through a process of compromise, personal reflections and recollections often lack objectivity, etc.

Early History[4]

In 1826, James Smithson, a notable amateur British scientist, drew up his last will and testament, naming his nephew as beneficiary. However, Smithson stipulated that, should the nephew die without heirs (as he did, in 1835), the estate should go "to the United States of America, to found at Washington, under the name of the Smithsonian Institution, an establishment for the increase and diffusion of knowledge among men" (Oehser 1983, 201-204). Congress authorized acceptance of the Smithson bequest on July 1, 1836 (Smithsonian Institution 1854, 111-117).

A decade of discussion over the appropriate use of Smithson's bequest, efforts to divert it to other causes, and unwise investment and mismanagement of the funds ended with the passage of the Act of August 10, 1846 (U.S. Congress 1846, 9:102).[5] It incorporated nearly all the suggestions made by academicians, scientists, educators, Congressmen and Senators, and others for use of the funds—an observatory, scientific research institute, national library, publishing house, art gallery, and museum. Only the recommendation that a university be established was omitted. Among those most strongly opposed to the idea of a university or institution of higher education was Congressman John Quincy Adams (former U.S. President), the chairman of the Congressional select committee to determine what to do about the bequest. He advocated applying the money toward scientific research. In several speeches, he emphasized that no school, college, or university should be created, giving two primary reasons: first, that the object of a university was not to increase knowledge, but to diffuse that which already exists, and second, that the business of educating America's children is a duty of the American people, who should not recur to a foreigner for their own responsibilities.[6]

The legislation, a compromise among competing interests, specified that the Institution should respect Smithson's mandate for the "increase and diffusion of knowledge." A Smithsonian Board of Regents was entrusted with the responsibility of interpreting and carrying out the legislation and Smithson's mandate. Section 5 of the legislation directed the Board of Regents to select an appropriate site and

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4 Much of this section is based on an online exhibition, *From Smithson to Smithsonian: The Birth of an Institution*, at http://www.sil.si.edu/Exhibitions/Smithson-to-Smithsonian/. It is adapted from an exhibition of the same name that appeared from July 1996 to January 1997 in the SIL Exhibition Gallery in the National Museum of American History. For brief histories of each of the Smithsonian museums and research institutes, see SIA, Smithsonian Museums at http://siarchives.si.edu/history/SImuseums.html and http://siarchives.si.edu/history/SIresearch.html (accessed July 4, 2009).

5 Act of August 10, 1846, 29th Cong., 1st Sess., 9 Stat. 106. The House passed the bill on April 29, 1846 and the Senate on August 10, 1846. President Polk signed it into law the same day.

6 These points are repeated in speeches before the Quincy Lyceum (November 13, 1839) and the Masonic Temple in Boston to the Mechanic Apprentices' Library Association (November 14, 1839). See Wilcomb E.Washburn's edition of the Adams lectures (Adams1965).

> *to cause to be erected a suitable building, of plain and durable materials and structure, without unnecessary ornament, and with suitable rooms or halls for the reception and arrangement, upon a liberal scale, of objects of natural history, including a geological and mineralogical cabinet; also a chemical laboratory, a library and a gallery of art.*

The Regents' first act was to build a "Norman Castle" on the National Mall in Washington, D.C., planned and supervised by architect James Renwick, Jr.[7] The group then appointed Joseph Henry (1846-1878),[8] a renowned physicist from the College of New Jersey (now Princeton University), as the first chief operating officer, or Secretary.

In the Report of the Organization Committee of the Smithsonian Institution, there is a further requirement that the building contain "the necessary lecture rooms" for the "diffusion of knowledge" (Smithsonian Institution 1847, 7).

Secretary Henry (1846-1878)

Interpretation of the Smithsonian's functions and focus would come to rely heavily upon the will of its leaders. A mission aimed at "the increase and diffusion of knowledge" and the responsibility for a national museum have been interpreted in many ways since the Institution's inception. Key to its development was Secretary Henry's "Programme of Organization," presented to the Board of Regents in December 1847 in the first annual report of the Secretary and adopted at the same meeting.[9] One essential feature of the plan to increase knowledge was to provide support for publications and lectures on original research; the other was the accumulation of collections of natural history and art, as well as the formation of a library. In the second annual report, Secretary Henry reported that the lectures would begin as soon as construction of a building was completed, and noted that getting the quality of lecturers he wanted would require remuneration for them to come to Washington. He asked that the lectures be scheduled when Congress was in session. Secretary Henry was also concerned about the size of the lecture halls, noting that the one planned for the east wing of the Castle could only hold 500 people, while the one in the main building would accommodate twice as many (Smithsonian Institution 1849b, 21). By 1850, the Secretary reported that during the past session of Congress

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7 The first Smithsonian Board of Regents' meeting was held on September 7, 1846 in a room of the Post Office Building on F Street, N.W. between 7th and 8th Streets. A history of the Castle, including photographs and biographical sketches of all the Secretaries, is in Field, Stamm, and Ewing (1993).

8 The dates following the names of Secretaries denote their period of service.

9 A transcript of the Programme is at http://www.sil.si.edu/Exhibitions/Smithson-to-Smithsonian/henry.htm (accessed October 1, 2008). Also see Smithsonian Institution (1848).

> *a series of popular lectures has been given to the citizens of this place and strangers in the lecture room of the Smithsonian Building,*

and that they were very well attended and received and should be continued. The report listed the topics, which included literature, geography, modern science, and biology (Smithsonian Institution 1851, 25-26). With the exception of the war years (the Civil War and later the World Wars), public lectures have remained a standard form of outreach for the Smithsonian.

Mention of educational materials (publications) was made in the earliest discussions after the establishment of the Smithsonian. For example, Secretary Henry observed that the country "*already teems with elementary works on the different branches of knowledge*" and that for the Institution to engage in that sort of publishing would "*dissipate [Smithsonian funds] without perceptible effect.*" However, he viewed the Smithsonian reports on the "*progress of knowledge*" as being useful to teachers.[10]

Secretary Henry was also a proponent of educating politicians as to the importance of science, as Rothenberg (1998) points out:

> *Henry believed that politicians could be educated as to the importance of science and would respond positively to requests by the scientific community."*

Rothenberg quotes Henry:

> *If the scientific men of the country will only be properly united they can do much for the advance of their pursuits through assistance from Congress. Politicians as a class are timid except when they have an object which they know is worthy and in the advocating of which they are sure of being sustained by authority (ibid.).*[11]

Secretary Baird (1878-1886)

By the time Spencer Fullerton Baird was appointed the Smithsonian's second Secretary in 1878, the U.S. National Museum was a reality. Baird relied heavily on George Brown Goode, assistant director of the museum, to develop it.[12] Goode arranged the collections according to a system of classification of his own devising, and he displayed objects in

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10 Henry's directives for Smithsonian publications are in Smithsonian Institution (1849a, 18).

11 The original source is given as "Joseph Henry to Asa Gray, February 21, 1849," *Papers of Joseph Henry,* 7:480 (Rothenberg 1998).

12 Baird first met Goode in 1872, when Goode was working as a volunteer for the U.S. Fish Commission in Maine. Goode worked with Baird until the latter's death in 1887. Goode himself died of pneumonia in 1896 at the age of 45.

didactic exhibits.[13] Over time, Goode became the leading figure in American museum theory and display. When the U.S. National Museum opened to the public in 1881 with displays of anthropology, art, geology, history, and natural history, it reflected Goode's philosophy and classification.[14]

In Goode's view, the early Smithsonian collections reflected a museum of research. When the Smithsonian accepted the Federal government's collections, it became the museum of record, the "official" repository for objects of art, culture, and science. Goode's new museum was also a museum of education, with exhibits to show the place of each object in a world order. The geology and natural history halls were arranged according to their scientific classifications. The anthropology and history of technology halls reflected the Progressive Era's prevailing point of view of a progression that began with "primitive" cultures and concluded with the United States. Exhibits traced the history of each industry, such as agriculture, ceramics, music, and nautical navigation. A "Historical Relics" collection displayed the possessions of the founding fathers and colonial society.[15]

Secretary Langley (1887-1906)

Like Henry, the third Secretary, Samuel Pierpont Langley, emphasized research. In addition to expanding existing programs, he created the Smithsonian Astrophysical Observatory (SAO) in 1890, partly to support his own research.[16]

During Langley's tenure as Secretary, the idea of a national zoo was proposed as a way of dealing with the growth of collections under the care of the Smithsonian's Department of Living Animals. An act of the Congress established the National Zoological Park (NZP) in 1889. In 1891, the 200 animals living and breeding in back of the Castle moved to NZP's current location in Rock Creek Park. The basic argument for securing funding for this contentious expansion was the importance of preserving and studying endangered species.

Langley also supported the creation of a Children's Room, which opened in 1901 on the first floor of the south tower of the Smithsonian Institution Building (the "Castle"). The

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13 *Goode's Principles for Public Museums*. In the annual report of the Assistant Director of the National Museum (Smithsonian Institution, 1883, 81-95*)*, Goode outlined the principles to be followed in the arrangement of a public museum. He distinguished between educational and research museums, and stated the cardinal principles to consider in arranging a public museum. His report contained a new scheme of museum classification.

14 A few of the exhibits, notably birds, invertebrates, and art, remained in the original Smithsonian Institution Building, the "Castle."

15 The National Museum was housed in what is now called the Arts and Industries Building. It was funded by Congress in 1879.

16 SAO was originally located behind the Castle, with Secretary Langley as director. As noted later, in 1955 it moved to Cambridge, MA.

room, which housed natural history exhibits, was remodeled to satisfy the inquisitiveness of children, inspire a love of nature, and stimulate the development of other such collections in the country. The room's design increased its light and cheerfulness, and it was decorated with special colors and imagery selected to provide an environment that evoked nature.[17] The display cases were constructed so that everything was within a child's view. Poetic inscriptions replaced the Latin labels that were standard for natural history museums of the time because, as Langley explained from his understanding of children:

> *We are not very much interested in the Latin names, and however much they may mean to grown-up people, we do not want to have our entertainment spoiled by its being made a lesson.*

During construction, the phrase "Knowledge begins in Wonder," which summarized Langley's philosophy, was painted over the south entrance.[18] Langley also tackled issues that have been points of discussion since his time: accessibility, numbers of objects to be displayed, and content of labels.

As early as the 1880s, not long after the U.S. National Museum Building opened, the Board of Regents, which governed the Institution, discussed the overcrowded facilities and need for a third building in addition to the Castle and the National Museum Building. To cope with the growing collections, Langley persuaded the Congress to appropriate funds in 1903. The building that now houses the National Museum of Natural History (NMNH) officially opened in 1911, providing a new home for the natural history and art collections.

Secretary Walcott (1907–1927)

In 1923, 20 years after the Children's Room opened, the U.S National Museum set aside Rooms 44 to 47 in the foyer of the Natural History Building (NHB) for a District of Columbia collection, chiefly designed to aid teachers and students in the study of nature. Birds were installed in Rooms 44 and 45, while the mammals, reptiles (snakes, lizards, and turtles), batrachians (frogs, toads, and salamanders), fish, mollusks, and insects were displayed in Room 46. A stereomotorgraph was placed in Room 47, in which lantern slides of bird homes and wild flowers as they came in bloom were exhibited (Smithsonian Institution, 1924, 6).

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17 See the online exhibition, *The Children's Room in the Smithsonian Institution*, http://www.si.edu/ahhp/ChildrenRoomexhibit/childrensroomintroduction.html (accessed July 26, 2009). Also see Field, Stamm, and Ewing (1993, xii, 126-129, 132).

18 The appearance and function of the Children's Room were changed in 1939, and it served primarily as staff offices. In 1987, as part of the restoration of the Great Hall and development of a visitor center, the space returned to its early 20th century appearance, without Langley's special exhibits and specimens.

As noted earlier, the original legislation creating the Smithsonian included, albeit in vague language, provision for a "gallery of art." Lacking funds to acquire art, a patron to donate a major collection, or a strong internal advocate, interest in art languished in the Smithsonian's first few decades. In 1920, a National Gallery of Art (now the Smithsonian American Art Museum) was finally designated as a separate Smithsonian entity. In 1929, the gallery received an extensive collection from John Gellatly (1852–1931), which was moved from New York and installed in the gallery's space in the expanded NHB. Once this space opened, the Smithsonian's annual reports began to provide information on annual attendance.

In the mid-1930s, former Secretary of the Treasury Andrew W. Mellon pursued his interest in establishing a national art museum in the nation's capital, promising to donate his collection and to pay for a new building on the condition that it be named the National Gallery of Art. The Congress complied with Mellon's request, passing legislation in 1937 that established the National Gallery of Art (NGA) as an independent bureau within the Smithsonian Institution. In March 1941, President Franklin D. Roosevelt accepted the completed NGA building and collections on behalf of the people of the United States. The Smithsonian's existing National Gallery of Art was renamed the National Collection of Fine Arts (NCFA). Not until 1958 did NCFA get its own building.[19]

Another Smithsonian art museum, the Freer Gallery of Art (FGA), opened to the public in 1923. Founded by Charles Lang Freer (1854–1919), a railroad-car manufacturer from Detroit, it housed, in addition to approximately 7,500 works of Asian and Middle Eastern art, about 1,500 works of American art, including one of the most complete collections of etchings and lithographs (and some paintings) by James McNeill Whistler. These objects, funds to construct a building, and an endowment to provide for the study and acquisition of "*very fine examples of Oriental, Egyptian, and Near Eastern fine arts*" made the gallery the first Smithsonian museum dedicated solely to art. A separate section of the annual report for 1927 discussed events related to FGA, and reported overall attendance, breaking it down into segments that included those who came to study the collection, to make drawings, and to visit the galleries. Under the heading for attendance, the report stated that "Twenty-four groups of people, representing schools and other organizations, were given docent service in the galleries" (Smithsonian Institution 1928, 64-65). It is likely that docents existed at FGA prior to this report, but this is the first mention of them in a Smithsonian annual report. In using docents, the Smithsonian was following the custom of other art museums in the United States, such as the Museum of Fine Arts in Boston, Metropolitan Museum of Art in New

19 In 1980, by an act of the Congress, NCFA was renamed the National Museum of American Art (NMAA). In 2000, NMAA requested and received yet another name—the Smithsonian American Art Museum (SAAM).

York, and museums in Brooklyn, Chicago, Detroit, Indianapolis, and Philadelphia (Giltinan 2008, 114).[20]

Another type of educational activity—public outreach through mass media—began during Walcott's tenure. In late 1918 the Secretary resumed "the old custom" of sponsoring popular lectures by Smithsonian staff, generally in the Castle, as

> *a good means to interest the people in Washington both in the various activities of the Institution and also scientific work in general (LaFollette 2008, 7).*

To oversee the lectures, the Secretary created a Committee on Popular Lectures, headed by a biology curator, the superintendent of NZP, and the chief of the Bureau of American Ethnology. They selected the speakers, sent notices to newspapers and local high school teachers, and succeeded in attracting large audiences to the free illustrated lectures, held on Saturday afternoons.[21] These public lecture programs continued through 1920 and were extended through a modest national outreach effort. Twelve talks written by Smithsonian experts "in a style to be instructive and entertaining to a general audience" were mimeographed and distributed to YMCA facilities throughout the country, where local speakers read them aloud. These specially prepared talks described such topics as the physics of the sun, geology of "natural bridges," and "antiquities of the Bible."

Early in October 1923, when radio was still a shiny new toy, local Washington radio station WRC of the Radio Corporation of America contacted the Smithsonian and suggested that the Secretary begin broadcasting a series of talks on the Smithsonian Institution and its branches. Instead, the Secretary wrote to Austin Hobart Clark, a curator in the U.S. National Museum, saying that "it occurred to me that perhaps you might be willing to give a short talk and to make the necessary arrangements with the Company as to time, place, etc." Because of the success of his first appearance, Clark began, at the encouragement and invitation of the station, to arrange more "Smithsonian Radio Talks," inviting speakers from within the Institution's various bureaus. WRC gave the Smithsonian a regular time slot, and the scientific series was initiated on April 9, 1924 with Clark's talk on "The Giants of the Animal

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20 Docents appeared quite early in the United States, especially in art museums. For example, the Museum of Fine Arts in Boston introduced them in 1907 as a form of outreach that "would introduce newcomers to the museum and its contents, helping them feel welcome while developing a love for art" (Giltinan 2008, 109). Giltinan concluded that "essentially, docent service became two complementary, parallel forms of the same mission—one type, who are paid professionals, supervise and train the other type, who are usually volunteers and have inherited the title of docent." Among museums, the Smithsonian was late in utilizing docents.

21 This short section is based on excerpts in LaFollette (2008, 7–16). Footnotes and other references included in the book may have been removed from the online version of the text, found at http://www.press.uchicago.edu/Misc/Chicago/467597.html (accessed August 2, 2009).

World." Clark also ran the program. The series lasted more than four years (Oehser 1970, 136). LaFollette (2008) notes that:

> *Clark's broadcasts … represent one of the first sustained efforts in the United States to use radio to reach the public with science, the first wave in steadily expanding popularization efforts. The circumstances surrounding these pioneering broadcasts illuminate an important moment in the history of science and of American life. From the 1920s through the 1940s, the scientific community became more concerned about scripting its public image for the sake of increased funding and political support, and therefore became more engaged in popularization. The extent to which prestigious researchers in the United States cooperated in and supported ventures involving radio—a medium they regarded as intrinsically sensationalistic—demonstrated begrudging acceptance of the need for popularization.*

With respect to the Smithsonian specifically, LaFollette wrote:

> *Clark assured his supervisors that the radio talks had been "keeping our name before the public" in positive ways, and praise flowed from the Smithsonian leadership. The Institution's official report to its governing board echoed this expectation of benefits from radio broadcasting: "Possibilities in the spread of authentic scientific information through this means are great, since in this way informational talks prepared in an interesting manner go out to an extended audience fully appreciative of what they hear" (ibid.).*

Secretary Abbot (1928-1944)

Charles Greeley Abbot became Secretary after serving as Assistant Secretary since 1918. He led the Institution through the problematic years of the Great Depression and World War II. During his tenure, no new museums were added, and the number of research and other organizations remained as before. But, as the annual reports documented, activities continued apace at the Smithsonian generally and at the individual units, including the aforementioned new NGA and NCFA.

The new NGA building very quickly became a popular Washington destination. For example, the annual report for 1942 noted that attendance in that year reached 18,000—double the figure for the previous year (Smithsonian Institution 1943, 36-37). Since many visitors were from nearby government buildings, in January 1943 the gallery's education

department[22] inaugurated a 15-minute lunchtime talk, called "Picture of the Week," given twice each workday and once on Sunday. According to the annual report, the program attracted about 8,000 people. The Gallery's attendance continued to grow over the years. For example, by 1951 it had doubled again to 37,000. The education department also offered general, Congressional, and special tours and concerts, and started circulating a strip of 300 paintings (in black-and-white), loans of slides, and the film *The National Gallery of Art*. NGA had a mailing list for activities of 4,700 people.

A collaborative outreach activity of the Smithsonian, U.S. Department of the Interior Office of Education, Works Progress Administration, and National Broadcasting Company (NBC) network began in 1936 with the first airing of *The World Is Yours* radio program. The half-hour programs aired once a week on topics that included mammals, insects, geology, ethnology, art history, and aeronautics. Smithsonian staff prepared the scripts, and actors and musicians presented the material. The program was suspended in May 1942 because of the war.

Post-World War II

Secretary Wetmore (1945-1952)

Frank Alexander Wetmore joined the Smithsonian as superintendent of the National Zoological Park. In 1925 he was appointed assistant secretary of the Smithsonian Institution, becoming secretary in 1945. It was during his tenure that the Smithsonian continued developments interrupted by World War II.

From the perspective of a current observer of the Institution, the Smithsonian at the end of World War II was a modest enterprise. On the "museum side"—the units with collections that were accessible to the public—were the U.S. National Museum with its varied collections and NCFA and FGA. In the post-World War II period the Smithsonian added collections in disciplines not previously emphasized, including an expansion of the non-science ones into major holdings in their own right. As the U.S. National Museum became somewhat unwieldy, it began to move away from grouping all collections under a single administrative structure. For example, just as the war ended, an Act of Congress created a National Air Museum (NAM) as a separate bureau of the Smithsonian (August 1946).[23]

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22 At this point, designations such as education department did not mean formal organizations but, rather, loosely organized groups of people. As best as the OP&A study team could determine, NGA was the first to use this term.

23 In 1966, Congress changed the name to the National Air and Space Museum, as part of an act authorizing a separate building. The current Mall building opened on July 1, 1976 (see Smithsonian Institution Smithsonian Institution Archives n.d.).

The annual reports for this period provide separate information for each museum. The National Museum and NGA enlisted staff on an irregular basis to give tours of the collections to visiting individuals and school groups. For example, in the annual report for 1950, a section called "Docent Services and Other Staff Activities" at NGA recounted that, by request, 19 groups met in exhibition galleries for instruction by staff (Smithsonian Institution 1951, 47). The report from two years later stated that staff of the NGA education office delivered 26 lantern-slide lectures (Smithsonian Institution 1953, 32).

In the early fifties, the individual museums began to note requests for educational materials. For example, the annual report for 1952 said of NAM, under the heading "Cooperative and Educational Services,"

> *Requests for aeronautical information and educational material are constant and as the resources and abilities of the Museum and staff become better known, are increasing (ibid., 32).*

In the mid-1950s a more formal program of tours was initiated at the U.S. National Museum with the assistance of the Junior League of Washington. The program involved a volunteer docent or educational guide service for elementary school children in the greater Washington area who were visiting the museum. The project was under the immediate supervision of Frank M. Setzler, head curator of anthropology in the National Museum. The Hall of American Indians and First Ladies' Hall were chosen for the first series of docent tours. A trial tour was held in the American Indian Hall on January 25, 1956, and scheduled tours began on February 20, 1956 (Smithsonian Institution 1957, 11; Yochelson 1985, 10). The report also stated that

> *In reviewing the number of tours and children accommodated in this short period, I am extremely pleased with the response and yet somewhat chagrined that the Institution has not been able in the past to offer more of this kind of service. The numerous requests for it only accentuate the acute need for this type of educational program (Smithsonian Institution 1957, 12).*

Within two years, in October 1958, the Smithsonian Museum Service was established under the Office of the Secretary to coordinate the extension of museum activities. Its functions included administration of the volunteer docent program of the Junior League, other public outreach programs and responses to public enquiries, and publication of news releases. G. Carroll Lindsay was appointed acting curator of the Service (Smithsonian Institution 1960, 232). In contemporary terminology, the Smithsonian Museum Service was the same as a central office of educational activities. This, then, might be seen as the formal beginning of education as a separate function at the Institution.

Secretary Carmichael (1953-1964)

During the 1950s, Secretary Leonard Carmichael laid the groundwork for a period of growth. He secured an appropriation for a new museum building for the history collections, which opened in 1964 as the National Museum of American History (NMAH). In 1955 a revitalized SAO was transferred to Cambridge, MA. After the launching of Sputnik in 1957, the observatory played a major role in tracking artificial satellites (Doel 1990, 137-153). In 1958 the Patent Office Building was transferred to the Smithsonian to house the national art collections. A major capital improvement program was initiated at NZP in the 1960s.

As noted, the annual reports of the 1950s documented increasing educational activities. Staff at NZP, for example, gave four-hour training sessions to Senior Boy and Girl Scouts so that they would be qualified to lead others (Smithsonian Institution 1960, 169). In 1958, the education department of NGA reported that it was circulating nine sets of traveling exhibits for circulation among schools, libraries, universities, clubs, and other venues throughout the United States, which were viewed by approximately 20,000 people in the previous year. Its Calendar of Events went to 5,700 subscribers.

By 1960, the Museum Service took on the role of interpretation and reported that it

> *interprets to museum visitors and to the general public, the objects, specimens, and exhibits of the several Smithsonian museums and develops educational programs for interpreting the work of the institution in the field of science, natural history, art, and history (Smithsonian Institution 1961, 212).*

The number of tours at the U.S. National Museum continued to grow, numbering 579 in 1961, while 16,207 children participated in a range of activities. During that year, the number of visits to all open facilities reached 6.5 million, a substantial increase from the 2.6 million reported a decade earlier (Smithsonian Institution 1961, 7; Smithsonian Institution 1951, 6).

The Ripley Years

Secretary Ripley (1964-1984)

The appointment of Sidney Dillon Ripley as the Smithsonian's eighth Secretary in 1964 marked the start of major changes in the size and depth of offerings and number of facilities at the Smithsonian. Between 1964 and1984 numerous new initiatives and outreach programs, eight new museums, and seven research facilities, along with new buildings for existing units, were added. These included the newly-renovated Patent Office Building;

National Portrait Gallery (NPG); Renwick Gallery; Hirshhorn Museum and Sculpture Garden (HMSG); National Museum of African Art (NMAfA); Arthur M. Sackler Gallery; Anacostia Neighborhood Museum; Cooper-Hewitt, National Design Museum (CHNDM); National Air and Space Museum (NASM); and new ecological research centers in Florida and Maryland.

Also in this period, in 1973, the Smithsonian and the Harvard University Observatory strengthened and formalized their collaboration with the creation of the joint Harvard-Smithsonian Center for Astrophysics (CfA).[24] Along with the research carried out at the center, it became involved in educational research, science education projects with foundation funding (e.g., National Science Foundation [NSF]), and educational programming. The earliest undertaking was Project STAR (Science Teaching Through Its Astronomical Roots) in 1985. Between 1985 and 1992, the educational activities were part of the Office of the Director. In 1992, when the projects and programs became too large to manage out of the director's office, CfA created a Science Education Department (SED).[25] With a staff that includes education researchers, scientists, teachers, media specialists, and graduate students, SED has developed curricula and materials that reflect current scientific and educational philosophy and are intended to meet the needs of science teachers and students, with emphasis on grades K-12, both in the classroom and through professional development. One aim of SED is to advance the public's understanding of astronomy and the physical sciences.[26] In part because of its orientation (academic research and publications), affiliation with a major university (Harvard), funding (heavy reliance on grants), and location (Cambridge, MA), SED has developed its programs and research independently of the other Smithsonian education units.

From the beginning, Ripley

> *wanted the staid old place [the Smithsonian] to become a destination where people could not only learn but have fun doing it. He made it kid-friendly by installing a carousel on the Mall and setting up a life-size fiberglass triceratops named Uncle Beazley in front of the Natural History Building so that the youngsters could play on its back. He inaugurated the very popular Folklife Festival with singing and*

24 Nearly 300 astronomers, astrophysicists, and other earth and space scientists now undertake major research programs at CfA.

25 SAO has scientific research divisions and support departments. Since SED straddles these two areas—it conducts research, but also handles public affairs and provides other services to the Observatory), it was classified as a scientific department.

26 See http://www.cfa.harvard.edu/sed/.

dancing and arts and crafts from cultures around the nation and the world (Moser 2001[27]).

Central Units and Offices

When Ripley took office, the central organizational structure of the Smithsonian was essentially flat, with most managers/directors reporting to him. Within a few years, especially with the addition of new units, he established a more formal structure, as evidenced by the changes in the Table of Contents of *Smithsonian Year*, the new general title given to the annual report of the Secretary of the Smithsonian. While former Secretaries had always had an Assistant Secretary (or later, Under Secretary), Ripley increased the number of senior staff to handle the growing responsibilities. For example, in 1964 he named the first Assistant Secretary for Science, who took over many functions that had previously been handled by one of the other Assistant Secretaries (Smithsonian Institution, Smithsonian Institution Archives [1963-1973].

Most of the central units and offices formally dedicated to educational activities and outreach were established under Ripley. In October 1964, in recognition of the Smithsonian's responsibilities and opportunities in research and higher education, he established the Division of Education and Training under the Office of the Secretary to coordinate fellowship appointments of researchers, students, and scholars, who worked in their fields of interest with Smithsonian professionals. In July 1965 he recruited Charles Blitzer to be Director of Education in the division.[28] The division's functions fell into two broad categories: (a) programs directly related to Smithsonian research in science, history, and the arts; and (b) programs directly related to the exhibition and public education functions of the museums. The division also began a biennial publication about research opportunities at the Smithsonian that included information on internships, fellowships, etc. By 1966 the division had also helped establish nine partnerships with universities for graduate training in fields such as paleobiology, marine sciences, invertebrate biology, paleontology, American studies, fine arts, and oriental art. In 1968 the division underwent the first of a number of name changes—to the Office of Academic Programs, followed by the Office of Fellowships and

27 See also http://www.smithsonianmag.com/people-places/ripley_obit.html?c=y&page=2 (accessed July 27, 2009).

28 Charles Blitzer served in this position for three years and then became Assistant Secretary for History and Art (1968-1983). During Blitzer's tenure as assistant secretary, the Hirshhorn Museum and Sculpture Garden and the National Portrait Gallery opened and the Cooper-Hewitt, National Design Museum, Archives of American Art, and the National Museum of African Art became part of the Smithsonian (Smithsonian Institution, Smithsonian Institution Archives [1982], 1). At the same time the Division of Education and Training was created, the Smithsonian Institution Office of Anthropology and Office of Special Projects were set up to share the additional work (Smithsonian Institution 1966, 13).

Grants in 1978, Office of Fellowships in 2002, Office of Research Training and Services in 2005, and back to Office of Fellowships in 2008.[29]

During this same period the Smithsonian Museum Service also increased the scope of its activities. For example, it

> *expanded both the variety and quantity of its services in accepting the challenge of serving the nearly 19 million visitors who came to the Smithsonian in fiscal 1965 (Smithsonian Institution 1966, 370-374).*

The creation of a Smithsonian Society of Associates was announced in September 1965 as part of the celebration of the 200th anniversary of the birth of James Smithson. The society was intended to serve residents of the Washington metropolitan area in particular and offered members a wide range of educational and cultural activities, including classes in the arts, sciences, humanities, and crafts, as well as tours and opportunities for domestic travel. It was also intended to raise funds for the Smithsonian by involving members in the Institution's work and activities (Smithsonian Institution 1967, 38-39; Oehser 1970, 174). The Smithsonian Society of Associates was renamed The Smithsonian Associates in 1966 (Johnstone [1967-1991]).

In May of the following year, the Secretary's wife, Mary Livingston Ripley, formed a Smithsonian Women's Committee.[30] Its purpose was to advise the Smithsonian Associates and raise funds to advance the Institution's mandate to increase and diffuse knowledge, especially through educational activities.

Publication of the *Smithsonian* magazine started in 1970 with the original goal of expanding The Smithsonian Associates into a large national organization. Instead, a Smithsonian National Associates Program (SNAP) was established in 1970 in conjunction with the *Smithsonian* magazine (Johnstone [circa 1975-1986]). As the chief benefit of membership in both The Smithsonian Associates and SNAP, the magazine was to serve as a means of communication between the Institution and its local and non-local constituencies. In 1972, the two programs were consolidated under the management of an executive director (jointly, the programs are now known as The Smithsonian Associates [TSA]).[31] Ripley also instituted the Smithsonian Institution Traveling Exhibition Service (SITES), sending a wide range of exhibitions to communities around the country.

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29 The dates of the name changes are courtesy of the Office of Fellowships.

30 It was originally called the Ladies Advisory Committee of the Smithsonian Society of Associates (Smithsonian Institution, Smithsonian Institution Archives 1966).

31 Both the Smithsonian Associates and SNAP came under Membership and Development, whose director reported directly to Secretary Ripley. In July 1974, Janet Solinger became executive director of the local program and renamed it the Smithsonian Resident Associate Program (RAP) (Johnstone [1967-1991]).

The *Smithsonian* has covered a broad range of topics in science, art, and history, guided by the original instructions of Secretary Ripley to publish material in areas or subjects in which the Institution is or "might" be interested. Circulation grew from 175,000 in 1970 to 1,850,000 in 1984. That growth continued to reach a high of 2,100,000 between 1987 and 1995. Circulation at the end of 2008 was about 2,000,000.[32]

Ripley also saw the Smithsonian as having an educational role beyond its own museums and constituents, according to the 1964 annual report:

> *As part of this wider usefulness of the Smithsonian to education we hope that it may be possible to broaden the Smithsonian's traditional cooperation with museums throughout the world. Museums and their related laboratories are just entering a new era, and museum resources are being drawn upon as never before for general education (Smithsonian Institution 1965).*

By way of context, the report recognized the growth of educational activities throughout the country:

> *[T]hirty years ago a mere 15 percent of museums in America were connected with education in some form. … Today over 90% are involved, ranging from simple school-extension programs to post-graduate fellowships (ibid.).*

The annual report for 1966 reiterated the Secretary's interest in education:

> *The Smithsonian Institution is much interested in the present condition of learning. We are concerned to relate our bureaus and offices to those in higher education at various levels. The Institution hopes to join with other institutions in the city to foster an international center for advanced studies; we shall continue to develop individual programs with universities (Smithsonian Institution 1967).*

In 1968 the Office of Education and Training became the Office of Academic Programs, under Director Philip C. Ritterbush, a change that reflected the Institution's desire to continue its development as an auxiliary for all educational institutions, from elementary through post-secondary, and to expand its formal instructional activities, such as seminars, tutorials, and survey courses. The new office trained volunteer docents, wrote guides for educational visits, and produced audio-visual materials for teachers and schools (Smithsonian Institution 1969, 33).

The annual report for 1968 described the office's new emphasis:

32 Personal communication to Zahava D. Doering, senior social scientist, OP&A, July 29, 2009.

> *The best sign of progress in education is change in the curricula of instruction, which must not be permitted to settle into final form. Patterns of knowledge constantly change and students discover relevance in different ways. During this academic year the Smithsonian inaugurated a division of elementary and secondary education to draw upon collections, exhibits, audio-visual materials, and other Smithsonian resources to augment and improve curricula for the nation's schools. Under the leadership of Nathanial R. Dixon, Associate Director of the Office of Academic Programs (he was formerly principal of Scott-Montgomery Elementary School), the Institution has embarked upon purposeful exploration of new kinds of educational experience for students at all levels or primary and secondary education (Smithsonian Institution 1969).*

The Smithsonian developed more formal internship programs throughout the 1970s. In 1975, under the auspices of the Office of Academic Affairs, 14 interns from the Master of Arts in Teaching Museum Education Program at the George Washington University joined the Institution for a 12-month program combining museum education studies and seminars, university courses in a specialized area, visits to museums in both Washington and other cities, and school and museum internships (Smithsonian Institution 1975, 4).[33] In the response to a memorandum from Under Secretary Phillip Hughes in October 1981, a Smithsonian Internship Council was formed in 1982 to

> *establish minimum standards for some 27 student intern programs which operate independently at the Institution (Smithsonian Institution 1982, 352).*

Radio Smithsonian, a weekly half-hour magazine-format radio program inaugurated in the summer of 1969 and continuing until 1990, was carried on local radio stations in the Washington, D.C. area, as well as educational radio stations around the country and overseas. Originally, supervision of production was assigned to the Office of Public Affairs (Stauderman [circa 1963-1988]), but in 1976, when the Office of Telecommunications (OTC) was established as a separate unit reporting directly to the Office of the Assistant Secretary for Public Service, *Radio Smithsonian* became one of its broadcast series.

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33 The Smithsonian has had student workers since its earliest years. Indeed, in the 1850s, Baird had a group of young natural history students who lived in the towers of the Castle, did field work during the summers, and learned natural history from him. They dubbed themselves the "Megatherium Club" after an extinct giant sloth. They would serenade Secretary Henry's daughters outside their windows at night. Throughout the 19th and early 20th centuries, students would come to the Smithsonian for practicums (now internships) and graduate research (now fellowships), but these were not formal programs run by a central office and had no separate funding. (Personal communication to Zahava D. Doering, senior social scientist, OP&A, 2009.)

Another initiative begun under Ripley was development of hands-on activities, especially in natural history for children. As a Special Assistant to the Secretary, Caryl Marsh created and had a major role in implementing plans for the Anacostia Neighborhood Museum, which opened in 1967. There she prepared a small exhibit consisting of about a dozen boxes,[34] each crammed with different categories of objects—shells, fossils, pottery, arrowheads, and the like (Marsh 1987). This approach, novel for its time, came to full fruition in the Discovery Room of NMNH, for which Marsh developed the blueprint and oversaw implementation between 1968 and1972. The project received funding from NSF's Science Education Directorate. The room's purpose was twofold:

> *1) to offer the museum visitor an opportunity to touch and handle a variety of replaceable and representative objects from the museum collections; and*
>
> *2) to give museum staff the opportunity to find out if guided handling of real objects leads the visitors to the kinds of curiosity, learning, or insights about natural objects that do not occur as readily in other kinds of learning situations (ibid. 4).*[35]

In 1973, an Office of Elementary and Secondary Education (OESE), which had first appeared as a division in 1968, began operations, reporting to the Assistant Secretary for Public Service[36] and directed for a decade, from planning to 1981, by David Estabrook. Its primary function was to help teachers use the Smithsonian more effectively by offering informative publications to help teachers and their students take advantage of Smithsonian programs, exhibitions, and activities. The office also conducted summer workshops for teachers.

Also in 1973, the Office of Museum Programs formed a Department of Psychological Studies, to be

> *concerned with developing methods to gauge the educational effectiveness of exhibits and exhibit techniques as well as to develop programs so that a larger segment of the visitor population can be effectively enriched by participating in museum-related activities (Smithsonian Institution 1974, 143).*

This appears to be the first mention of any type of assessment.

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34 Each box was 10" x 6" x 5".

35 These activities were thought of as practical, informal observations, rather than research as traditionally defined (personal communication to Zahava D. Doering, senior social scientist, OP&A, July 31, 2009).

36 This reporting structure continued when the position was renamed Assistant Secretary for Education and Public Service and then Assistant Provost for Educational and Cultural Programs.

A year or so later, the Office of the Assistant Secretary for Public Service articulated OESE's role and an expanded role for the individual museums. The annual report for 1974 described the change, noting that

> *the role of Public Service is education, and Smithsonian educational activity has been mushrooming as the desire of the American public of all ages to be educated has burgeoned in one of the liveliest social phenomena of our time. Thus, our view, in fact, is that our major museum and gallery directors are the best qualified to develop education programs related to their collections or researches. In consequence, we decentralized the Office of Elementary and Secondary Education and thereby made people and money available for the establishment of education specialist positions and supporting sections in all of the principle museums and galleries (Smithsonian Institution 1975, 217).*

OESE became a service unit:

> *As recently redefined, the Office is now a service unit, charged with giving assistance, upon request, to the Bureau education offices of all of the Smithsonian museums, the Chesapeake Bay Center for Environmental Studies, and the National Zoo (ibid., 225).*
>
> *A primary responsibility of the Office of Elementary and Secondary Education (OESE) is to encourage cooperation and exchange of information among the Smithsonian education offices and between those offices and the District of Columbia area schools (ibid).*

The office continued to offer two publications, *Let's Go* and *Learning Opportunities for Schools*, teacher workshops, and docent training.

Shortly thereafter, in 1976, OESE began publishing the experimental newspaper, *Art to Zoo.* Aimed at grades four through nine, it was provided free to teachers,[37] and within a year was being distributed to over 800 of them nationally.

A further boost to educational activities came in 1978, when the Board of Regents established a special Trust-fund account for collections, special research projects, and educational outreach.

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37 The publication began as a quarterly, but its frequency changed to three times per year. In 1997, it was renamed *Smithsonian in Your Classroom* and is currently published twice annually by SCEMS.

Developments at the Museums and Research Centers

By the time OESE's second director, Ann Bay, was appointed in 1981, all the museums had their own departments of education. The decentralization of OESE, combined with the growth of museums and research centers under Secretary Ripley's leadership, encouraged all the units to develop new programs both onsite and at schools.

Visitor Services at NZP reported that

> *The recently created Office of Education and Information is building into the Zoo's visitor programs new dimensions in visitor learning and is guiding the Friends of the National Zoo in their active volunteer guide and docent program (Smithsonian Institution 1976, 129).*

The Chesapeake Bay Center for Environmental Studies (CBCES, now the Smithsonian Environmental Research Center [SERC]) announced that

> *With an addition of a full-time Program Director this past year, education activities were restructured and several new starts were made. A large-scale model field trip program in outdoor education at the CBCES was initiated … designed to satisfy specific curriculum requirements in science education (Smithsonian Institution 1976, 75).*

Education at NMNH also grew, but through the addition of programs rather than a coordinated plan. Many programs were developed through the talents of volunteers, some of whom would later join the staff as employees. In 1974 NMNH appointed Joan Madden its first Education Coordinator, with special responsibility for educational programs. From 1980-1985 the position was called Supervisory Information and Education Specialist. It was elevated when Laura L. McKie was made Assistant Director for Education, a position she held from 1987-2001. The present Office of Education is charged with planning, coordinating, and conducting numerous educational activities for students, teachers, families, and the general public. Among other programs, the office operates three hands-on learning centers—Discovery Room, O. Orkin Insect Zoo, and Naturalist Center.

At NMAA/SAAM, what is now called the Office of Educational Programs had its origins in the Office of Museum Programs, established in 1968 to coordinate the activities of the Junior Museum, docent program, publication of postcards, and other education activities for the public. Susan C. Sollins, who originally held the title of Visual Information Specialist, was placed in charge and, in 1970, given the title of Chief. When she left in 1970, her duties were transferred to the Department of Education, headed for years by a Curator of

Education. Not until 1990 did the Office of Educational Programs become a self-standing entity.

In 1970, as the individual museums developed their own activities, educators around the Smithsonian and in the Washington, D.C. area founded the Museum Education Roundtable (MER). Today MER is an independent, non-profit educational corporation that

> *provides leadership in professional development for a broad and diverse audience of museum practitioners and educators.*

MER publishes the only professional journal devoted to museum education, the *Journal of Museum Education.*[38]

Consistent with Secretary Ripley's belief in the importance of the Smithsonian serving a national and international constituency, in 1971 he created the Office of Museum Programs (OMP), with Peter C. Welsh as director. OMP was to serve as a resource for the world museological community, with a focus on practitioners. The office developed and sponsored an annual series of short-term workshops in the United States and abroad to train museum staff in all aspects of museum work. OMP also established a Museum Reference Center[39], Conservation Information Program that produced videotape and audio-visual programs for use by museums, and a Psychological Studies Program that was the first formally to research the behavior and activities of museum visitors.

In 1975 Jane R. Glazer became director of OMP, serving until 1989. During Glazer's tenure, OMP's workshop series expanded to 30 offerings, held at the Smithsonian and other locations nationally and abroad. The three-to-five day programs covered such topics as care of collections, museum security, accessibility practices, and educational programs. In 1976, OMP established the Native American Museum Training Program, a special initiative to assist staff at Native American tribal museums, and, in 1984, the Minority Museums Awards Program, the first effort to diversify museum workforces. Glazer codified the Smithsonian Internship program, established a Visiting Professionals Program that enabled senior museum staff to access the resources of the Smithsonian, and directed the Kellogg Project, a six-year grant from the W.K. Kellogg Foundation to stimulate innovative educational programming. OMP staff convened major international conferences, including "Children in Museums,"

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38 http://www.mer-online.org/about/index.html.

39 One of 20 branches of SIL, the Museum Studies & Reference Library (MS&RL) was established in 2002. MSRL combines collections formerly held by the Museum Reference Center and Central Reference & Loan Services. The library has information resources on museums and all aspects of museum operations, and a comprehensive reference collection to support scholarly research in Institution programs. It is one of the largest sources of information and bibliographic services for museum professionals and researchers in the United States. (See http://www.sil.si.edu/libraries/msrl/msrl_about.cfm, accessed August 2, 2009).

"Women in Museums," and "Older Adults in Museums." She expanded the international impact of the Smithsonian through her service with the International Council of Museums (ICOM), International Research and Exchanges Board (IREX) museum exchange program with the German Democratic Republic, and organization of the U.S. Information Agency's 30-day visits for international museum directors to the United States. OMP coordinated five editions of the publication, *Museum Studies Training Program in the US and Abroad,* produced the audiocassette and booklet package *The Educated Eye*, and with the Resident Associate Program co-sponsored a program on "Museum Careers" (Glazer and Zenetou 1996). During her tenure, OMP grew primarily as a result of her energy and creativity, combined with a belief in the Smithsonian's national (and international) role.[40]

Reorganization in the Smithsonian's programmatic structure took place as the Smithsonian grew during the Ripley years, but it remained basically the same after 1972. Bureaus and activities fell under four major divisions, each headed by an Assistant Secretary: Science, History and Art, Museum Programs, and Public Service.[41] All the museums, except the Anacostia Neighborhood Museum, were divided between Science and History and Art. The Office of the Assistant Secretary for Museum Programs was responsible for activities that involved intellectual and practical support for museums (e.g., the Conservation Analytical Laboratory, Office of the Registrar, libraries, and OMP). Public Service activities were oriented toward outreach (e.g., Anacostia Neighborhood Museum, Smithsonian Resident Associates, Smithsonian Press, *Smithsonian* magazine, and OESE).[42]

From Secretary Adams to the Present

Secretary Adams (1984–1994)

Robert McCormick Adams, who had had a wide-ranging career that included archaeology of early cultures such as Mesopotamia and the cultural roles of technology in society, became the ninth Secretary of the Smithsonian, serving from 1984-1994. Adams' agenda for the Institution included a focus on cultural and biological diversity, renewed attention

40 James E. Sims served as OMP's acting director from 1989-1990; Rex M. Ellis became director in 1991 and served until his departure to NMAH to become chair of the Division of Cultural History. Glazer served as special assistant in the offices of the Assistant Secretary for the Arts and Humanities from 1989-1994, assistant provost for the Arts and Humanities from 1994-1996, and Provost from 1996 until her retirement later that same year.

41 The fifth assistant secretary was the Assistant Secretary for Administration. Substantial encouragement to offices reporting to the Assistant Secretary for Museum Programs came from the first incumbent, Paul N. Perrot. He assumed the duties formerly discharged by the Director General of Museums and was reported to be an excellent administrator. In 1986 the office was merged into the new Office of the Assistant Secretary for Museums.

42 The Anacostia Neighborhood Museum was established as a non-collecting unit, with a focus on service to the community. Administration, financial services, and support services are outside of this discussion.

to upgrading of research, improvement of the quality of exhibitions and activities, and expansion of educational programs. He placed great emphasis on broader representation and involvement of diverse cultural and ethnic communities in the Smithsonian and its programs. Native American concerns regarding collections of their artifacts and human remains at the Smithsonian received high priority.

While Adams established some new units, he was more interested in consolidation. Thus the Smithsonian's expansion proceeded at a slower rate. With respect to new units, the National Museum of the American Indian became part of the Smithsonian in 1989, with a branch, the George Gustav Heye Center, opening in New York City in 1994. The National Postal Museum, established in collaboration with the U.S. Postal Service, opened near Union Station in Washington in 1993. Congress authorized an extension of NASM that became the Steven F. Udvar-Hazy Center, near Dulles International Airport in Virginia.[43]

The National Academies and the Smithsonian Institution jointly created the National Science Resources Center in 1985. Its goal was to improve the learning and teaching of science by developing and providing services and products to. From the start, the center consisted of three integrated parts: Leadership and Assistance for Science Education Reform (LASER), Professional Development, and Curriculum Development.[44] Unique among Smithsonian education units, the National Science Resources Center (NSRC) has devoted considerable resources to evaluation. Since its inception, it has used the Program Evaluation and Research Group (PERG) of Lesley College and the Center for the Study of Testing, Evaluation, and Educational Policy, both located in the Boston area, to evaluate its work.

Secretary Adams recognized the importance of understanding Smithsonian constituents. An Office of Educational Research (SOER), funded by NSF, opened at NZP in 1983, reporting to the Assistant Secretary for Science. John H. Falk, previously on the staff of CBCES, was appointed director. SOER was

> *established to investigate and improve learning as it occurs outside the formal education system. Recognizing that schools alone are not equipped to address all the educational needs of America today, the SOER is engaged in promoting educational endeavors at all levels and in diverse settings in the belief that lifelong learning habits can only be established with the support and participation of a broad spectrum of society (Smithsonian Institution 1985, 157).*

43 It opened in December 2003, when Lawrence M. Small was Secretary. See http://newsdesk.si.edu/factsheets/si_secretaries.htm.

44 The LASER Center guides school districts through the exploration, adoption, and implementation of quality science education programs.

The office was closed in September 1985 (Smithsonian Institution, Smithsonian Institution Archives [1983-1985, 1975]).

An Institutional Studies Office (ISO) was created in 1987 with funding from the Board of Regents, with an initial focus on diversifying Smithsonian audiences. ISO was also tasked to collect systematic data about Smithsonian audiences, members, and staff; conduct scientific studies of the visitor experience; undertake audience research for exhibition development; and evaluate Smithsonian exhibitions, educational offerings, and public programs.

In 1994, the Commission on the Future of the Smithsonian Institution issued its report, *E Pluribus Unum: This Divine Paradox*, setting forth its vision for the Smithsonian of the 21st century. In the 1980s and 1990s a number of Smithsonian exhibitions opened that provoked considerable controversy during their making or after they opened, such as *The West as America: Reinterpreting Images of the Frontier, 1820-1920* at NMAA; *Science in American Life*, at NMAH; and *Enola Gay* at NASA. They became the focus of Congressional, scholarly, and public debate over issues of academic freedom and cultural and historical identity.

Adams also undertook some consolidation through several reorganizations, leading to a growth in direct reports to the Secretary. In the first years of his tenure, a distinction was made between the units that reported to the Assistant Secretary for Research and to the Assistant Secretary for Museums. Units that had reported to the Assistant Secretary for Museum Programs were divided between the Assistant Secretary for Museums (under which was OMP) and the Assistant Secretary for Public Service (under which was OESE). In 1992, further shifting and sorting resulted in the creation of additional assistant secretaries for: Arts and Humanities; the Sciences; Education and Public Service; External Affairs; Institutional Initiatives; and Finance and Administration. This was the first time the word "Education" appeared at a high level in the Smithsonian organizational chart.

As background for a close look at the Institution's educational activities, the Office of the Assistant Secretary for Education and Public Service, headed by James Early, commissioned an inventory of all education programs (Doering, et al.1992). In November 1992, Early circulated a "Policy Paper on Smithsonian Education: Issues and Recommendations."[45] The report was timely, coinciding with the release of a report by the American Association of Museums (AAM), *Excellence and Equity: Education and the Public Dimensions of Museums* (American Association of Museums 1992). The AAM report, which offered the first major look at the educational role of museums,[46] stated that they should

45 As of this writing, Early was director of Cultural Heritage Policy at the Center for Folklife and Cultural Heritage. He provided a copy of the report to the OP&A study team and SIA.

46 Not coincidentally, this emphasis on education coincided with major *increases* in funding nationally for cultural activities from Federal, state, and local governments.

foster the ability to live productively in a pluralistic society and to contribute to the resolution of the challenges we face as global citizens.

enrich learning opportunities for all individuals and to nurture an enlightened, human citizenry. [47]

The Smithsonian policy paper took three principles as its starting point:

1. Museums are important educational institutions. Children and adults alike are able to learn from the collections they hold, the research their scholars conduct, and the exhibitions and programs that are presented.

2. As the National Museum, the Smithsonian Institution is uniquely positioned to model effective educational practices and has an obligation to do so.

3. As a major research center and as a national trust for an unequalled collection in the arts, sciences, and humanities, the Smithsonian provides informal and formal learning experiences to audiences composed of individuals both young and old, from quite different cultural, educational, and economic backgrounds (Early 1992, 2).

The report went on to define the mission and goals of Smithsonian education and called for an educational agenda with four priority areas: Pre-college Initiatives; Exhibitions as Education; Continuing Education; and Undergraduate/Graduate Studies/Museum Studies. The recommendations accompanying the description of each priority area generally called for further study or task forces.

The report identified several key issues facing Smithsonian education:

- ◊ Audience—equity of access;
- ◊ Staff—professional development, use of docents, role of protection service officers, and curatorial involvement in education;
- ◊ Media and Education—publications; and
- ◊ Assessment and Evaluation—the lack of requirements and funding for these activities.

47 The AAM *Code of Ethics for Museums* notes that the common denominator for museums is making a "unique contribution to the public by collecting, preserving, and interpreting the things of this world." The code also recognizes the variety of sizes and types of museums: "Their numbers include both governmental and private museums of anthropology, art history and natural history, aquariums, arboreta, art centers, botanical gardens, children's museums, historic sites, nature centers, planetariums, science and technology centers, and zoos." See "What Is a Museum?" http://www.aam-us.org/aboutmuseums/whatis.cfm (accessed August 2, 2009).

Management responsibility and coordination were also addressed:

> *The present organization of education is fragmented in functions and insufficiently coordinated. The effect of this lack of coordination at the Smithsonian leads to inefficient use of funds and staff energy, sometimes resulting in "re-invention of the wheel," programmatic overlap, and all too little of the synergy that the Secretary's Area of Emphasis on Education describes as an Institutional goal (ibid., 4-5).*

To solve this problem, the report recommended, among other actions, that the Office of the Assistant Secretary for Education and Public Service have responsibility for Institution-wide coordination of educational activities at the Smithsonian.

The final section of the report dealt with funding and suggested a comprehensive approach to raising money.

Although the report was widely discussed, the Smithsonian never issued a revised report based on Institution-wide comments, and few of the recommendations were implemented, in part because of a reorganization carried out by the next Secretary.

Advisory Groups

The Smithsonian Institution, like other cultural and academic institutions, had developed a number of volunteer advisory groups, variously called boards, councils, and commissions. These entities, which included scholars, philanthropists, and other interested private citizens, offered advice on programs, budgets, and planning, and played a role in the evaluation of directors. Most museums, and a number of its research centers and programs, had such a group them (e.g., National Postal Museum Advisory Council, Smithsonian Environmental Research Center Board of Advisors, and National Portrait Gallery Commission).

There were two principal pan-Institutional advisory groups at the central level. One of the key advisory boards to the Regents and the Secretary, established in the 1970s during Ripley's tenure, was the Smithsonian Institution Council. It was made up principally of people from the academic world, including Nobel laureates, artists, critics, museum directors, distinguished professors, media experts, philosophers, and writers. The council reviewed and debated topics embracing the entire Institution, including the units and their interrelationships (Heyman 1998). Both Ripley and his successors used the Smithsonian Council in a way similar to that of visiting committees at universities. However, the council's importance began to decline during the Heyman era, a trend that accelerated under Small. The last full meeting of the council was in 2005, after which it was disbanded.

The second pan-Institutional group was established in 1970—the Smithsonian National Board (SNB). SNB had several roles: fund raising; fostering communication between the Institution and SNB members' communities; advising the Secretary on issues of Institutional advancement; and promoting successful public-private partnerships. Its sub-committees addressed specific topics or areas, including education. The Office of Development provides administrative support for the National Board.[48]

During Secretary Adams' tenure, a Smithsonian Cultural Education Committee was created to promote diversity across all aspects of the Smithsonian. The committee consisted of 12 to 18 members from outside the Smithsonian and focused its activities for the next decade on educational programs, diversity at all levels of the Institution, monitoring and accountability of diversity efforts, sensitivity to cultural pluralism in exhibition programs, and public outreach (Smithsonian Institution 1988, 24), it was chaired by Jeannine Smith Clark, a member of the Smithsonian Board of Regents.[49] It was this committee that, as one of its first activities, proposed and recommended funding to the Regents for ISO.

Prior to Secretary Adams taking office, different groups of staff had formed internal grassroots organizations, principally to promote communications, share information, and advocate for specific interests. Examples were the Council of Bureau Directors (COBD), which preceded Adams by several decades, and the Registrarial Council and Council of Administrative Officers, both established in the early 1970s. Other such organizations emerged during Adams' tenure, in some cases in response to the power wielded by COBD in the face of Adams' laissez-faire management style. A Council of Information and Education Directors (CIED) that included the directors of all educational and information offices and research institutes was formed in late 1984 or early 1985, with the support of the Secretary, who believed that the non-museum/research institutes should have an equal voice with the powerful COBD. A few years later a Council of Administrative and Service Directors (CASD) came into being. A profession-specific group, the Council of Museum Education Directors (CMED), was developed in this same timeframe.[50]

Generally, these groups met monthly except during the summer. They had rotating chairs or co-chairs and recording secretaries. The chairs of COBD and CIED attended each other's meetings. CMED operated independently; while its intent initially was to undertake joint education projects, the records and interviewees note just a few. The one project CMED actively supported was the previously mentioned ISO inventory of programs. The work of

48 See http://www.si.edu/giving/giv_smithsonian_womens_committee.html and http://www.si.edu/giving/giv_smithsonian_national_board.html/(accessed August 2, 2009).

49 See http://siris-sihistory.si.edu/ipac20/ipac.jsp?session=1249408WJ17K5.4122&profile=sicall&uri=link=3100012~!2059~!3100001~!3100002&aspect=alpha&menu=search&ri=1&source=~!sichronology&term=Cultural+Education+Committee&index=PSUBJ#focus (accessed August 9, 2009).

50 CIED did not include unit education directors; only central offices were represented.

these groups diminished under the next Secretary, and they were either disbanded or operated at a low level of activity.

Secretary Heyman (1994–1999)

I. Michael Heyman became the Smithsonian's tenth Secretary in 1994 and proceeded to reorganize the Institution. He reduced the number of direct reports and eliminated the position of Assistant Secretary for Public Service, redistributing the units reporting to it. Perhaps the greatest change was the creation of the position of Provost, who assumed responsibility for two new major organizational offices headed by assistant provosts: Museums and Research Institutes, and Education, Museum and Scholarly Services. OMP and OESE, both responsible for educational activities but operating independently and sometimes at cross purposes, were assigned to the latter, with two smaller activities, the Educational Outreach Fund and the Committee for Wider Audience Development, going to OESE. For the first time, both OESE and OMP reported to the same individual.

A 1997 review of OESE's functions led to its being renamed the Smithsonian Office of Education (SOE) in 1998, and a similar review of the Center for Museum Studies (CMS, formerly OMP) led to a merger with SOE. As reported in the annual report for 1999,

> *A year-long strategic planning process culminated in the merger of the Smithsonian Office of Education (SOE) and the Center for Museum Studies (CMS). The new office interprets the collective knowledge of the Smithsonian and serves as a gateway to the Institution's education resources (Smithsonian Institution 2000, 59).*

The merged office was renamed the Smithsonian Center for Education and Museum Studies (SCEMS).[51]

Secretary Small (2000-2007)

During Secretary Lawrence M. Small's tenure, the National Board increased in size and, in addition to fund raising, created other committees to look at specific pan-Institutional programs. The Education Committee, with Robert Donnelley as chair, and Kenneth B. Miller as Vice chair, undertook a series of meetings with individual educators across the Smithsonian and met a few times with CMED.

51 Ann Bay, director of SOE, became director of SCEMS. She left SCEMS in 2000, and Stephanie Norby became director after serving in an acting capacity for one year.

As a first step in understanding the range and breadth of Smithsonian educational activities, SCEMS partnered with the SNB Education Committee to study education at the Smithsonian. SCEMS and OP&A, together with Office of Information Technology (OIT) and CMED, collaborated on a Smithsonian-wide survey to get baseline information about educational activities at all the units. An unpublished draft report was issued in 2002.[52]

The report contained recommendations based on an analysis of the survey results and organized according to the Secretary's four strategic goals (world-class research, public impact, management excellence, and financial strength), as follows:

- *Build an information management system that provides both central offices and units with key information for making decisions.*
- *Conduct studies that would investigate best practices in museum education to inform strategic planning.*
- *Develop a strategic education plan to ensure quality programs and maximum public impact. The Institution would set broad goals, and the individual units would develop their own plans for implementation.*
- *Examine management of education, including assigned roles and responsibilities, accountability, evaluation, and incentives for excellence.*
- *Build a financial management system that accurately captures costs, and explore new opportunities for financial support.*

Within several months, the National Board's Education Committee developed an action plan based on the report. Its overall strategy was to *"Add* world-class education *to the four driving strategic goals."* This plan was followed by a detailed implementation plan that contained many of the elements of the 1992 report discussed earlier.[53] The action plan had two organizational recommendations:

> *(6) Appoint a Smithsonian Education Task Force (Task Force), working under the direction of the Council of Museum Education Directors, to explore the full purpose of education at the Institution, recommend pan-Institutional goals*

52 *Education Survey Report*, prepared by the Smithsonian Center for Education and Museum Studies for the Council of Museum Education Directors, October 17, 2002, unpublished document.

53 Memorandum to Lawrence M. Small, signed: Frank A Daniels, Jr., Chair, Smithsonian National Board, Robert Donnelley, Chair, Education Committee and Kenneth B. Miller, Vice Chair, Education Committee, dated December 19, 2002. A comparison of the two reports is outside of the scope of this appendix.

including coordination and cooperation among museums and centers, and identify areas of focus for the development of best practices.

and

(7) Reconstitute the Council of Museum Education Directors (Council) *as a support and problem solving organization for museums, centers, and their directors. Rename the Council to the Smithsonian Council of Education Directors so that the name better reflects the makeup of the Council, which includes research and other non-museum centers. Appoint the Director of the Center for Education and Museum Studies (SCEMS) as the permanent Chair of the Council and ask the Under Secretaries to appoint two Vice Chairs, one educator and one from non-education personnel to be rotated annually.*

As of this writing, a task force had not been formed. However, SCED was reconstituted, has undertaken several joint projects, and as of this writing was developing a proposal for major funding for Smithsonian educational activities.

The reorganization under Secretary Small, and changes under his successor, Acting Secretary Cristián Samper (2007), did not alter the placement of SCEMS in a major way, except to group it, the Affiliations Program, TSA, and SITES under an office called National Programs. The current Secretary, G. Wayne Clough, who took office in 2008, is studying the Institution's organizational structure but had not announced any changes as of this writing.

Discussion

The history of education and educational activities at the Smithsonian foreshadows many of the issues that emerged in the current study.

In the last fifty years, secretaries beginning with Ripley spoke strongly about the importance of education, reorganized its centrality to the Smithsonian's mission, initiated major new programs, and upon occasion issued policy. However, despite all this attention to educational activities, it does not appear that at any point the definition, purpose, or priorities for education were dealt with strategically or holistically at either the central or unit levels. No Smithsonian vision for education has been articulated, no effort has been made to marshal the Institution's resources in the pursuit of strategic educational goals, and educational activities and organizations have generally been treated as a kind of optional add-on to other programmatic activities, rather than being integrated with them in a holistic fashion. Changes in leadership have led to repeated reorganizations that have led to a lack of continuity over time. The various changes and pronouncements of successive Secretaries have

had have minimal impact on the work of most Smithsonian educators, since they primarily affected the central administration; through it all, the units have continued to act largely independently. When all is said and done, educational activities—however important they may have been in the minds of Smithsonian leaders—never seem to have been more than a secondary priority in practice.

Further generalizations about the history of education at the Smithsonian include:

- ◊ Decisions have tended to be personalistic, rather than based on objective assessments of what activities would bring the greatest value and which audiences the Smithsonian (or individual units) could best serve.
- ◊ There has been a disconnect between the work of the central administration and the units, which dates from the policy of programmatic independence for the units articulated by Secretary Ripley's Assistant Secretary for Public Service. While the central administration has retained a role in coordination, communication, and delivery of some Institution-wide programs, almost everything else has been devolved to the museums and research centers.
- ◊ With a few scattered exceptions, there is little evidence that the units have collaborated with one another or sought to leverage their collective resources.
- ◊ The educational programs that exist today are the cumulative result of an ad hoc process of evolution without underlying direction. For the most part, the focus has been on informal education. (Major exceptions have been the Office of Elementary and Secondary Education, which emphasized services for teachers,[54] NSRC, and the SED department at CfA.) In general, formal education offerings have been aimed at teachers, and not directly at students. There was also been considerable emphasis on professional development through fellowships, internships, and workshops.

This unsystematic, somewhat personalistic approach to education was endemic at most museums, and was not specific to the Smithsonian. For example, in the mid-1980s, the Getty Center for Education in the Arts supported a study on the state of museum education (Eisner and Dobbs 1986a, 1986b; Dobbs and Eisner 1987). The major conclusions of the study were that the museum field in the United States lacked a basic mission for museum education, a grounding in educational theory, and professional standards for educators; was plagued with insufficient resources for educational activities; and offered limited career opportunities to educators. While a follow-up study ten years later (Williams 1996) found improvements—for instance, art museums were more involved in curriculum planning,

54 As discussed above, this role changed when it became SOE and subsequently merged with the Center for Museum Studies in 1998.

material development, etc.—the conclusion was that the same problems were still prevalent. Another report, a replication of the original study 20 years after Dobbs and Eisner completed it, was aptly named *Still the Uncertain Profession: The Current State of Museum Education Departments* (Kliebe 2006). Kliebe was concerned that

> *there is still a gap between ideology and practicality and, in some institutions, the fissure between the two is widening despite field-wide rhetoric to the contrary. In some museums, education directors are experiencing a tug-of-war between priorities of the institution's interests and those of the visitor (ibid., 71-72).*

Further,

> *Though the term 'education' has been incorporated into the mission of museums, the commitment to implementing that responsibility has not been fully realized. Contrary to the literature, this study uncovered evidence that the position of education departments is being weakened within the museum. The multiple signifiers of this deterioration include insufficient resources to meet the mission, reduction in departments' staff, lack of strategic direction, and increased responsibility for revenue-generating activities that may compromise the educational mission (ibid., 72).*

Finally,

> *This study's results reinforce the concepts that 1) there is no one way to fulfill the educational mission, and 2) a basic consensus of museum education is missing from the field (ibid., 78).*

In developing this brief history, several topics emerged that the OP&A study team thought merited research and discussion beyond what it was able to do.

- ◊ There is a common belief among Smithsonian educators that they have borne a disproportionate share of reductions of staff, space, and finances, at the same time that their responsibilities have increased. Clearly, levels of staff, space, and financial resources allocated to educational activities have changed over time. It would be useful to have more detail on how education really has fared over the years when it comes to resources.
- ◊ What constitutes "educational activities" has certainly evolved over the course of the Smithsonian's history, as it has elsewhere. As described by Hooper-Greenhill (1994, 259), at the start of the 20th century, organized activities for visitors were quite limited and generally geared to school groups:

> *As the century progressed, holistic approaches to the museum as an educational institution in its own right were superceded by piecemeal arrangements for different audience groups, with a concentration on school groups.*

By mid-century, "museum education" came to mean primarily children's activities and activities for schools, becoming a sub-specialization with its own staff, values, and objectives separate from the rest of the museum. In those circumstances, education departments became set apart. This process occurred at the Smithsonian, which saw an increase in school tours, development of spaces devoted to children's activities, and marginalization of the early education departments.

However, Hooper-Greenhill goes on to say that

> *At the end of the twentieth century, a new approach to museums and galleries repositions museum education in a new way, and many new initiatives have emerged …. Often, too, education and curatorial staff have been pursuing the same goals without working together. A whole museum approach has not been evident, except in a few cases (ibid., 259).*

As noted, at the Smithsonian educational activities appear for the most part to have been relegated to a secondary role, rather than integrated in a holistic fashion. Both the reasons for, and solutions to, this situation need to be explored.

Overall, throughout its history the Smithsonian Institution—like all museums—has understood that education is one of its functions. Yet the nature and definition of the function, how it is structured, and the degree of implementation have varied widely. Nor has it ever been firmly established and consistently supported.

Appendix 4: External Environment

I. The National Crisis in Education

> *America has lost its global leadership in education. … This is a national crisis that is rapidly creating an entire class of Americans who are unable to share in the benefits of a modern, progressive, and productive society.*
>
> —Secretary of Education Arne Duncan

The United States educational system faces enormous challenges that have been accumulating over decades and defy easy answers. While the U.S. system of higher education is still widely regarded as the finest in the world—although issues of its affordability to many Americans have arisen—the quality of education at lower levels is extremely uneven. Unquestionably, the system has failed to serve large numbers of Americans well.

A Nation Still at Risk

The current problems were first brought to the public's attention by the 1983 report of President Ronald Reagan's National Commission on Excellence in Education, *A Nation at Risk*. The report's indictment of the declining quality of education for many Americans was framed partly in terms of fairness (quality education should be available to "all, regardless of race or class or economic status") and partly in terms of the practical economic consequences of educational mediocrity (education is an "indispensable investment" for national competitiveness in an increasingly information-driven and globalized world).

The quarter century since then has seen an abundance of discussion, debate, research, policy initiatives, and hand-wringing, but it would be difficult to argue that the situation has improved markedly.[55] The No Child Left Behind (NCLB) law was enacted with great fanfare in 2002 and hailed at the time as a major step forward, but it has come in for criticism on a number of fronts, including from much of the museum community (see Box

55 According to the of the U.S. Department of Education, average reading scores on the National Assessment of Educational Progress for U.S. 9-, 13-, and 17-year-old students have been essentially flat since 1970. Mathematics scores, which have shown some modest improvement for younger children over that time period, have failed to show any sustained positive trend among the crucial 17-year-old cohort that stands on the cusp of adulthood and higher education (U.S. Department of Education, National Center for Education Statistics 2009).

4-1).[56] Meanwhile, public schools in underserved communities remain mostly lamentable.[57] Comparisons of U.S. students' achievement levels and drop-out rates with those of other wealthy nations are still unflattering.[58] Standards for public schools vary hugely across states. U.S. students continue to spurn the economically crucial science, technology, engineering, and mathematics (STEM) fields, leaving the nation's competence in these areas dependent on its continuing ability to attract talent from abroad.[59] In general, the U.S. education system is not demonstrably better at preparing young people to be informed, productive members of the "global village" than it was when *A Nation at Risk* was published.[60]

In addition, a new challenge to the nation's education system has been added, which was only dimly perceived in Reagan's time. In the last several decades, the United States has experienced a surge of immigration unseen since the mass immigrations of the late 19th and early 20th centuries. The most obvious educational challenge raised by this growing class of learners is linguistic.[61] But perhaps even more vexing is the challenge of culturally assimilating these young people into a nation and society from which many of them feel some degree of alienation.

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56 The literature on the pros and cons of NCLB is voluminous. Critics on the right criticize Federal government involvement in what has traditionally been regarded as an area of state and local authority; critics on the left object to the focus on measuring student achievement through standardized testing, as well as the narrowness of the NCLB core curricula.

57 Academic performance gaps among socioeconomic groups in the United States are among the highest in developed nations, and the poor performance of those at the bottom accounts for a large part of the nation's overall mediocre performance in international comparisons (Organisation for Economic Co-operation and Development 2007).

58 According to the Organisation for Economic Co-operation and Development's (OECD) 2006 Program for International Student Assessment (PISA)—which assesses the academic achievement of 15-year-old students in the largely high-income member countries of the OECD—the United States ranked 21st out of 30 in scientific literacy, 25th out of 30 in mathematics literacy, and 24th out of 29 in problem-solving skills (Organisation for Economic Co-operation and Development 2007). In the 2007 Trends in International Mathematics and Science Study (TIMSS), which looks at student performance at the 4th and 8th grade levels in a broader range of high-, middle-, and low-income countries, the United States performed modestly above the group average at the 4th-grade level and slightly above the average at the 8th grade level (U.S. Department of Education, National Center for Education Statistics 2008).

59 For example, in 2006, foreign-born students received the majority of doctoral degrees granted at U.S. universities in physical sciences (51 percent), mathematics (57 percent), computer sciences (65 percent), and engineering (68 percent). These figures are from the National Science Foundation, which provides extensive data on students and workers in engineering, science, and technology fields at its website, http://www.nsf.gov.

60 Indeed, in a May 28, 2008 campaign appearance, candidate Barack Obama reeled off a familiar litany of U.S. educational shortcomings and offered a conclusion about the moral and practical implications of the status quo that could have been lifted from the *Nation at Risk* report:

> *This kind of America is morally unacceptable for our children. It's economically untenable for our future. And it's not who we are as a nation.*

61 According to a recent article in *The New York Times*, one in ten students now enrolled in public schools is learning English as a second language—a figure that increased 60 percent between 1995 and 2005 (Thompson 2009). According the OECD, the performance of first- and second-generation immigrant students in the United States lags behind that of their native-born counterparts by the equivalent of about two grade levels (Organisation for Economic Co-operation and Development 2007), most likely due in part to linguistic issues.

Box 4-1: Effects of the No Child Left Behind Law on Museum Education

In the late 1990s, states began to establish learning standards to guide the education process and provide criteria against which progress could be gauged. These standards initially catalyzed a boom in museum attendance by school groups.

This changed with the enactment of the No Child Left Behind (NCLB) act in 2002. Schools now had a clear mandate, enforced by sanctions, to improve performance as determined by standardized tests. They have responded by "teaching to the test," leaving less time for museum visits, field trips, and other supplementary activities. The effects have been particularly pronounced on schools in underserved communities. As one interviewee from the Anacostia Community Museum noted:

> *The field trips are going by the wayside now. I have to look to other groups, like home school groups, for field trips. The home schoolers are free to explore. … But if schools are testing or preparing to test, they will not approve a field trip.*

Dozens of books and thousands of monographs and articles have been written on the effects of NCLB, and some museum professionals have been very critical of it. For example, Joe L. Frost, speaking at the 2008 Association of Children's Museums Conference in Denver, complained:

> *No organized program is inflicting more harm on physical education, the arts, and spontaneous free play[.]*

The American Association of Museums (AAM) has taken a critical stance on NCLB. AAM Assistant Director for Research Philip M. Katz wrote a position paper that documents post-NCLB reductions in school visits to informal learning institutions, and notes that some smaller niche museums have closed as a result. (Institutions capable of supporting math or reading instruction have been less affected.) Indeed, the AAM has judged the threat to be so severe that it has requested that members sign and send an e-form letter to their representatives in Congress advocating museum-friendly modifications to the law.

STEM Education

STEM education is at the epicenter of the educational crisis in the United States today. While the shortcomings of U.S. students in fields such as history, writing, and foreign languages have also been exhaustively documented, student underachievement in math, science, and technology fields is often regarded as particularly ominous for the future security and prosperity of the nation, given the ever-increasing role that technology plays in supporting military strength and economic competitiveness.

As a national policy issue, calls for strengthened STEM education date back at least to World War II, when the perceptions of government and business leaders, as well as the public, were profoundly affected by the decisive role that new technologies played in achieving victory. When many of these new technologies were adapted to peacetime use and spun off into lucrative industries, the national security case for STEM education was augmented with an economic case. Since then, the nation's attitude toward the issue has undergone periodic swings, often catalyzed by traumatic events or the rise of perceived military or economic threats.

The first surge of interest in STEM education came in the early post-war years as Federal support for "big science" began to gear up to meet the military and industrial challenges of the incipient Cold War with the Soviet Union. The United States faced a serious problem in staffing its increased research capacity; scientists and engineers could not be created overnight, and the number of students in academic programs leading to STEM professions was inadequate. This spurred a series of reforms in the late 1940s and early 1950s, in which small rural schools were eliminated in favor of larger, consolidated districts that created economies of scale and facilitated curriculum upgrades (although much curricular decision making remained in local hands).

These reform efforts received an enormous shot of adrenalin with the launch of the basketball-sized *Sputnik 1* satellite by the Soviet Union in October, 1957. The idea that a hostile country could place an object in orbit frightened many Americans. In response, attention to and funding for STEM education exploded, and young people affected by *Sputnik* formed the backbone of the cadre that would ultimately take the United States to the Moon. The legislative reaction was embodied, in part, by the National Defense Education Act of 1958, which addressed several perceived deficiencies in U.S. education generally, and STEM education in particular.

Interest in STEM education waned after the completion of the Apollo program and the winding-down of the Vietnam war, but surged back in the early 1980s, when mounting concerns about energy and economic competitiveness again led to cries that the United

States was failing to produce enough technically-adept students and was falling behind other nations that appeared to be more successful in this area. One outcome was the creation of the National Commission on Excellence in Education, a blue ribbon panel that issued the landmark 1983 report discussed above, *A Nation at Risk*.

The next major push forward came from the work of the National Commission on Mathematics and Science Teaching for the 21st Century, assembled by President Bill Clinton's Department of Education and headed by Senator (and former astronaut) John Glenn. Its 2000 report, *Before It's Too Late: A Report to the Nation,* focused on the need to increase graduation and retention rates of STEM teachers. While well-received, the report was released at a time when more dramatic events—particularly the contested Presidential election of 2000 and the terrorist attacks of September 11, 2001—were drawing the nation's attention away from educational reform.

In the past decade, the National Governors Association, professional organizations, military groups, corporate entities, and concerned citizens have all weighed in on the importance of STEM education. Perhaps the most significant report to emerge in recent years is the 2007 National Academies report *Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future*, which focuses more on economic and workforce development than military needs.[62]

A perfect storm of conditions favorable to reform of the nation's STEM education capabilities may be at hand. The pressing science, technology, and engineering issues of the day—including concerns about economic competitiveness, military preparedness, climate change, and so on—have created a political consensus that STEM education is vital to the nation's future. Education was a top domestic priority for the Bush administration, and the Obama administration is if anything even more engaged with this issue.

Congress has begun to take important steps. In addition to the NCLB law discussed above, the Deficit Reduction Act of 2005 (P.L. 109-171) contained a provision that created the Academic Competitiveness Council (ACC), which was charged with inventorying and evaluating all Federal STEM education programs and developing legislative recommendations. The ACC reported back to Congress in May 2007, but the legislation drafted in response did not get out of committee. However, Congress did pass the America COMPETES Act of 2007 (H.R. 2272 / S. 761), which contains many provisions and funding opportunities that address STEM education issues. Considerable funding for education was also included in the recent financial stimulus legislation.

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62 All of the above-cited studies are available online.

Moreover, Federal government-led efforts are by no means the only initiatives aimed at addressing national deficiencies in STEM education. Corporate and private philanthropic organizations are also grappling with the issue, and even in the current difficult economic climate, such organizations continue to invest in STEM-related projects.

Smithsonian Role

What might be the role for the Smithsonian in addressing the crisis in U.S. education?

The ongoing policy discussion about improving the nation's education infrastructure has been focused almost exclusively on reforming formal curricular education in general, and public schools in particular. This is not an area of historical strength for the Smithsonian. With the notable exception of NSRC, the Institution has not been directly involved with policy issues surrounding public school reform. Smithsonian units do offer a variety of programs and materials tied to formal curricular education: teacher enrichment workshops, school tours, after-school programs for children, virtual field trips, websites with suggestions for incorporating exhibition- or object-based lessons into the classroom, and so on. However, these are generally undertaken by individual units in isolation, without the benefit of an overarching strategy for education at the Smithsonian as a whole.

However, while most of the action to date has been focused on formal curricular education, this does not necessarily mean the Smithsonian would have to move in this direction to influence education at the national level. The debate on educational reform has not yet given full attention to the role played by non-school environments and media—museums, science centers, television, the internet, after-school programs, educational games, artistic activities, and so on—in inspiring and encouraging young people to value learning. A January 2009 study by the National Research Council of the National Academies, *Learning Science in Informal Environments* (Bell, et al. 2009) may have been the first shot in a campaign to raise awareness of the value of informal learning. Further, Secretary of Education Arne Duncan has stated his desire to engage students in out-of-school activities that will support success in the classroom. (The role of the Smithsonian in the schools is discussed at much greater length in Appendix 6 on Audiences and Programs.)

II. Museums and Museum Education

While the Smithsonian is much more than a complex of museums, the museums remain its most recognized public face. This section provides a brief statistical overview of visitation to museums[63] by adult Americans, and of the educational expectations and experiences of such visitors. This is followed by a discussion of what "exemplary" education programming might entail, both for museums in general and for the Smithsonian in particular.

By way of introduction, it is important to recognize that national—and international—educational trends and currents, including national initiatives focused specifically on museum education, influence how museums handle their education function. In this connection, several key developments of the last 40 years bear mention.

- In 1969, the American Association of Museums (AAM) issued *American Museums: The Belmont Report*, which called for the Federal government to recognize museums both as educational institutions and as sources of unique educational services (American Association of Museums 1969, vii). The *Belmont Report* urged significant increases in Federal funding for museums. An important result of the report was AAM's development of an accreditation program for museums.[64] Since its implementation, almost all Smithsonian museums have gone through the accreditation process.

- In 1984, AAM issued another key report, *Museums for a New Century*, which posited that education was a primary purpose of American museums, as much as preservation and collection (American Association of Museums 1984, 55). Further, "museums have not realized their full potential as educational institutions (ibid., 28)."

- A partial response to this critique was the expansion of the Standing Professional Committee on Education (EdCom) at AAM and EdCom's development of Professional Standards for Museum Education. EdCom

> *advances the purpose of museums as places of lifelong learning, serves as an advocate for diverse audiences and educators, and promotes professional standards and excellence in the practice of museum education (American Association of Museums, Committee on Education 1989).*[65]

63 The data here cover 11 types of museum or museum-like organizations: zoos and aquariums; arboretums and botanical gardens; science and technology museums; children's and youth museums; natural history and anthropology museums; art museums; history museums; nature centers; historic houses or sites (such as battlefields); general museums; and specialized museums.

64 AAM Accreditation Program, http://www.aam-us.org/museumresources/accred/index.cfm.

65 Available at http://www.edcom.org/default.asp.

More recently, in 2001, EdCom issued *Excellence in Practice: Museum Education Principles and Standards* to further inform museum education.

◊ In the years between the publication of *Museums for New Century* and *Excellence and Equity: Education and the Public Dimension of Museums* in 1992, there was a major shift in the stated role of museums (American Association of Museums 1992):

> *Museums can no longer confine themselves simply to preservation, scholarship, and exhibition independent of the social context in which they exist* (ibid., 8).

The role of education and educational activities of museums is still a subject of discussion and debate. Perhaps in the first decade of the 21st century the Smithsonian Institution will take play a leading and decisive role in defining this role.

Museum Visitation: Survey Results

According to the most comprehensive survey[66] of museum visitation, conducted in 2006, more than two thirds of U.S. adults visited a museum during the 12 months prior to the survey, either in person or online. Counting both physical and web visits, the most-visited types were

◊ Zoos and aquaria (36 percent);

◊ Historic houses or sites (35 percent); and

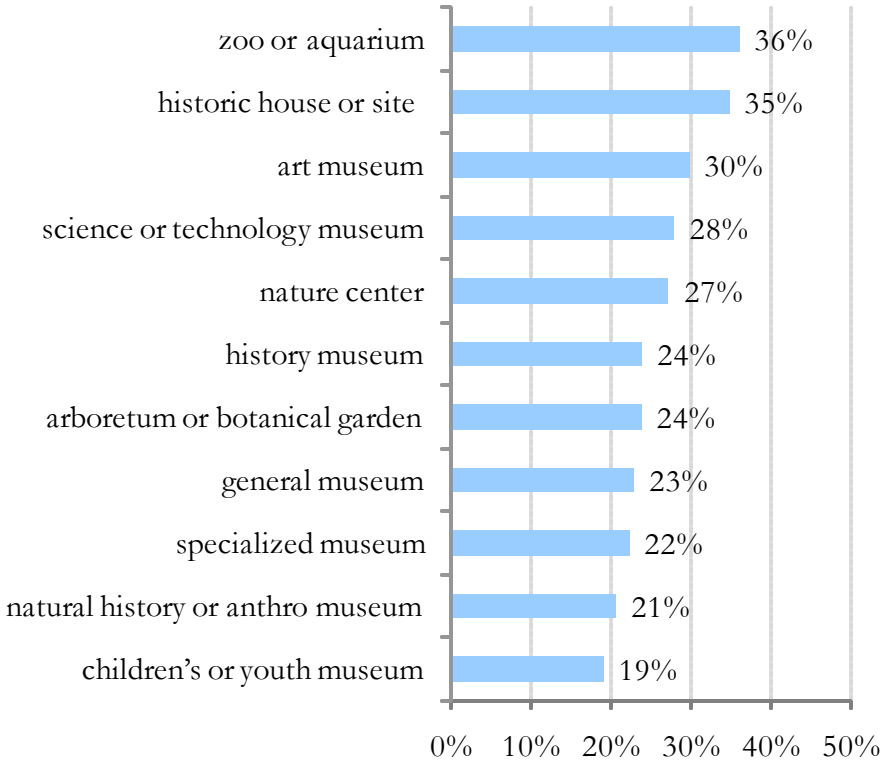
◊ Art museums (30 percent).

The least-visited type, at least among the adults who responded to the survey, was children's or youth museums, but even these were visited by nearly one fifth of respondents (19 percent). (See Figure 4-1.) Over half of the museum visitors in the survey visited three or more types of museum.

66 The figures reported here are derived from statistical analysis of data from a 2006 survey conducted by the University Center for Social and Urban Research, University of Pittsburgh, for the School of Information and Library Sciences, University of North Carolina at Chapel Hill, under a grant from the Institute of Museum and Library Services (IMLS). Results were reported in Institute of Museum and Library Services (2008b) and are accessible at http://interconnectionsreport.org/. OP&A obtained micro data from IMLS to conduct the specialized analysis reported here. The file did not contain sampling weights; to reduce sample demographic biases, OP&A post-weighted the survey cases based on Bureau of the Census estimates for the number of females and males 18 and over on July 1, 2006, and joint distributions of Hispanic ethnicity and racial identification in the total population. Conclusions reported here are the responsibility of OP&A and do not necessarily reflect the analyses or conclusions of IMLS, the University of North Carolina, or the University of Pittsburgh. Note also that museum in-person visitation may have been somewhat depressed by the season when the survey was conducted. For example, smaller percentages of respondents indicated that their last visit was to an outdoor museum than in the total reported types visited during the past year.

Figure 4-1. Type of Museum Last Visited (Virtual or Physical Visit)

Source: IMLS Data



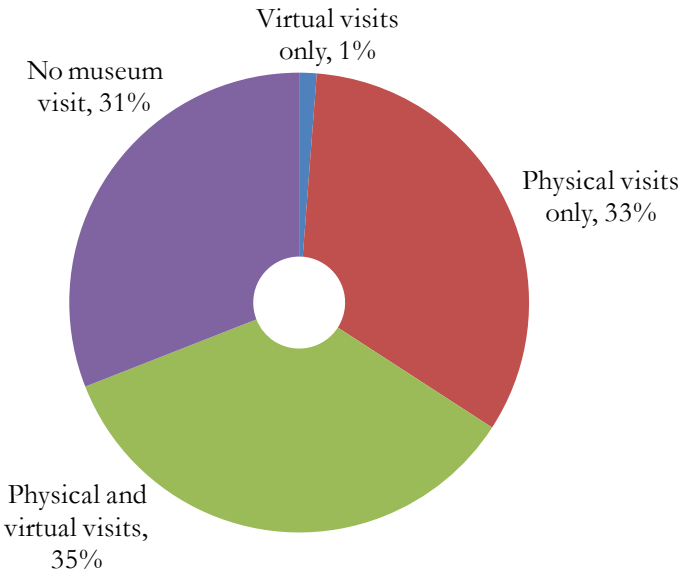
More than two thirds of all respondents (68 percent) reported making one or more physical museum visits during the previous 12 months, and nearly half (47 percent) reported making at least three physical visits. Thus, a majority of physical museum visitors made multiple visits. More than one third of respondents (36 percent) reported making at least one virtual museum visit, with 25 percent making three or more visits.

Physical and Virtual Visitation

The survey suggests that virtual museum visitation complements or augments physical museum visitation, rather than replacing it. As Figure 4-2 shows, roughly the same proportions (about one third) of respondents made (1) both physical and virtual museum visits, (2) physical visits only, and (3) no visits at all. By contrast, only 1 percent made virtual visits without also making physical visits. For the most part, the population of virtual museum visitors is comprised of people who are also physical museum visitors.

Figure 4-2. Museum Visitation Over the Previous 12 Months

Source: IMLS Data



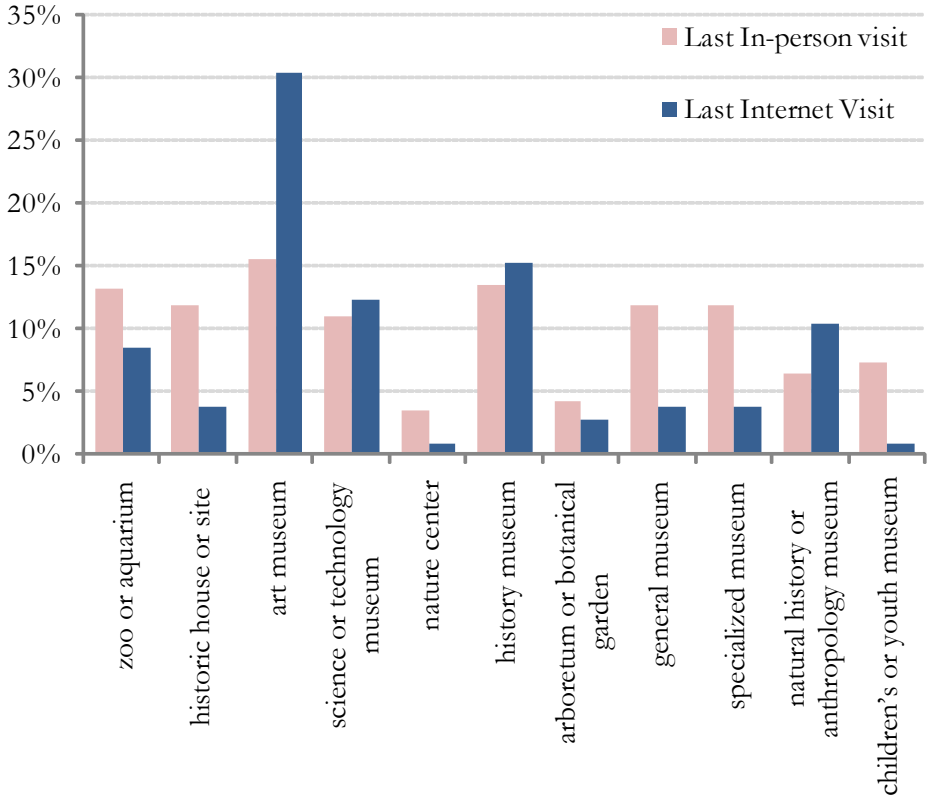
The survey does not provide information on whether virtual and physical visits are linked—for example, if physical visitors tend to make virtual visits before physical visits to plan their trip or afterward to follow up, or if virtual visits inspire physical visits. However, another source suggests that virtual and physical museum visits do in fact tend to overlap significantly, in that virtual visits are often used to plan later physical visits.[67]

A large majority of the museum visitors who responded to the survey reported that their last visit was a physical visit (86 percent) rather than a virtual visit (14 percent). Art museums were the most popular recent virtual destination, accounting for nearly one third (30 percent) of the last virtual visits—well above the figures for history museums (15 percent), science or technology museums (12 percent), or natural history and anthopology museums (10 percent). The distribution of most-recent physical visits was more evenly spread across art museums, history museums, zoos/aquariums, historic houses/sites, general museums, and specialized museums. (See Figure 4-3.)

67 2000 General Social Survey conducted by the National Opinion Research Center (NORC) at the University of Chicago.

Figure 4-3. Type of Last Visit (Physical vs. Virtual) by Museum Type

Source: IMLS Data



Educational Expectations and Outcomes

Although education is a significant outcome of museum visitation, most visitors do not come for the purpose of education per se. Rather, about seven out of eight physical museum visitors (84 percent) reported that the most important reason for their most recent visit was recreation or entertainment, while only 13 percent mentioned education as their primary motivation.[68] (See Figure 4-4.) The distribution of responses was nearly identical for virtual visitors, with 79 percent mentioning recreation or entertainment and 14 percent citing education. (Another 7 percent cited a work-related reason.)

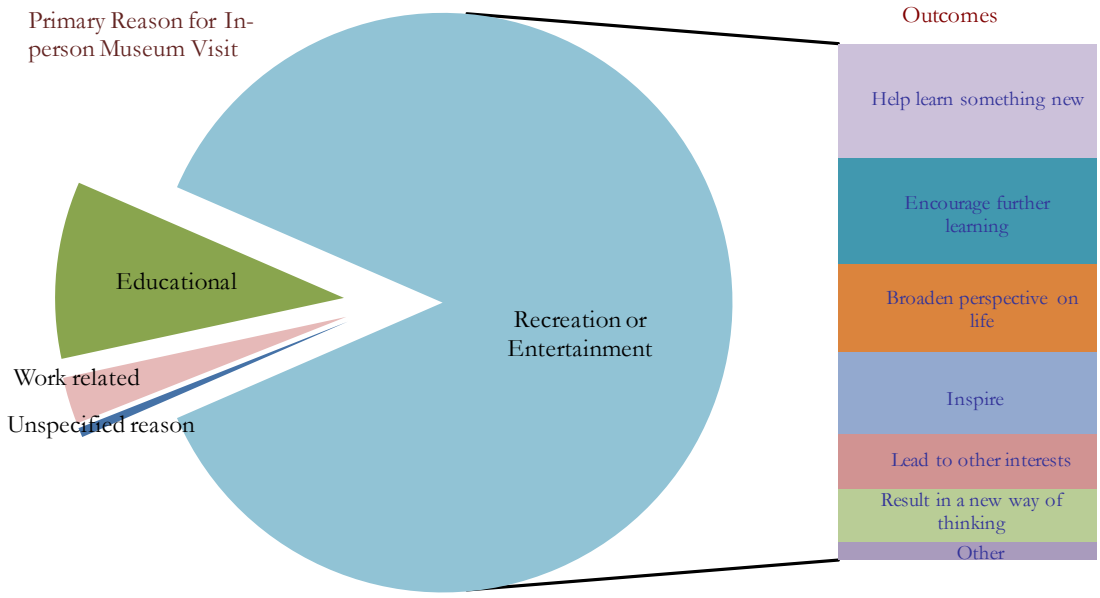
However, museums intertwine education with everything done within their walls, and visitors who come primarily for recreation or entertainment also report educational outcomes. Among recreational visitors, 83 percent reported that their visit had "[helped them] learn something new"; 77 percent said it had "[encouraged] further learning"; and 38 percent reported it had opened up a "new way of thinking." Other broadly educational outcomes

68 Another 2 percent cited a work-related reason, and less than 1 percent offered another reason.

reported by these visitors were "broadening perspectives on life" (64 percent) and "inspiring [the visitor]" (59 percent).

Figure 4-4. Reason for Last Physical Museum Visit With Outcomes for Recreational Visitors

Source: IMLS Data



Additionally, 61 percent of all in-person museum visitors, regardless of museum type visited, said they had "learned about a specific topic," while 14 percent said they had "bought books for later study." A similar proportion (13 percent) reported "attending a lecture or class."

Generational Issues

Multigenerational visit groups are a significant share of in-person adult visitation (although the proportions vary across types of museums), and children appear to drive much museum visitation. Over half (57 percent) of adult physical museum visitors reported that they made their last visit with family (although friends may have also been included). This group splits nearly equally between respondents who had children[69] living in their home and were visiting with children (25 percent), and visitors who did *not* have children in their home and were *not* visiting with children (22 percent).

69 Under 18 years old.

About one in twelve physical adult museum visitors (8 percent) reported being accompanied by children even though they did *not* have children living in their home. Further analysis of these visitors by age suggests that most were grandparents visiting with grandchildren, although others were most likely non-custodial parents or non-parent adult companions.

There is a strong relationship between the age cohort of respondents (by generation), and the type of household and visit group:

- A large majority of visitors accompanied by children and with children in their household were Generation X (aged 30 to 40, 47 percent) and Late Boomer individuals (aged 41 to 51, 36 percent).
- A plurality of visitors unaccompanied by children and without children in their households were Pre-Boomers (aged 61 and over, 38 percent), with nearly equal frequencies across the three previous generations (21 percent Early Boomers, 17 percent Late Boomers, and 16 percent Gen X), with only 8 percent Gen Y.
- Nearly half of visitors accompanied by children but without children in their household were elderly Pre-Boomers (49 percent) and a quarter were Early Boomers (aged 52 to 60, 24 percent). Over the next few years, museums are likely to see more of these grandparents with children in tow, as the Baby Boomers retire, and coping with economic trends that disadvantage younger parents in Generations Y and X eats into the time available for them to engage in such activities with their children.

Comparing Museum Visitors and Others

On the whole, the minority of individuals who did not report visiting museums on the survey represent lower socio-economic strata than did museum visitors. For example, they had lower levels of education: almost half (44 percent) reported having a high school education or less, compared with about one sixth of museum visitors (17 percent). They also had lower family incomes, with about two thirds (65 percent) reporting household incomes under $50,000, compared with just 40 percent of museum visitors.

Non-visitors were also more likely to be unemployed or on disability than museum visitors. Other areas where non-visitors differed significantly from visitors included the following:

- *Age.* Almost two in five non-visitors (39 percent) were over 60, compared to one quarter of museum visitors (25 percent); not surprisingly, non-visitors were also more likely to be retired.

- *Marital status.* Fewer than half of non-visitors (46 percent) were married or living in a marital-like relationship, compared to well over half of museum visitors (59 percent); non-visitors were more likely to be divorced or widowed.
- *Race.* About one fifth of non-visitors (21 percent) indicated that they were black, compared with less than one tenth (9 percent) of visitors.
- *Hispanic identification.* Non-visitors were much less likely to identify themselves as Hispanic (9 percent) than visitors (20 percent).[70]

Many of the demographic characteristics of individuals who do not visit museums are undoubtedly correlated, and some reflect enduring economic and cultural barriers that separate them from the museum-visitor group.

Museum Education: Best Practices and Exemplary Programs

What constitutes quality in museum educational programming? The answer depends, of course, on the specific nature of a museum's philosophy, collections, and subject matter. However, there are certain recognized criteria for best practices and exemplary programs based on factors common to all museums. (In this report, "best practices" refer to established requirements expected of a competent organization; they might be thought of as professional due-diligence criteria. "Exemplary programs" refer to those that are regarded as outstanding or noteworthy among a peer group.)

EdCom Standards

Most museums do not develop their own unique standards for best practices and exemplary programs in education. Rather, they use the education requirements of their accrediting organization, standards established for museums by AAM, or the more detailed standards established by EdCom. The latter has developed a thorough (if somewhat general) set of principles and best practices, as well as a set of professional standards for museum educators. The EdCom general principles are as follows:

- A museum's mission should articulate a commitment to present its educational resources with accuracy, clarity, and relevance to a wide variety of audiences.
- Interpretive programs should seek multiple perspectives.

70 This finding is interesting, in that it runs counter to the conventional wisdom that Latinos are an underserved audience with respect to museums.

- Information gathering and assessment should be employed to provide evidence of visitor learning and impact.
- Appropriate technologies should be used to expand access.
- The museum working environment should be respectful of different voices.

EdCom has also established a set of best practices for museum education and museum educators (see http://www.edcom.org/professional_standards.asp).

Excellence in Programming Awardees

The AAM and EdCom standards provide guidelines for best practices in museum education, but they do not precisely define what constitutes exemplary programming. However, insight into what EdCom considers exemplary in museum education programming can be gained by looking at the characteristics of programs it recognized with its annual Excellence in Programming (EiP) Award.

The past ten EiP awardees (dating from 1995 to 2007; no awardees are identified on the EdCom website for 1999, 2000, or 2001) are listed in Table 4-1. Some general observations about EiP winners include the following:

- *Interactivity.* In almost all cases, winning programs offer an unusually high degree of interactivity and personal delivery. Several involve role-playing with staff in period costume, or other immersive tactics. Others involve museum content experts, educational experts, and others in a personal mentoring role.
- *Community connections.* Many of the winning programs have close ties to local communities or local education, civic, and governmental organizations. In some cases, the program is as much concerned with community service as with education.
- *Underserved audiences.* Several programs—such as those of the Brooklyn Botanical Garden, Brooklyn Children's Museum, Wagner Free Institute, and Bruce Museum of Art and Science—explicitly serve at-risk children. Others are connected in different ways to the experiences of groups traditionally underserved by museums, such as the New Mexico Museum of Natural History and Science's (NMMNHS) *Proyecto Futuro* bilingual partnership and the Connor Prairie *Follow the North Star* program, which immerses audiences in the world of an escaped African-American slave.
- *Experimentation.* Several winning programs are significant departures from conventional museum education programming—for example, in their incorporation

of actors and other immersive elements. This suggests a managerial willingness to assume or even embrace experimentation and risk.

- *Outreach.* Only one of the awardees—the Connor Prairie *Follow the North Star* program—has a significant online presence or distance-learning component.
- *Economic viability and long-term sustainability.* Four of the ten programs were discontinued upon, or shortly after, the end of their original funding. While some of the surviving programs charge fees, none appears to be financially self-sufficient; all require some degree of external private or government support. (See Box 4-2.)
- *Capacity.* Some of the winning programs have very small capacities—for example, serving only one classroom-sized audience at a time (the *Footsteps into Medora's Past* program in the historic town of Medora, North Dakota, serves no more than 20 people per tour, with 10 tours per week in season) or focusing exclusively on residents of a small geographic area (for example, the *GeoKids* program of the Wagner Free Institute of Science explicitly serves only local Title 1 school children).

Exemplary Program Characteristics

The OP&A study team used implicit EdCom EiP criteria, research into other museum programs, and interviews conducted for this study to identify a set of criteria that define exemplary educational programs in a museum environment similar to the Smithsonian's. Exemplary Smithsonian programs would need to display not just one or more of the exemplary criteria associated with EiP awardees (discussed below as "capabilities," "community," and "awareness of the operational environment"), but also other definitive criteria that do not appear to have been considered in the selection of EiP awardees, such as a broad scope of audiences and long-term sustainability.

Exemplary Characteristic #1: ***Capabilities***

A museum must have the collections, research capabilities, and subject matter expertise necessary to support the types of educational programming it produces. The full range of museum resources should be used to illustrate and supplement the learning process for the target audience, including inter- or multidisciplinary connections that engage interest and enrich the learning process.

Exemplary Characteristic #2: ***Community***

Exemplary museum programming includes a substantial connection to the local community—to the point where, in some cases, programming or the museum itself is partly

supported by local government community development funds (or other funding sources that aim to provide local jobs or community services).[71]

Exemplary Characteristic #3: ***Awareness of Operational Environment***

Museum programming must reflect a keen awareness of the environment in which the museum operates.[72] For example, museums are greatly affected by political decisions at every level, from the local (for example, the imposition of a $50 per week tax on tour buses by the District of Columbia) through the national (for example, legislation passed to support STEM education), as well as by changes in demographics, technologies, audience expectations, the economic environment, and so on. Some the most important environmental factors affecting museum education today are the result of NCLB and the ensuing emphasis on accountability and measurable results. NCLB focused attention on preparing for assessment tests, and thus has tended to devalue the less tangible educational benefits of field trips. This has generally disadvantaged museums, although some museum educational programming has prospered under those conditions. Programs for school-aged children specifically tailored to the standards and subjects that are the focus of NCLB testing have tended to do best in this new environment.

Exemplary Characteristic #4: ***Scale***

A number of Smithsonian educators interviewed for this study decried what they saw as an increasing management emphasis on numbers served, arguing that they would prefer smaller programs that have a greater impact. And as noted above, many of the EiP award winners are notable for their relatively small size and opportunities for personal interaction. However, while the study team agrees that audience head counts may not be the best measure of program success and that a trade-off between impact and scale often exists, the sheer size of the potential audiences for Smithsonian educational materials and programming—local, national, and global—generally argues against focusing significant resources on programs that serve only a few visitors. Rather, a diversified portfolio that offers a mix of programming appears warranted, with explicit justification provided for small programs that consume substantial resources.

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71 Smithsonian units, to varying degrees, do offer programs that connect them to local communities—with ACM being the most integrated into its local community. However, many Smithsonian units also target more conceptual "communities" in their role as national museums: national, global, and virtual communities of interest that form around particular issues or subjects (such as philatelists at NPM and aviation buffs at NASM).

72 The Smithsonian operates at both local and national scales, which—combined with the Smithsonian's unique Federal status and relationship with Congress—creates an unusual and challenging environment for its education programs.

Exemplary Characteristic #5: ***Sustainability***

Long-term economic viability was not a criterion for EiP selectees, and indeed several awardee programs are no longer offered—they ran as long as there was a grant or other monetary support available, and shut down soon thereafter. The study team feels that the Smithsonian is better served by focusing on programs that have longer-term financial stability. Since the Smithsonian does not charge admission and most units do not charge for program access, economically sustainable programs in this context are those that might be reasonably expected to attract sustained support over the long term from funders in the government, corporate, or philanthropic sectors. Exemplary programs, in other words, should be able to survive changes in the funding environment, such as the failure of initial term funding to be renewed. This generally needs to be explicitly considered in the development process.

Table 4-1
AAM Education Committee Excellence in Programming Awardees

Organization	*Program*	*Year Awarded*	*Still Alive?*	*Comments*
Brooklyn Botanical Garden	*Project Green Reach*	1995	Yes	Open to local Title I school children only; presumably funded via a New York City $4.5 million annual appropriation
Brooklyn Children's Museum	*Museum Team*	1996	Yes	Serves over 800 neighborhood youth, grades 2-12. Students begin in "Kids Crew" with educational programs and clubs, then move on to volunteer and paid internship positions focused on community service and career exploration. Substantial ongoing support from foundations and New York City Department of Youth Services.
Bruce Museum of Arts and Sciences	*Neighborhood Collaborative*	1997	No	Local at-risk audience only.
Conner Prairie Museum	*Follow the North Star*	2003	Yes	Offered nine days in fall, 2008; also offered via videoconference distance learning

Lower East Side Tenement Museum	*Confino Family Living History Program*	2004	Yes	One-hour tour with historical interpreter/ actor. Offered seven days per week by appointment; maximum of 45 visitors per tour.
New Jersey Historical Society	*Partners in Learning: Teen Parents and Their Children at Museums*	2002	No	No mention of cited program on NJHS website
New Mexico Museum of Natural History and Science	*Proyecto Futuro Bilingual Partnership*	2005	No	Bilingual teacher professional development and both classroom and in-museum programming for students.
Philadelphia Museum of Art	*Family Rainbow*	1998	No	No mention of cited program on PMA website
State Historical Society of North Dakota; S. Billings County Historical Society; Dickinson State University	*Footsteps into Medora's Past*	2007	Yes	Free walking tour of historical town site with guide in period costume. Ten tours per week (in season), 20 people per tour. In association with Supported by North Dakota Humanities Council, North Dakota Council on the Arts, and Medora Heritage Commission.
Wagner Free Institute of Science	*GeoKids*	2006	Yes	St. Josephs University and local schools partners. Open to local Title I school children only.

Box 4-2: Financial Support for EiP Awardee Programs

Economic sustainability does not seem to have been a criterion guiding EdCom's selection of exemplary programs for its EiP Awards. Most have been dependent to some extent on external funding—either program-specific, or derived from general funding for the parent organization. The following are some examples of how these programs have been funded:

- ◊ The Brooklyn Children's Museum's Museum Team serves 750 local students annually on a $370,000 annual budget, derived from a combination of foundation and New York City Department of Youth Services funding.
- ◊ Connor Prairie offered its immersive *Follow the North Star* program nine times in the fall 2008 school term, serving a maximum of 540 students at $7 per head. A videoconference distance learning version is offered for $95 per program in-state, and $130 outside of Indiana. Income from fees does not defray all program costs; Conner Prairie and its programs are heavily supported by the Eli Lilly Foundation.
- ◊ The Lower East Side Tenement Museum's Confino Family Living History Program charges a fee of $6-$10 per person. Presumably support for it also comes out of a "$20 million grant from the Carnegie Corporation, which was made possible through a donation by New York Mayor Michael Bloomberg."
- ◊ The *Footsteps into Medora's Past* program —a walking tour of a National Park Service-related historical site guided by historical interpreters—does not charge a fee, and is supported by funding from the state government of North Dakota and the local tourism foundation.
- ◊ *Proyecto Futuro* at the New Mexico Museum of Natural History and Science was created under term funding from the National Science Foundation (NSF) and General Mills Foundation, and extended under a grant from the Institute of Museum and Library Services (IMLS). It was discontinued after IMLS funding ran out.
- ◊ The GeoKids program at the Wagner Free Institute was established in 1992 under an NSF grant, and has received significant NSF support ever since, with present funding running through 2010.

Examples of Exemplary Programs

Examples of museum education programs that illustrate specific exemplary characteristics can be drawn from the EdCom EiP awardees and other outstanding programs examined for this study. The study team selected the following programs as illustrative:

Proyecto Futuro. A 2005 EiP Awardee, *Proyecto Futuro* was a community-based family and teacher outreach program conducted by NMMNHS in collaboration with the Albuquerque public school system. It was created under term funding by the National Science Foundation (NSF) and the General Mills Foundation, and continued for a time under a grant from the Institute for Museum and Library Services (IMLS). The program is no longer offered, although some of the materials created for it are still in use.

The programming consisted of three types of offerings:

- ◊ Teacher professional development workshops, which focused on hands-on instructional techniques and the educational tools and opportunities available at NMMNHS;
- ◊ Dissemination of bilingual educational materials (with thematic ties to New Mexico) to K-8 teachers; and
- ◊ A series of Family Science Nights at NMMNHS for parents, children, and teachers.

Proyecto Futuro and the NMMNHS met almost all of the "exemplary" criteria discussed previously. NMMNHS had the necessary subject matter expertise, the entire community was involved in the program, and the program met a number of local/regional needs. Only the sustainability criterion was conspicuously unmet, as attested by the program's subsequent demise (although NMMNHS was able to secure additional funding to keep the program going for a time after the expiration of the initial grant under which it was created). NMMNHS officials consider the program to have been a big success, an opinion supported by the EiP award, the program's ability to generate financial support to sustain it beyond its initial scope, and the continued demand for educational materials and activities created for it. NMMNHS continues to benefit from the contacts made throughout the local school system during its run. The URL of the *Proyecto Futuro* legacy website is: http://www.nmnaturalhistory.org/edu_proyecto.html

NMMNHS has earned a reputation for developing quality programs and exhibits. In addition to *Proyecto Futuro*, it has won several awards, including a Gold MUSE Award (in the Multimedia Installations category) for its artifact theater *Rise of the Machines* and a Silver

MUSE Award (in the Interactive Kiosk category) for its *Pizza Run—A Slice of Programming* kiosk.

GeoKids. The *GeoKids* program at the Wagner Free Institute, another EiP winner, provides students and teachers from four local, underserved Philadelphia schools with participatory, inquiry-based, supplemental educational programming. *GeoKids* is noteworthy for its community service approach, its successful collaboration with St. Joseph's University, and its longevity.

GeoKids meets all the characteristics listed above, and it is still in operation 17 years after its creation. The program began in 1992 under a NSF grant, and has received significant NSF support ever since, with its present funding running through 2010. The program was expanded in 2002 via a partnership with nearby St. Joseph's University (the *GeoKids* LINKS program) and additional NSF support. St. Joseph's faculty and students participate in a number of *GeoKids* activities and materials development, and provide expertise to support the overall learning experience. The URL of the *GeoKids* website is: http://www.wagnerfreeinstitute.org/edu_child_geokids.shtml

Education and community service are both integral aspects of the mission of the Wagner Free Institute of Science, which was founded in 1855 by William Wagner, a gentleman scientist who offered free education courses to all who wanted to learn about the natural world.

Girls at the Center. Girls at the Center (*GAC*) is a national program to encourage family involvement in girls' science education. *GAC* was developed by the Franklin Institute in collaboration with the Girl Scouts of America, with NSF funding; many corporations and foundations also provide funding and other support. The *GAC* program works with museums and science centers—31 sites to date and growing—to provide a variety of family-oriented, hands-on educational events, including several Discovery Days (themed events showcasing the process of scientific inquiry) and a larger annual Family ScienceFest event. The URL of the *GAC* website is: http://www.fi.edu/tfi/programs/gac.html.

GAC is an example of a productive museum education collaboration that meets all of the "exemplary" criteria above. The Franklin Institute is well-equipped and staffed to host and develop the program, and partnering with the Girl Scouts involves many diverse elements of the community. The Girl Scouts of America has a solid reputation for promoting educational opportunities for girls, and many of its partners are community-based organizations whose connections and knowledge can inform the creation, operation, and maintenance of education programs of this type. The partnership with the Girl Scouts also helps the program to reach wide audiences and provides an adequate resource base to sustain it over time. Both

the Girl Scouts and the Franklin Institute are seeking to expand the *GAC* program to other venues.

GAC Discovery Days and home study materials include information on careers, with stories of successful women in jobs relating to each theme. They also provide book references and web addresses to facilitate follow-up learning. Present Discovery Day / home study themes include:

- ◊ Celebrate Science (an overview of the scientific approach to inquiry and problem solving);
- ◊ Communications (ranging from how animals communicate to the use of codes to secure messages);
- ◊ Energy (electrical and other forms);
- ◊ Science and Nature (primarily biodiversity and other environmental study issues);
- ◊ Sports (primarily exercise and health, but also sports-based examples of basic physics concepts and math calculations);
- ◊ Structures (concepts related to basic civil engineering, using familiar building structures as examples);
- ◊ Water (focusing primarily on the physical properties of water and the hydrologic cycle).

Confino Family Living History Program. The *Confino Family Living History Program* at New York's Lower East Side Tenement Museum won an EdCom EiP Award in 2004 for its engaging, highly-interactive use of a "live" historical interpreter in period costume acting in the role of an immigrant girl growing up in the tenements a hundred years ago.

The program is within the area of expertise of the Lower East Side Tenement Museum, connects to the local community, and appears to be sustainable. The program is still in full operation; for more information see the program website at: http://tenement.org/tours.php.

Nexus. Organizations often adopt a "train the trainer" approach when faced with a large-scale training requirement. Providing support to formal education efforts is no different; many museums, universities, and other educational organizations offer professional development workshops, seminars, and similar programs to in-service teachers (as do many Smithsonian units). Another leveraging tactic is to reach not the trainers themselves, but rather the administrators who deal with training issues. In the formal education context, that means district-level executives.

Many districts have a STEM coordinator or other personnel dedicated to dealing with STEM issues. The *Nexus* program aims to reach these decision makers. It was established at the Science Museum of Minnesota in 2006 with an initial grant from the Medtronic Foundation, and has grown in size and scope ever since. The specific goals of the *Nexus* program are to sensitize school district administrators and other decision makers to the importance of

- ◊ Understanding the STEM disciplines, with an emphasis on engineering;
- ◊ Building new ideas and approaches to increasing access and equity for all students and closing the achievement gap; and
- ◊ Examining the intersections between different theories of learning.

There are plans to expand and strengthen *Nexus* into a Minnesota statewide network of STEM education leaders.

Even though *Nexus* is not a traditional museum-based educational program, it still meets the criteria listed above for "exemplary" programming. The University of Minnesota is fully qualified with respect to the program content, and *Nexus* serves its host community by supporting local education efforts in subjects of great importance. The URL of the *Nexus* website is: http://www.smm.org/schools/profdev/schools/#nexus.

Appendix 5: What Is Smithsonian Education?

In talking with staff across the Institution, it quickly became clear to the OP&A study team that there are many different understandings of what the word "education" means at the Smithsonian.

Some interviewees continued to think in terms of the traditional, narrow concept of education as programs that serve schools, teachers, and children. Others made little or no distinction between such programs and other public programs for adult or general audiences, wrapping them all up in a broader conception of education. Some regarded exhibitions as inherently educational; others saw the educational components of exhibitions as distinct from the curatorial and design components. Some interviewees thought of education at their units mainly in terms of professional training for specialists. Some refused to put any boundaries around the concept at all:

> *[Education] involves everything we do from the architecture to the exhibitions to the wayfinding. Education is the core of our mission.*

And some refused to even venture an opinion:

> *I can't answer your question about what education means to us, because in practice it has been very amorphous. Its mission has never been precisely or adequately defined.*

The following appendix uses interviewees' own words to illustrate the wide range of viewpoints on this central issue.

Mission

How is education understood to connect with the Smithsonian's overall mission? One viewpoint among interviewees was that the word "education" is simply shorthand for the Smithsonian's mission of increasing and diffusing knowledge, with the two parts inseparable:

> *Education is the "increase and diffusion of knowledge." … I feel that the Institution is one of the few remaining places in Washington, D.C. that harkens back to the Age of Enlightenment. [There is just] us and National Geographic. So we are an Old World place of Enlightenment.*

More typically, however, education was associated specifically with the "diffusion" part of the mission—usually with the implication that "increase" refers to research activities:

We're not very good at taking the "increase" side of the mission and diffusing it. That's true across SI, including at this museum. We're all trying hard, but [only] a small part of the research we do ever gets out.

Whether expressed in the language of the Institution's mission or not, many interviewees saw education as the fundamental purpose of the Smithsonian:

If we're not about education, then what are we doing?

Roles

Historically, the term "education" has been associated in the museum world with programs for children and schools. However, many Smithsonian educators chafe at that image as, in the words of one interviewee, the "yellow bus people." But moving beyond this image is sometimes a struggle:

Administrators put education in a box. For them, education means schools and students. They define it very narrowly—it's what SI can do for students and teachers. They don't see it as a part of exhibition development, program development, adult programming. [It is all] tied up with schools and a very narrow age group.

There's still this mindset at SI that education is school kids. But that leaves you open to the point that we're not a school, so why spend money teaching kids? Well, maybe we ***shouldn't*** *teach kids. But that doesn't mean we don't need educators, because there are a lot of other people who come here. The way we collaborate with our curatorial and design colleagues to create experiences in the museums is critical to the way the public perceives SI. You can't do that without education.*

If not as experts in programs for schools and children, how do Smithsonian educators see their role today? Many interviewees suggested that educators are in-house learning specialists, whose task is to mediate between audiences and subject-area experts and to make complex subjects and ideas accessible to a wide variety of audiences:

Educators are concerned with interpreting and conveying content. … Educators are primarily focused on how people learn and receive the information.

What's happening here—although it's still in process—is that [educators] are becoming seen as the people who know about how people learn.

For me, [education] is about access. … As an educator on the exhibition team, it would be my responsibility to make sure that information is not [presented] at a level over the heads of the majority of our audience, and that we understand who our audience is and whether they have [language, physical, mental, or intellectual] accessibility issues. It is our job to figure out how we reach all these different people. What do we need to do to make exhibits more accessible? What do we need to provide—audio tours, touchable objects, [text] in other languages, [a] website?

[Educators'] role vis-à-vis research is a bridge to non-specialists. We are the people who make the research relevant and accessible to a wider audience.

[Curators] are concerned with creating content, and educators are concerned with interpreting and conveying content. … Educators are primarily focused on how people learn and receive the information.

I start with what I want the visitor to [learn]. … I mix that up with how the visitors already behave, since [educators] are visitor advocates … I try to find the intersection among those two and say, "What can we do together to have a learning experience?" … [I] find what concepts will work and what skills they can use.

However, it is unclear how many Smithsonian educators are willing and able to embrace the role of learning specialist. As discussed in Appendix 14 on Human Resources, some Smithsonian educators lack the requisite formal training or experience for this role. Others, according to one curator, simply lack the inclination, and remain comfortable in the traditional schools-and-children role:

We want educators who can help us look at the educational value or accessibility of an exhibit, like an evaluator. Let's talk about front-end evaluation … [both] conceptual and actually testing labels and objects. None of [the educators at this unit] has ever done that. Some of them are trained in it, but whenever we want to do it, we still have to go out and find a person who can do it. Isn't that odd? That's what education people should be doing. What they **are** *doing is dreaming up educational websites, curriculum packages, and things that teachers can take.*

Intimately tied up with the question of educators' roles is the question of who is an educator at the Smithsonian. As discussed in Appendix 14 on Human Resources, this question cannot be easily answered in terms of job titles, descriptions, or responsibilities, and interviewees had very different philosophies on how to define an educator. Some looked

at the matter narrowly—only staff with certain types of backgrounds or experience, whose main responsibility was for some narrowly-defined class of programs, qualified as "educators." Others saw it in much broader terms:

> *["Educators" include] the guards standing there in the galleries, actually knowing what is going on and answering questions. Education isn't just confined to those with a particular title. … It shouldn't be that educators are here and curators and the Congress of Scholars are over there. What can they do together, to map out education at the Smithsonian?*

Some curators and scientists saw themselves as educators because they interacted extensively with audiences, and did not perceive a need for specialized education training or skills:

> *Educators are not the only educators! Every time a curator gives a lecture or a scientist goes to a classroom, they are contributing to education.*

Museum Education

Regardless of the extent to which "education" is taken to imply "children and schools," the informal education that takes place in museums, zoos, science centers, and similar venues clearly differs in important ways from the formal education that takes place in a traditional classroom setting.

Most obviously, museums and similar organizations do not usually have enough exposure time with students to convey much "testable" information. Nor, for that matter, do museums typically adhere to a curriculum in their educational activities—although their offerings may be aligned with curricular standards. What then is the educational role of museums and similar organizations? One interviewee had this suggestion:

> *What we provide [are the] the necessary enrichment and educational activities that allow [visitors] to learn better, but not necessarily to learn a particular curriculum to pass a test.*

Another suggested that open-ended learning goals are the hallmark of many museum education activities:

> *There's a difference between an education program that has specific outcomes in mind, and [programs] that just try to get people into the museum and have fun. The goal [of the latter type of program] is to engage visitors with the museum or the topic, or get them to come back for repeat visits. That's different from a specific*

education outcome, where you want them to come away knowing this particular concept about your collections or your exhibition.

Rather than striving to convey specific facts or concepts, interviewees suggested that museum educators should think in terms of concepts such as understanding, inspiration, curiosity, and connection. The following are some of the specific formulations offered by interviewees.

◊ Fostering personal connections that leave a lasting impression:

> *Museum education is about connecting. Education can be about knowing or learning something, but in museums the way you get to that point is by … building some sort of connection that builds [a] memory [that in turn] becomes education. … A lot of people could go back in their memory and pull something from a visit to a museum. It may not have been the most fabulous object [or] the "big blitz" exhibition, but it was something that for whatever reason spoke to that person, so they took something away. That may not be book learning, but we've expanded their consciousness about something in their life.*

◊ Engaging visitors with objects and ideas:

> *The idea is to bring our collections alive for visitors in meaningful ways. We don't focus on the academics, …but we bring research to life for visitors and interpret it in interactive and fun ways, so people can have their "aha!" moments. For an educator, there's no greater gift than seeing the light come on in someone's eyes.*

◊ Building or reinforcing an interest in the subject matter:

> *[The purpose of education] for visitors who come here with an interest in our subject matter [is] to deepen their understanding. For more general audiences … [the purpose] is to capture their interest and maybe spark something they will take away with them.*
>
> *You plant seeds, and then you allow them to grow when they can. That's why we have to have this stuff accessible at every level, and [we do] not demean any level for where it is or what it is.*

◊ Stirring emotions that inspire curiosity:

> *We're interested in not just the intellectual impact of our material, but also the emotional impact. We want to provide opportunities that encourage*

people to be curious. It's not a question of learning facts A, B, C, and D and then testing well on that material. It's finding out about A and D and F and O—and if you are interested in F, you can go off and find more.

◊ Clarifying and extending existing knowledge:

[Education is successful] when the visitor is saying... "Aha! Oh really? I didn't know that!" [We try to get] the visitor to reinterpret something they thought all along, [or maybe learn] something new to add to it.

◊ Helping visitors to understand the way of seeing the world that the museum embodies:

We have a story to tell, and as an institution are deeply invested in our story. … We are engaged in a system of meaning-making and are trying to … draw people into that story. … We are probably most successful when we can help people make connections between our meaning system and their own entrance narrative.

◊ Aiding self-development and self-discovery:

[Education] is discovery. It's as much a self-discovery as anything. The stories, the assets, the props, [and] the data are tools and signposts along the way of a journey of self-discovery. … Most human endeavors have been driven by a desire to figure out our place and our meaning in the world. … I guess it's a sort of mapping: who am I, and where do I fit?

Perhaps the educational purpose of museums and similar informal learning venues was best summed up by the interviewee who used these pithy words:

To spark [the] joy of lifelong learning. That, to me, is education.

It should be noted that the learning goals and experiences discussed by interviewees here apply to everyone, not just to children. They generally add up to an approach to education that is much less structured and more open-ended than formal classroom education—"free-choice learning," as one interviewee put it. Fundamentally, this approach seeks to stimulate curiosity and inspire understanding and appreciation, not to instill specific information. However, two caveats should be added.

First, there is growing pressure on museum educators, in part as a result of the No Child Left Behind law, to make offerings conform to specific curricular standards, rather than simply inspire curiosity and awe, as discussed in Appendix 4 on the External Environment.

Second, some interviewees believed on principle that education at the Smithsonian *should* include a prominent formal curricular component, even if this is not typically seen as a part of museums' educational role. Their view was that, as a national organization with a mission that goes far beyond that of most museums, the Smithsonian also has educational responsibilities that go beyond those of other museums:

> *If the Smithsonian [doesn't] play a major role in [curricular] education reform, who will? Which other institutions have the prestige to address the state of K-16 STEM education in this country?*

On the other hand, as discussed in Appendix 6 on Audiences and Programs, other interviewees were equally adamant that the Smithsonian had no business getting entangled in formal curricular education, except as a source of supplementary resources.

A number of interviewees also suggested that object-based learning had to be a central and integral part of any reasonable definition of museum education in general and Smithsonian education specifically. Object-based learning refers to an approach that starts with objects, and proceeds to make connections that respond to visitors' natural curiosity about them:

> *[An object can raise] many, many questions in [visitors] minds, and those questions are rarely answered through traditional [labels]. This is particularly true of children. They want to know, "What is it? What is it used for? Why did they make it? Why did you even keep it? What's it doing here? … Why am I here looking at this?"*

> *The museum collection is unique, so our role is to help students interpret and understand collections. Educators have to know the collections and how to read the artifacts. A lot of people do not have those skills. They do not work with primary documents. Information in class is more about facts.*

Some interviewees also commented that, in comparison with other museums, the variety of subjects about which visitors to the Smithsonian can learn is special and perhaps unique, and that this too should be part of how education is conceived here:

> *It's a little bit like when you go to college and you have those four years you may never again have in your life when you have the opportunity to be exposed to so*

many things. The Smithsonian is a little bit like that. There aren't too many places in the world that you can come for a week and be exposed to as many different things in a short period of time. Taking advantage of that exposure opportunity is another aspect of education that I think we are almost uniquely able to do.

Further, the various subjects covered at the Smithsonian can offer mutually reinforcing educational experiences:

Children learn better when something resonates with the way their brain works. If there are arts involved and if there are historical documents for them to look at, and then they see the ramifications in the biological world and in the world around them—all of those things working together make much more sense to a young person. So this Institution, vast as it is, has this richness in it, if we could work together—that's quite a challenge.

Educational Outcomes

What are the intended outcomes of Smithsonian educational activities? To the extent that the Smithsonian directly involves itself in curricular education, the outcomes are in principle easy to identify: demonstrated mastery of a particular body of curricular subject-matter.[73] For the less systematic education that is more typical of informal learning venues, outcomes are less well-defined. Interviewees suggested that they might include the following:

◊ To learn and to discover:

We use the word "learning," but it's interchangeable with "discovery," because you can't learn unless you have a discovery.

◊ To know by direct experience:

[When you] pick up a crystal tumbler and compare it to a glass-blown one, the experience is so different—you can't get that from looking at a slide. I don't think you can fully use the object to see through it to its historical context without a [physical] interaction with it.

73 Likewise, the intended outcomes of professional training programs are relatively straightforward, and involve attaining some level of demonstrated proficiency with specific technical skills or bodies of knowledge. Presently, there is a tendency to equate mastery of subject-matter with achievement of certain scores on standardized exams. The ongoing controversy surrounding the use of such exam-based scores as reliable measures of educational outcomes is beyond the scope of this study.

◊ To be stimulated to discussion:

> *How do you present the material in such a way that someone can quickly absorb it and reflect upon it in order to [talk about it with their friends]? … Increasingly that's what people want out of a museum experience.*

◊ To be affected by something and interested in finding out more:

> *It's important for people to leave here touched by something and wanting more information.*

◊ To feel interested and connected:

> *[Education] is creating opportunities within or around an exhibit that allow people to—first and foremost—develop enthusiasm around a topic, and then increase their understanding of that topic. It's not formal or specific bits of knowledge, information, or skills that visitors come out with, but a better appreciation or enthusiasm for something—or a moment of recognition, or a moment of connection. One of the things that excites me the most about exhibits is this idea of connections. … It's the sense of illumination, in a way.*

◊ To gain skills of observation ("visual literacy") and description:

> *There are a whole host of skills that can be learned from looking at a work and thinking about art—whether it's music or dance or objects in cases. Part of it is about building language skills, being able to describe things.*

◊ To acquire learning skills:

> *[Education includes] all activities that seek a primary outcome of learning or skills acquisition for members of the public—through study, through inquiry, or through inspiration.*

◊ To be motivated to change behavior:

> *All these fun facts are interesting, but do you leave with any movement within yourself that says … "I—we—have to do something differently?" I would see that as an emotional, affective experience—and one we want to convey beyond all the facts and figures.*

◊ To help visitors understand a unit's research:

> *I can walk [visitors] through and describe to them … that we are doing the research on this and coordinating with other groups, that we involve [scientists across] continents in this. All of a sudden people are "Wow, I had no idea!" …. Invariably that entire class apologizes that they were ignorant and did not understand any of that stuff. The seniors in high schools come away from that experience saying "I get it! I know what you're trying to do."*

◊ And, with respect to a few visitors, to instill a lifelong passion:

> *I got involved in [this field] because as a kid I went [to this museum.] … Then I spent a whole life in it. There is some degree of that, and we have to do everything we can to get to as high a percentage as we can.*

An Overarching Educational Vision

The following are some particularly articulate and thought-provoking quotations from interviewees concerning an overall direction for education at the Smithsonian:

> *The Smithsonian should have an encompassing educational mission, pre-K to gray. People who study the issue have learned that true happiness comes from engagement in something bigger than your own life. The Smithsonian should seek to give choices to people to be engaged more deeply in the life of the nation, [and to provide them with] an understanding of its place in the global community. … This means teaching them to think critically, to value research and evidence-based thought, [and] to love learning.*

> *Our system is such that it trains children to think one way when they are all sitting at desks in a classroom, and to think a totally different way when they walk out of that intellectual prison. So what I would like to do is have the Smithsonian think seriously about how to lead the world in informal education—meaning education that is inquiry-based, [and is something that] the kids and the teachers* ***do*** *together. Or that starts [them] thinking … the way the Smithsonian people do.*

> *The Smithsonian has an amazing opportunity. It is the largest museum complex in the world with content that cuts across every discipline, and every aspect of human curiosity about … themselves and the world they live in. [But] it … is not pursued in a way that it can have an impact. You have these 19 museums,*

each one operating independently; you've got a very weak central education effort. This Institution should be leading the way when it comes to the power of learning outside the schools. It should be developing the models that people look to around the world. It should be leading the way in serving under-represented populations [and forming connections among] museums. It should be leading the way in the use of technology. It should be defining the research agenda for informal learning. Nobody else has the resources to develop these materials. This does not mean that it has to be centralized or hierarchical. But it needs to be a community of people here who are working together.

My vision for the Smithsonian would be that it … should be about inspiration. Who are we kidding? We are not a university, we are not a high school. The curriculum stuff—let other people do that. Our job is to [address] what can be accomplished by [humankind], what we can do right when we put our minds to it. …We need to inspire the public with what humans can do. In a 10-minute experience, we can accomplish something towards that objective. Give me a week, and we will accomplish a lot more. Give me a summer or 15 weeks or a semester, and we will accomplish a heck of a lot more still. [Our vision] is to inspire as opposed to pretending that we are somehow formally teaching. … We should be in charge of fun and inspiration.

When I think about what is education in this millennium and about what the Smithsonian can, should, and does do well, I think it should be a catalyst to decentralized collaborative learning. That's the way scholarly learning will happen … in this century. [That's how] we are going to think our way out of this jam we've gotten into. The generation of scholars that's in diapers now is going to demand that their public institutions behave in ways that support open content and collaborative learning.

Discussion

The study team encountered almost as many views about what "education" means at the Smithsonian as interviewees. Interviewees differed in terms of how they thought about the scope and domain of the term; how education at the Smithsonian should connect to other programmatic activities (exhibitions, research, collections); what kinds of outcomes Smithsonian educational programs should aim for; who qualifies as an educator at the Smithsonian; who the audiences of Smithsonian education programs are, or should be; what kinds of educational strategies are appropriate for the Smithsonian and its units; and numerous other dimensions.

The study team sees little prospect of coming up with any single definition of education that applies to all units and would be accepted by all parties with an interest in the question. However, this need not pose an insuperable obstacle to moving forward with the educational enterprise at the Smithsonian. One advantage of the decentralized nature of the Smithsonian is that units and individuals can agree to disagree in some areas, even while moving ahead together in other, well-defined areas.

It is important, however, that interlocutors are clear on what precisely they are agreeing or disagreeing about. While there is no "right" definition for education at the Smithsonian, any kind of central strategic vision or plan for education must be very clear about what the term entails *in the context of that vision or plan*—while allowing plenty of space for its parts to pursue their own definitions of education as appropriate.

Possibly the most important area where clarity is required in a central vision is the balance among K-12 classroom support, informal learning, and professional development. As indicated above, many Smithsonian staff still implicitly or explicitly use the term "education" to mean "programs for schools and school-aged children." Breaking this habit will require very clear language in this area.

In the context of this report, the study team adopted a broad definition of education, which includes programs for schools, teachers, and school-aged children as an important component, but also covers undergraduate- and graduate-level courses and programs; public programs such as lectures, films, concerts, and symposia; adult education courses; media offerings (television, books, radio); online offerings; exhibitions; courses for mid-career professionals in a variety of fields; and so on. When the discussion is specifically focused on programs for schools, this will be clear from the context.[74]

74 Indeed, the study team discussed the possibility of using separate terms for schools-based education and other types of education. For example, the term "public engagement" was considered for the latter. However, the study team could not agree on suitably precise and consistent terminology, and this report continues to use the fuzzy but familiar term "education" for convenience.

Appendix 6: Audiences and Programs

I. Audiences

Audiences by Age

Smithsonian education programs serve a wide range of audiences, which can be classified along a number of dimensions. One of the most important is age.

Some Smithsonian educational offerings are designed for particular age groups. The following are examples:

- *Toddlers.* The Smithsonian Early Enrichment Center (SEEC))—an independent 501(c) organization affiliated with the Smithsonian—and some other units (such as NASM) offer programs specifically designed for toddlers and pre-K children.
- *Elementary and middle-school children.* A number of education offerings are pitched at pre-teen school-aged children, such as the *Museum Academy* after-school program at the Anacostia Community Museum (ACM) and Smithsonian Enterprises's (SE) Smithsonian Tours program for visiting middle-schoolers (see Box 6-1).
- *Teenagers.* Many units offer programs geared for teenagers who wish to explore particular career paths (for example, the *Design Directions* program at CHNDM fosters an interest in design careers, and NMNH has piloted a program for high school girls interested in science careers, *Future Female Scientists*) or subject-area interests (for example, several art museums offer programs to help youth understand and appreciate art, such as NPG's *Portraits Alive* and HMSG's *ArtLab for Teens*).
- *College-aged.* Most internships across the Institution go to undergraduate students. In addition, some units offer programs of study or courses for undergraduate students, such as NZP's collaborative multidisciplinary program in biodiversity studies with GMU.
- *Young adults.* Although many units regard the young adult demographic as an important one to cultivate for future growth, the study team found relatively few education offerings targeting them. One notable exception is HMSG's extremely popular *After Hours* program.
- *Adults.* TSA offers a wide range of courses and programs for adult learners. Further, many unit public program offerings that qualify as education using a broad

definition—for example, films, concerts, and lectures—are implicitly geared toward the general adult audience.

Box 6-1: Why Middle Schools?

Many museum educators and their management consider middle-school students to be a prime audience. This extends to the Smithsonian Journeys tour program, which focuses on middle schools. What is the reason for this emphasis? The following explanations have been suggested:

- Museum-related topics tend to align well with national, state, and local standards of learning for this age group. This has become particularly relevant with the advent of NCLB, which has compelled teachers to think of museum visits in the context of the tested curriculum, rather than as an opportunity for informal discovery and learning.
- Many potential program funders—especially those with an interest in STEM education—have a special interest in this group, as it is regarded as a critical age for establishing young people's general career trajectories. Evidence suggests that if students have not developed an interest in STEM fields by high school, it is generally too late, and that it is in or around the middle-school years that U.S. students begin to fall behind their international peers in these fields.
- In terms of logistics, field trips with younger students involve more student management (and correspondingly less learning), while the daily schedule structure at most high schools makes longer field trips more difficult to arrange. Older students are also considered to pose greater disciplinary challenges.

- *Inter-generational family groups.* Many units offer education programs designed for intergenerational groups (for example, family days and festivals), with activities that both appeal to children and offer parents an opportunity to participate. Hands-on activity rooms in museums such as NMNH (*Discovery Room*), NMAH (*Spark Lab*), and NMAI also typically promote interaction among family groups.
- *Seniors.* While the study team is not aware of any programs specifically calibrated for seniors, a number of offerings and programs (such as SE's Smithsonian Journeys

and the docent programs at most museums and some research units) generally draw a more elderly demographic.[75]

Of course, many Smithsonian education offerings, broadly defined, are not targeted at any specific age demographic, and appeal to a wide spectrum of ages. This is typically the case for exhibitions and related offerings, although some are designed with a particular demographic in mind (for example, NMNH's *Behring Hall of Mammals* was created for families with elementary school-age children), and many Smithsonian museums occasionally feature exhibitions specifically for younger children (for example, NMAfA's *Playful Performers* and the *Vicious Fishes and Other Riches* traveling exhibition in the Ripley Center). In the pan-Institutional Education Data Gathering and Evaluation (EDGE) database, the vast majority of primary audiences for Smithsonian education programs is identified simply as "All Ages" (see Figure 6-1).[76]

Niche Audiences

Some units have niche audiences for their specific subject-matter. For example:

- NASM and its associated *Air and Space* magazine appeal to individuals with a personal or professional interest in military aviation, as well as the slightly less well-defined communities of general aviation and space technology aficionados.
- NPM has a special connection with the philatelic community, and many of its offerings are designed to appeal to this community, or to entice others to join it.
- CHNDM has close links to the design profession, and several of its education programs aim to make young people aware of the career possibilities that exist in design fields, and to nurture their interest in such careers.
- ACM's unique mission entails a strong commitment to the educational needs of residents of the Anacostia neighborhood.
- NMAI maintains a close relationship with the Indian tribes of the hemisphere.

75 One important consideration for the senior demographic is mobility. Data indicate that museum visitation tends to drop precipitously among 70s-and-up because of mobility issues. One interviewee offered this suggestion to address this issue:

> *Seniors are a rising phalanx of lifelong learners, but only a small percent of the senior population visits Smithsonian buildings, and then rarely. But we can reach them with distance learning opportunities and distributed learning centers. The Smithsonian can become a once-a-month experience rather than once-a-decade. [For example, we might] partner with the libraries where lifelong access programs are gaining momentum.*

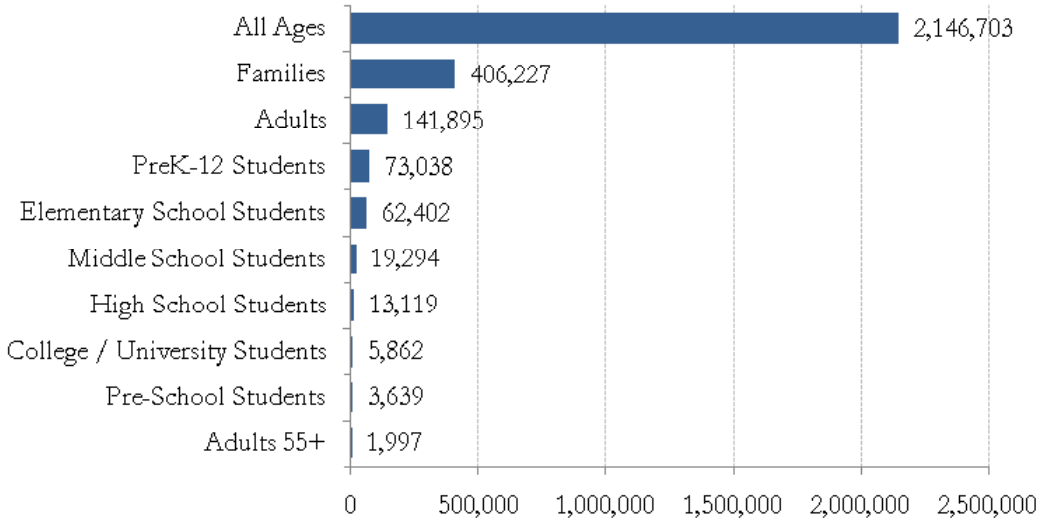
76 According to EDGE codes, the primary audience for a program is defined as the audience for which the education objective of the program was designed—that is, the target audience. Only one primary audience can be designated for a given program. Not all primary audiences are defined in terms of age in the EDGE database, but this is by far the most common way of doing so.

◊ The education department of SAO is part of the community of scholarly researchers who investigate how people learn science.

Figure 6-1: Primary Audiences Served by Smithsonian Live Educational Programs, by Age, FY 2008[a]

Source: EDGE database

a. Cumulative data from October 1, 2007 through September 30, 2008. Download August 14, 2009.



Other examples could be cited. Such units must typically balance their commitment to niche audiences with a commitment to the general public, and this can sometimes create tensions. For example, interviewees at NPM noted that philatelists sometimes disdain offerings pitched at more general audiences—especially children's programs. A NASM interviewee described that unit's balancing act as follows:

> *How do we grab the people who don't necessarily have an interest in aviation? It's like when the wives come with the guys who love aircrafts—how do we give them something that's interesting to them? Making people converts is a challenge. Is it our responsibility to think about that, more than serving the audience that already has an interest? Where does that balance lie?*

Underserved and Non-traditional Audiences

Underserved audiences (such as ethnic and racial minorities, individuals with disabilities, and individuals from lower socio-economic strata) and non-traditional audiences (such as young adults) present a challenge to many Smithsonian units. The core demographic for many

of the museums tends to be families or older individuals who are well-educated, relatively affluent, and white.

The primary ethnic/racial minority groups in the United States—Latinos, African Americans, American Indians, and Asian Americans—have somewhat different audience relationships with the Smithsonian.

The summer 2004 OP&A all-museum survey indicated that, across the board, Latinos and African Americans tend to be under-represented at Smithsonian museums relative to their numbers in the general population. However, African Americans were well-represented among NMAfA and ACM audiences, presumably because of their affinity with these units' subject-matter.[77] Latinos made up a relatively large percentage of NZP visitors, although this may have less to do with cultural affinity (or specific measures to attract this audience) than with the Zoo's geographic proximity to some largely Latino neighborhoods of Washington.

By contrast, in 2004, Asian Americans were not under-represented among Smithsonian visitors. Indeed, if anything, Asian Americans were over-represented—particularly at a number of units such as the Freer and Sackler Galleries (FSG), HMSG, and NMAI's GGHC in New York City. Likewise, American Indians were not under-represented across the Smithsonian, although this could be because of their over-representation among visitors to NMAI and GGHC.

The general issues raised by changes in the demographic and ethnic composition of potential audiences are addressed in depth in a number of other recent OP&A studies, including *2030 Vision: Anticipating the Needs and Expectations of Museum Visitors of the Future* (Smithsonian Institution, Office of Policy and Analysis 2007b), *Changing Faces: Museum Visitorship and Demographic Change* (Smithsonian Institution, Office of Policy and Analysis 2006), and *Increasing and Diversifying Smithsonian Audiences: An Overview of the 2004 Meeting of the Smithsonian Institution Council* (Smithsonian Institution, Office of Policy and Analysis 2004). Here, it will suffice to note that the Smithsonian has taken explicit steps over the last decade or so toward meeting the educational needs of underserved and non-traditional audiences. Examples include:

- The creation of the Smithsonian Latino Center (SLC) in 1997, as well as the Federally-funded Latino Initiatives Pool to create, foster, and fund programming aimed at Latino audiences or dealing with Latino themes;

77 ACM is also situated in an overwhelmingly African-American part of Washington. While NMAfA has always had a special appeal to African Americans, the Museum's leadership has not generally cultivated this audience, preferring to focus on the African art aficionado community—which is by no means predominantly African American.

- ◊ The creation in 2003 of a new National Museum of African American History and Culture (NMAAHC) to tell the American story from the perspective of its citizens of African descent;
- ◊ The movement—admittedly too slow in the view of some interviewees—toward reaching out to younger audiences through the web;
- ◊ The creation of an Accessibility Program that has established itself as a leader of the museum community on accessibility issues; and
- ◊ The introduction of the Heritage Month program.

At the same time, many interviewees complained that progress to date has been disappointing, and that the Smithsonian is evolving far more slowly than its audiences, leaving it struggling to catch up with more visionary or nimble competitors. Several interviewees noted, for example, that units tend to cater to the audiences they already have, rather than pondering how to expand their audiences by drawing in other groups. This was regarded as a short-sighted strategy, in the face of obvious demographic shifts:

> *It's a reasonable point—you should play in the areas that you are good at. But at some point … you have to start thinking outside of your traditional box, if you want to remain relevant in a changing culture.*

It should be noted that a few Smithsonian units are ahead of the curve in designing for visitors with disabilities. For example, an interviewee at NMAH related:

> *Our disability office has been pursuing money to start reaching out to the autistic community, and it just got some money for that. … Reaching out to that audience is really cutting-edge; there are only a few museums in the country that do anything for them.*

SAO is widely regarded as a leader in academic research into disabilities and learning. One interviewee described the unit's research into dyslexia and added:

> *We are interested in why people find science so tough, [and how] to make it better. Looking at people who have learning impairments is a natural thing. I think we are going to start to look at people who have physical impairments, say, if you are deaf or blind—how does that affect what you are going to take in, and how can we help that? Even if you are just wearing glasses, you have an impairment that is going to affect what you are seeing. Nobody is really looking at how that affects learning in the classroom. So, it's a direction that we're taking, but it's a new one.*

Targeting Specific Audiences

As noted, almost all units define the general public as an important audience to some degree, and some also have distinct niche audiences. A few units target specific audiences in other ways. For example, SAAM is more advanced than other units in using distance learning technology to reach offsite audiences; NMAI is currently pushing to make its onsite museum experience more family- and child-friendly; and FSG is more oriented toward the needs of subject-area connoisseurs.

On the whole, however, many units—and the Institution as a whole—have not precisely defined or prioritized target education audiences. For example, looking at total expenditures coded as "education" in the Enterprise Resource Planning (ERP) system across all units, expenditures on programs sub-coded as "General Public" are by far the largest sub-category (see Figure 6-2). The numbers in Figure 6-1, which indicate the vast majority of audiences for education programs are defined as "All Ages," also suggest a lack of focus.

This reflects one of the recurring themes mentioned at the outset of this report: a lack of systematic prioritizing at many units. In the absence of prioritization, target audiences are determined by factors such as funding opportunities, staff interests, and organizational inertia. (This is discussed in greater detail in Appendix 10, Management.) Ironically, the impulse not to privilege certain audiences over others may also result in a failure to serve anyone particularly well, as one interviewee admitted:

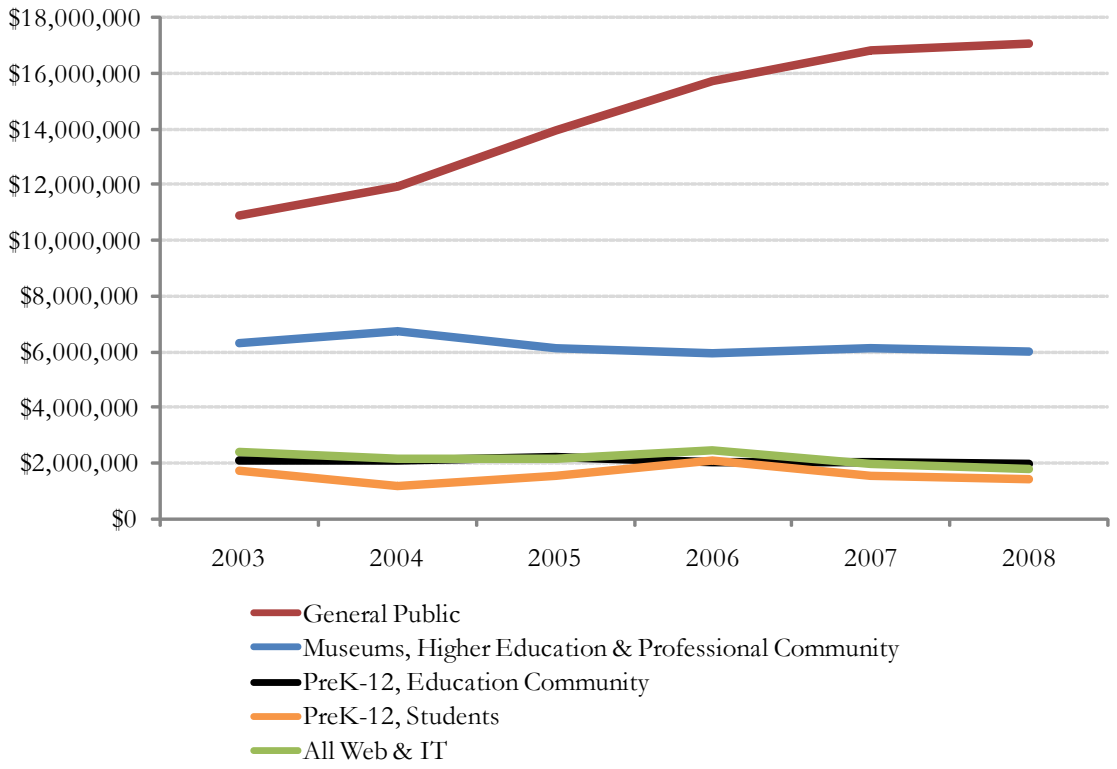
> *We get into these predicaments because we are trying to create programs that are useful for everybody. But in some cases, they end up being less useful for everybody because they are trying to reach everybody.*

A number of other interviewees echoed the sentiment that failing to make explicit choices about audiences tends to undermine program quality. Even if this were not the case, however, the resources available for education at the Smithsonian are limited, and should be deployed where they can have the greatest impact. This cannot be judged without reference to whom, exactly, a unit wishes to impact. One unit director put it this way:

> *There is no systematic overview of what SI should be doing. Without that, you are really wasting resources. … For example, how important is assisting the formal education system in this country? If that's important, that's going to shape some of your specific directions. How important is adult education? How important is making museum exhibitions more accessible to physical visitors? How important is the local community, versus the national community? I would like to see those questions answered, and have those answers shape some of the next steps we take.*

Figure 6-2: Purposes of Expenditures Coded as Education, FY 2003-2008—All Units

Source: Enterprise Resource Planning data



Categories as defined by ERP:

General Public: Programs and materials directed toward general audiences, such as lectures, seminars, family programs, adult education programs, and publications for the general public, including those related to exhibitions (such as catalogues). Excludes activities and materials intended for marketing, promotion, and public relations purposes.

Museums, Higher Education, and Professional Community: Programs and materials intended primarily to advance the knowledge and skills of professionals in the museum, higher education, and professional communities (other than those falling under PreK-12 Education Community).

PreK-12 Education Community: Programs and materials intended primarily to advance knowledge and skills related to teaching grades PreK-12.

PreK-12 Students: Programs and materials developed primarily for school audiences in grades PreK-12 and their parents.

All Web and IT: Web and IT activities undertaken in support of public programs (whether or not specifically coded as education).

A senior manager in the central administration offered a similar suggestion for a more explicit, Institution-wide assessment of audience and programmatic priorities:

> *As an Institution, we have to make some decisions about where are we going to invest. [For example,] do we think adult education should be 20 percent of the pie, early childhood education 2 percent, grade school education 35 percent…? That kind of thing. We ought to have some kind of guiding principles … [based] on what do we do well, and what niche we have that other people don't have.*

Audience Needs and Expectations

Some interviewees mentioned their concern that, even when audiences are adequately defined, educational programming at the Smithsonian is insufficiently attuned to audience needs. Among those who raised this issue, there was a general sense that the direction and content of educational programming often tend to be driven by the interests of staff—educational or curatorial—rather than by an objective assessment of what audiences want or need. As one interviewee put it:

> *Sometimes I think we don't know what our audiences really want. At the end of the day, we're here to serve the visitors who walk in our doors and go to our websites and use our materials—not to serve ourselves. If we're not providing materials that meet our visitors' needs, we're not really accomplishing our mission. … Program development at SI is not done for the audiences. [Especially] when it is attached to an exhibition, it is very much tied to a curatorial vision.*

Others voiced similar opinions:

> *It can't just be what SI wants, but what the audience needs and can use. … I'm not an authority on teachers, but [if we are going to do programs for teachers,] I feel we need to better understand how to best serve their needs.*

> *I remember when I started here finding it curious that a lot of our education projects stemmed from a person's particular interest or passion or knowledge.*

> *If you're talking about, let's say, Generation X or Generation Y or the Millennials, [you definitely need to use] Web presence and new media, because virtual reality* **is** *reality for them. They don't necessarily care about seeing the actual object in person. … We have to meet them where they are.*

Another observed, with a hint of sarcasm, that thinking about audience needs is often shallow:

> *… [We'll say,] yeah, well, we have the "Smithsonian audience." … But drilling down, what does that mean? Do you know who those people are? Do you know what they want? Do you* **care** *who they are [and] what they want?*

Another posed this hypothetical:

> *If a particular exhibition is about, say, the Montgomery Bus Boycott, and you are targeting the African-American community—then shouldn't you go to that community and ask them what they need, what is relevant, what questions they would like to have teachers answer? I think it would be a good investment of time and money to find out if we're on the right track.*

The increasing interest in program evaluation that the study team detected across the Institution (discussed in Appendix 10, Management) may represent the beginning of a shift to a more audience-centric approach to programming. However, such a change is likely to run into certain cultural barriers. The most important of these is the scholarly culture of the Institution, discussed at greater length in Appendix 8, Organizational Culture. In many cases, there is a sense that the Smithsonian provides audiences with what its specialists think audiences *should* care about, rather than what audiences actually *do* care about—or even worse, provides audiences with what specialists think their own peers care about.[78] One interviewee described the phenomenon in this way:

> *I know from my friends in the private sector that they don't come up with a new product unless they test it and find out whether there's a need for it. They won't produce X widgets unless they're pretty sure they can sell them. [When] we produce X widgets, we don't care whether there are audiences for them or not.*

On the other side of the coin, however, interviewees at several units—particularly ones with heavy visitation—stressed that many of their visitors were there mainly for a glimpse of iconic objects, and did not *have* much in the way of educational expectations:

> *In spring and summer, [our visitors are] mostly out-of-towners. Those are the "We're-going-to-check-this-off-the-list" crowd, rather than [people who are] coming here for a particular experience. … It's more "We have to see the Hope Diamond.*

78 OP&A study team members have sometimes witnessed this dynamic first-hand in the context of clashes on exhibition development teams between audience advocates (whether writers, educators, exhibition designers, or curators/researchers) and more academically-inclined team members who are more interested in showcasing their units' research or "putting their dissertation on the gallery wall."

> *We have to see the pandas. We have to see these five things while we are in Washington." … They're not really coming to learn anything.*

Another interviewee put it more succinctly:

> *I don't believe that a majority of visitors who come to the museum have an educational agenda. They don't have on their list of things to do: "Learn."*

As discussed in Appendix 4, External Environment, the most reliable survey data on museum visitation tend to bear out the view that relatively few museum visitors are specifically seeking educational outcomes. Nevertheless, the data also show that the vast majority of museum audiences do gain education benefits from their visit. Thus, the implication that museum educators need not concern themselves with the educational needs of casual visitors seems misplaced. To the contrary, finding ways to convey educational benefits to the majority of visitors who do *not* have specific educational expectations is a critical issue.

II. Programs

Variety

According to Volk (2008), the EDGE database recorded over 35,000 Smithsonian "educational events" in FY 2007. These included real and virtual tours, videoconferences, and workshops for school groups; lesson plans, in-service training, and curricular kits for teachers; summer camps, family days, web interactives, and hands-on activities for kids and families; and lectures, films, symposia, and courses for scholarly and general audiences alike.

Smithsonian museums and research centers also hosted interns and fellows, partnered with universities, and provided professional training and workshops for specialized audiences, including teachers, scientists, scientific support staff, and museum professionals. They trained volunteers as docents, explainers, and interpreters. They created podcasts and other Web content, as well as print publications and a great variety of live public programs. In many cases, these efforts were tied to exhibitions, but they also highlighted Smithsonian research and collections more generally.

Programs run by education departments per se are only a part of the broader universe of the Smithsonian's education offerings. Other departments (offices, divisions, and so on) that contribute to educational programming include departments of public programs, visitor

services, academic programs, publications, new media, and so on.[79] However, education departments generally remain the primary locus of programs that deal with schools, teachers, and children. In most units, they are also associated with docent programs.[80]

Standardization versus Experimentation

Some interviewees raised the issue of the lack of consistency in the presentation, approach, and sometimes even quality of educational programming across units, and suggested that the Institution could benefit from greater standardization, or at least setting central guidelines for educational programming across the units:

> *There needs to be some central place in the Smithsonian that provides the guiding principles, the structure, and the oversight, so that there is more uniformity and quality is more consistent.*

However, interviewees at the research and museum units tended to be wary of any talk of standardization. They emphasized that the audiences, missions, and needs of the units vary widely, and that they require the freedom to craft their offerings accordingly. Moreover, some interviewees argued that movement toward pan-Institutional standards in educational programming would stifle innovation and creativity:

> *The right place for innovation to happen in the future is at the unit level. … We're either going to change 162 years of Institutional history and try to do it some other way, or we're going to embrace the wonderful things can and should be happening at the unit level.*

> *I wouldn't want a cookie-cutter kind of thing for the whole Smithsonian. I think that would be very limiting to the diversity of the Institution.*

An interviewee from the Office of the Chief Information Officer (OCIO) explained why a less standardized approach made sense for web-based programming:

> *The best things happen in the Institution's websites when content experts, the public, and the collections are close together, and that happens out on the edges of the Institution. I call that innovation at the edges, and it is very harmonious with the way the web is built. SAAM's blog is an example. [NPM's] Arago [collections website] is an example. Micro sites on exhibitions are an example. Anywhere you*

79 This prompted some interviewees to question whether separate education departments are even necessary. Some units—such as NMAH and HMSG—have subsumed their education departments into larger divisions that handle a range of public and/or scholarly programs and offerings.

80 In a few museums, docents fall under visitor services.

have web-savvy curators or experts who know their collections and who know their audiences, that's where you find creative empowerment at SI. It doesn't usually happen through central initiatives.

III. Onsite Versus Outreach

One of the most important issues with which Smithsonian educators and managers must continually grapple is the balance between onsite programming for physical visitors, and programming that reaches beyond the Institution's walls to national and global audiences.

Variation Among Units

Central and Research Units

The balance between onsite and outreach programs varies considerably from unit to unit. Because of their specific missions, Smithsonian Affiliations, SITES, NSRC, and the Regional Programs arm of TSA are heavily focused on outreach.

Other central units such as SLC, SCEMS, and the Asian Pacific American Program (APAP) offer a balance of onsite and outreach programming, with onsite programming typically done in partnership with museums or the Zoo. The Center for Folklife and Cultural Heritage (CFCH) also falls somewhere in the middle—for example, reaching both large physical audiences with its annual Folklife Festival on the Mall and significant national and global audiences through Smithsonian Folkways' various media distribution channels. By contrast, TSA, apart from its Regional Programs arm, focuses largely on local onsite audiences through its adult education offerings and Discovery Theater.

One interviewee made a strong argument for why central units have greater responsibility in the area of outreach than the museums:

I think every unit should be doing some national outreach. But central units … have a special responsibility for outreach, because of our mission and because we don't have to deal with 10 million visitors walking through the door.

The situation at the research centers varies. For example, the SERC education department emphasizes onsite programs,[81] while SAO has a larger outreach component. The Smithsonian

81 At one time, SERC was at the leading edge of interactive distance learning among Smithsonian units. Unfortunately, its distance learning program was a casualty of lost project-specific funding.

Tropical Research Institute (STRI) also tends more toward onsite audiences, although it has done some outreach.

Museums and Zoo

On the whole, the default focus for Smithsonian museums and the National Zoo tends to be on physical visitors, although all units also engage in some degree of outreach.

Several interviewees were candid about this emphasis on onsite audiences. Often, the explanation was not that units did not want to reach out to offsite audiences, but rather that resources were inadequate to pursue both audiences aggressively, and physical visitors had to come first.[82] For example, a Zoo interviewee asserted:

> *Our first priority is the two million visitors who show up at our door. If there's nothing here for them, it doesn't matter what we do nationally. The national part is on top of that. It's always going to take second place, because we don't even have the resources to do all we can for the people who are right here in the Park.*

A museum director concurred in these words:

> *We have lost a lot of positions and intellectual capability here. As a result, we have not been able to go outside the museum as much as we used to. Our first priority has to be the collections, exhibitions, and programs that are here. So if someone pushed me against the wall and said, "You have to give up something, what's it going to be?" I'd have to give up the outreach outside the museum. … I don't think they are mutually exclusive. But in terms of weighing the resources that we devote to them, [onsite has to come first].*

An educator at another museum described outreach as a luxury that her unit simply could not afford:

> *I'm not opposed to outreach, [but] given our funding issues right now, it makes the most sense for us to focus on exhibitions [in the museum]. … Outreach in some ways is a luxury, when you have a budget that allows that. We just don't.*

One interviewee noted that local audiences comprise a large part of his museum's visitors and constituency, and had to be given precedence over others:

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82 The primacy of onsite audiences was usually assumed rather than argued. However, a few interviewees justified this assumption by referring to the object-based nature of education at the Smithsonian:

> *If I was going to guess why we don't think of our online audiences as our primary audience, it's because we are here, the [objects] are here, therefore we have to consider the people who walk through our door our primary audience.*

We have discovered through research that a lot of our audience is local, so being there for them has become important in the last few years for us.

Another indicated that virtual audiences—while potentially much larger than physical audiences—are openly perceived at her unit as being of secondary importance:

Even if we are more visited online, the mindset is that those [visitors] are secondary. No matter what the numbers say, [I don't think] that is ever going to change.

Underlying such arguments is the trade-off between resources devoted to onsite and offsite programming. One director of a museum with a strong outreach program described the trade-off this way:

What pressures does a successful outreach program place upon other programs? Does it put pressure on other areas? Are we not concentrating as much on undergraduate experiences or family programs in the [museum] because everybody is focused on [offsite] programs? The answer is: quite possibly. It's a big deal running those programs. … When you go into [underserved] communities, you can't just go in there once; it's got to be a multi-year commitment. So I would say it definitely creates a healthy tension. It's something we talk about.

Another interviewee had this to say:

If you focus more on national audiences, it takes from what you can do onsite. … I would stay with onsite audiences because of what we can produce. The results are more tangible, and onsite education has greater impact. I am not all that convinced that [virtual programs such as] videoconferencing can be very interactive or all that effective.

This trade-off appears to be particularly acute when outreach efforts demand physical travel by staff, although web-based outreach can certainly also be expensive and time-consuming.[83]

Several interviewees were concerned about the possibility of central mandates for increased outreach that, unless accompanied by an overall increase in resources, would undermine the quality or quantity of onsite programs. An education department head said:

Don't just pretend that because we want to do [more outreach], it can happen. … I am bracing myself for [a central] mandate, and I want to be sure that I'm

83 For example, SAAM's contract work for the Department of Defense is conducted primarily through interactive, web-based technologies, but it still places considerable demands on staff time.

thinking about it. It will lower the quality of the work that we do onsite. I'm a pragmatist, and I can do that; but [you have to be aware that this will be] the result.

Another educator agreed in these words:

There has been a lot of conversation about nationalizing education around the Smithsonian, and it's not something we have the staff to do. … I worry that there will be a big push that takes a lot of resources away from what we do now.

On the other hand, some interviewees—including some from the museums—argued strongly for a greater focus on offsite audiences, often pointing out that developments in web technology in the past few years have lowered the cost of, and increased the opportunities for, such outreach:

One thing Secretary Small said that hit home is that we belong to the nation. Only a tiny percentage of people actually get to D.C. for a holiday. … We have to do more than [serve] the tired, hot, and cranky mom and dad with 2.5 kids in tow on a two-hour visit. The museum experience is how we are recognized, but if we fail to go beyond that, we are definitely not doing our job. … If we're to get beyond that, it's going to be outside the walls of the museum. Increase and diffusion of knowledge—that's our mission. It says nothing about 20,000 people visiting a museum for half a day.

The museums have millions of people coming to their doors, and we have to serve them. But for every physical visitor, we have 10 or 11 virtual visitors. They have expectations. Do they deserve any less? I don't see why. As technologies evolve, there will be more opportunities to engage them, and we should invest more in it.

Quite rightly, the museums see what defines them as the actual object, the stewardship of it, and creating an in-person experience of it. However, if we accept that the vast majority of the people on this planet will never come to the museums, then we have to make a decision. Do we privilege the object to such an extent that we say that if you can't come here in person, then tough…?

Of course, it might be argued that the Smithsonian can fulfill its national mandate through channels other than education. For example, one interviewee noted:

Programming is only a piece of what we do nationally—we do a tremendous amount of research that supports national and international programs. I don't

know that our educational programs have to be national in order to feel we're servicing our national mission.

Others, however, argued that education was a particularly appropriate vehicle for national outreach. One museum director made that argument in these words:

We've seen education really as the best possible way to lift [us] from being a local museum into a national museum. … We've recognized that educational outreach—through distance learning, through teacher training, through running education programs nationally—is the best way for us to aspire to and deliver our national mandate.

Platforms for Outreach

Interviewees discussed several potential platforms for national educational outreach.

The Web

By far the most frequently cited platform for outreach was the web. Smithsonian websites already register millions of hits—approximately 183 million in 2007, according to the Smithsonian WebTrends report—and information technology (IT) staff say the potential to serve a much larger audience is there. Indeed, interviewees frequently spoke of the expectations younger audiences have for internet-based resources. Furthermore, the web is viewed as a cost-effective vehicle for taking resources out to the nation and the world, and online technologies—and thus the web's potential—are continuously progressing.

One concern voiced by some interviewees about the web was that virtual experience may be less meaningful than physical interaction with Smithsonian people or objects. However, one interviewee suggested that such concerns are likely to fade over time, because younger generations, for better or worse, simply do not make the stark distinction between virtual and physical interaction that older individuals tend to see. Therefore, they are not as concerned as their elders about physically encountering "the real thing." Another offered this observation:

We say that the museum experience is [about encountering] the "real thing." But in fact, museums have always been a mediated "virtual" experience, from the very beginning. … [Consider a] natural history diorama—yes, those are "real" animals that were alive once; … but it's not out in the wild. It's a safe place where you can learn about the wild. … So are people looking for that "real" experience? What I see is a redefinition of "real," with not so much [of an emphasis on] the physical [objects].

The web is discussed in greater detail in Appendix 16 on Technology.

Networks and Partnerships

Several interviewees noted that the Smithsonian already has a powerful infrastructure for national (and global) outreach in place, through networks created by the units formerly organized under the rubric of National Programs—TSA, SITES, SCEMS, and Affiliations—as well as a number of other units. However, this was often coupled with the observation that the Smithsonian has sometimes failed to fully exploit these networks. In some cases, interviewees suggested that the problem was a lack of coordination among units in their networking activities. For example, one interviewee complained:

> *What speakers or exhibitions might be out there at our Affiliates that tie in to a Heritage Month? The [SCEMS] Teachers of the Year—they go back and do their thing, but we're not working together to find out whether there is a SITES exhibition in that teacher's city or an Affiliate with which they could network. I feel we lose the opportunity to find synergy.*

Another museum educator saw an unexploited potential for the Smithsonian to network at a grassroots level across the nation:

> *One unexplored area is how to develop connections on a local level across the country. My gut feeling is that NMAI is doing a better job of this than anyone else, because it's organized with local tribal councils in mind. Their mandate was not just to represent those very localized cultures and traditions in the museum, but [to] go back and serve those local communities. … But it's on a national scale.*

Coming at the problem from an opposite, top-down perspective, some interviewees discussed how the Smithsonian can expand its reach through strategic partnerships with other organizations that bring their own national networks to the table. For example, an NMAH employee explained how that Museum's partnership with the Verizon Foundation's Thinkfinity consortium is promoting and disseminating NMAH resources across the country:

> *Promotion is, for us, probably the biggest benefit of Thinkfinity, other than getting money directly. They have a* ***huge*** *promotional machine. Their e-mail list, their press, their website—it expands our "increase and diffusion." … We have Teachers Night and things like that, but that's a drop in the bucket, compared to something like the Verizon Foundation, which has this machine consisting of partnerships in different states. They're out there in the field training teachers how to use our resources. … We're webcasting lessons and training trainers who will then train*

others in their home states. That's probably the kind of model that SI has to look at for national outreach.

Traveling Exhibitions

The Smithsonian already has a presence in all 50 states through traveling exhibitions organized by SITES and other units. These have proven to be a successful way of getting Smithsonian resources into museums, libraries, schools, and other public venues across the nation, including in small towns that could easily fall under the radar screen. For example, the *Museum on Main Street* project, a partnership among the Smithsonian, state humanities councils, and rural museums that receives Congressional funding, specifically focuses on bringing exhibitions and supplementary educational resources to rural Americans. One National Board member had an idea for expanding such outreach to rural communities:

For states such as Wyoming, Utah, etc., [we] should explore the possibility of developing a series of trucks with traveling exhibits to serve rural areas that do not have access to a museum. This could be self-funded and utilized to demonstrate that the Smithsonian serves the nation. The Oregon Museum of Science and Industry has such traveling exhibits and, when that institution got into financial trouble, this service generated important support across the state.

As an aside, SITES is almost unique among Smithsonian units in that it does not have designated educators on its staff to create learning materials to accompany its exhibitions. If supplementary educational materials (beyond those that can be supplied by the exhibition project team itself) are a desired part of an exhibition package, SITES will use contractors to create them, or will incorporate existing materials, often created by other organizations.[84]

Distance Learning and Electronic Field Trips

The study team also encountered many proponents of distance learning (typically based on videoconference technology) and electronic field trips (broadcast via satellite or the internet). The difference between "distance learning" and "electronic field trips" as used in this report, and as commonly understood, is that the former reaches a relatively small audience—such as a single classroom—that can interact in real time with personnel at the provider organization. The latter are broadcast to large audiences that may number in the millions, scattered across thousands of classrooms; the trade-off, of course, is that electronic field trips cannot offer the personal interactivity that distance learning allows. SAAM was frequently singled out as

84 SITES exhibition project managers typically have a background in museum education or public outreach, and play the "audience advocate" role in the exhibition development process that is often played by educators at other units.

a leader in interactive distance learning among Smithsonian units, while several units have explored the potential for reaching far-flung audiences through electronic field trips.

Advocates for distance learning noted that schools and other organizations are increasingly equipped for distance learning, and that it can be a cost-effective means of connecting Smithsonian resources and personnel to audiences across the nation and beyond. However, many were disappointed that the Institution lacks a central plan and technological infrastructure for distance learning, and is somewhat behind the curve in this area. For example, one interviewee noted that there is a great deal of interest among the Affiliates in distance learning, and many look to the Smithsonian for leadership and content, but have often been disappointed at how little the Institution has to offer.

The advantage of electronic field trips, on the other hand, was usually framed in terms of the huge audiences and vast geographical coverage that they potentially provide.[85] For example, units such as NASM and NMAI, in collaboration with partners who have provided expertise and infrastructure, have conducted electronic field trips with audiences that potentially number in the millions.

On the other hand, one museum educator, citing a study done recently by OP&A, offered a dissenting opinion on the advantages of distance learning and electronic field trips. This interviewee noted not only that such offerings were not much in demand among teachers, but also that the impressive numbers associated with electronic field trips were often illusory:

> *One of the things we discovered through the teachers' survey was that only 3-5 percent of teachers thought a distance learning program was something they really wanted to do. It was the lowest-ranked thing. And we had constantly been pushed in that direction, because of the huge numbers that [classroom broadcast] programs gin up. But the way you get those numbers is that every school district counts it differently; so if one school in Fargo gets it, they may count it as being available to every kid in the school system. Or if one classroom in Fairfax City gets it, they count every classroom in the building. So you get these huge numbers that are total lies. … So should you close a program here [onsite] because it only serves 50,000 people a year, as opposed to the 2 million in one day [you supposedly get with an electronic field trip]? Well, not really!*

85 The term "potentially" is deliberately used here because, as discussed below, the numbers associated with these programs typically refer to classrooms or students who *have access to* the field trip—not to those who actually participate in it.

The Smithsonian Channel and Broadcast Media

Some interviewees noted that broadcast media—particularly SE's Smithsonian Channel, a partnership between the Smithsonian and Showtime Networks—offered extraordinary opportunities for educational outreach that the Institution has only begun to explore.

Although the Smithsonian Channel is a newcomer in the field of educational television and faces powerful competitors such as the History Channel, Discovery Channel, Public Broadcasting Service (PBS), and National Geographic, it has already established a reputation for quality programming. For example, in 2008 it became the youngest channel to win an Emmy; it has also received a number of gold Parents' Choice Awards from the Parents' Choice Association.

SE interviewees indicated that the business model of the Channel rests on the Smithsonian's reputation as a purveyor of quality educational content. In the absence of this brand association, it would make little sense to enter the saturated market for television programming that combines entertainment with learning:

> *What really sets it apart is that it has the Smithsonian name on it. There is one and only one brand name such as that. What that means is that we have tens of millions of artifacts and each, in essence, represents a story. [We showcase these in] our* ***Stories from the Vaults*** *series and others that focus on behind-the-scenes stories at the Smithsonian. Think of the millions and millions of artifacts that we have—each of which has a unique story associated with it, or else it wouldn't be here. If you cull the best of the best, you've got a fascinating line of programs that you could not find anywhere else. … The Discovery Channel does a lot of great things. National Geographic is a super channel. But they do not have what we have, in terms of museums and research centers that do one-of-a-kind work. … If it didn't have [a name like] "Smithsonian" on it, I think you would have to be crazy to try to compete in any big-league medium these days—cable TV, national broadcast, magazines.*

All of the programming offered by the Smithsonian Channel is, at some level, educational in nature. At present, almost all of it is aimed at a general audience, and none is aligned with specific standards of learning. However, according to interviewees, the Channel has enormous potential not only as a provider of engaging educational programming for general audiences, but also as a creator of programming specifically designed to support classroom instruction. However, the former is clearly the immediate focus of the Channel's efforts. Some interviewees said this was to be expected, given the state of development of the joint venture:

The current focus is on producing content for general audiences. More specialized content might be forthcoming later, but this is only year three of a 30-year contract. Over the next few years, they hope to develop cable-in-the-classroom products and teaching aids, and to get [Smithsonian] education staff involved in creating content. There's an opportunity there, and everyone sees it.

At some point, we want to be distributed throughout the schools. We have been talking with [the] Cable in the Classroom [foundation]. But it's still a fledgling, start-up product. We need to get our feet wet and get a foothold in an industry and a market that is very competitive. Then we will start looking at how else we can distribute programming.

Others, however, thought that the Channel could be moving more quickly toward specialized products for the classroom:

The SI Channel would eventually like to do cable in the classroom—and that's exactly where they should be going, if they're serious about education. But it's not happening right now, and I'm not sure why that's not happening faster. That's where you want it to be; you want teachers to use it. You could also possibly create lesson plans for it, and if districts wanted to purchase those to go along with the cable in the classroom, you have a nice money-making venture with that. But we seem to be stuck on that. I don't think we have enough people to make it happen.

Interviewees also indicated that the Channel has been initiating contacts with SCEMS to work on distribution mechanisms for Channel content, and that the mechanics of working with the units on programming have been rapidly improving after some problems in the start-up phase.

Training

Many interviewees felt that the most effective way for the Smithsonian to have a broad educational impact across the nation is through training—whether for teachers, museum professionals, or others. As one interviewee put it, "the multiplier effect is great." Another discussed it in these words:

[We were] thinking about a program where we do train the trainer, so you could have college students or high school students or whatever come in, and you teach them or train them how to facilitate certain activities, and then they go out into the communities or to the schools and do the same kinds of things so that… we're

reaching beyond the walls, it's not just our tiny staff trying to go out and do that; we have a group of people out there doing that on our behalf.

(Programs targeted at teachers and museum professionals are discussed in detail in Appendix 7, Professional Training.)

Marketing and Dissemination

Interviewees suggested that if outreach were to become an Institution-wide priority, the Smithsonian would have to become much better at marketing and distributing its educational offerings to national and global audiences. As several interviewees noted, few of the individual units have the expertise or critical mass to effectively get their material out to and noticed by the wider world:

None of the units has ever been good at reaching out and getting people to know what we have and how we can help. It's just not something we have the money or the staff to do.

Other interviewees discussed the issue in these terms:

Recently, we realized that although a lot of our training programs would be attractive to a national audience, we do not have a marketing mechanism that would allow us to reach that far. If SI really wants to [reach people in] Arizona, California, and Chicago, then we're going to have to look not only at our programs themselves, but at marketing strategies.

Marketing is another big issue. When I ask audiences of teachers across the country how many of them have visited the Smithsonian, most hands go up. Then when I ask how many have used SI educational resources, hardly anyone has.

Several interviewees suggested that such a national/global marketing function would be best handled by a central unit that concentrated the Institution's expertise in this area in one place, where it could be easily tapped by the various units as needed. (This is discussed in more detail in Appendix 11, Structure and Organization.)

The creation of the Smithsonian Across America website might be considered a step in this direction. The site, launched in April 2008 to publicize the Institution's national outreach efforts, features an interactive map of the United States that the public can use to find information about Smithsonian Affiliates and upcoming Smithsonian programs in their state.

IV. Schools, Teachers, and Curricular Education

Another critical question for the future of education at the Smithsonian is whether it can or should focus more explicitly on K-12 school audiences—either directly through offerings for students, or indirectly through offerings for teachers. On this subject, the range of interviewee opinions was vast.

As discussed in Appendix 4, External Environment, there is now widespread acceptance that U.S. public schools are failing to meet the needs of 21st-century students. Attempts to reform, patch, adjust, and prop up the existing formal education system are likely to continue for a long time to come. Some interviewees felt this dire state of affairs calls for the Smithsonian to turn its attention toward a new calling in support of schools. As one interviewee put it:

> *The Smithsonian has an opportunity—if not a responsibility, at least an opportunity—to assist in making formal education for school children better. I'd like to see that as one of its real priorities. Not simply developing relationships with Chief State School Officers and the like, but working with the smartest thinkers in the country about the role that we can play in everything from curricular materials and online educational materials to online teacher training. That's the real opportunity that we don't do very well with.*

However, other interviewees felt equally strongly that the Smithsonian not only lacks expertise in curricular education, but that aspiring to a leading role in this area would be hubristic:

> *We are so [fixated] on K-12 [education]. … [But] we don't do it well, and we don't have people on our staff trained for K-12. It's a bunch of baloney. If we are really going to be serious about K-12, somebody should look at the money that has been put into it across the nation, and all the failures, and think about it.*

Most Smithsonian units have taken a pragmatic position somewhere between these two extremes. They create programs for schools and teachers, but only as one audience among others. The weight of such programming varies among units. In general, it continues to account for a large part of what most museum and research center *education departments* do, but a much smaller part of the overall educational offerings provided by the unit. Examples of such programming include the following:

- The mission of NSRC is to promote comprehensive reform of K-12 science teaching. It pursues this goal through leadership development workshops, awareness-building

programs, and the creation and dissemination (through partnerships with states and school districts) of curricular courses.

◊ SCEMS serves schools and teachers through a variety of channels, such as:

» The Teachers' Night program, which seeks to raise teachers' awareness of Smithsonian educational resources.[86]

» The Teacher Ambassadors program, which introduces Council of Chief State School Officers (CCSSO)-designated Teachers of the Year from all states to Smithsonian education resources, and recruits some of them to publicize these resources in their home states.[87]

» The smithsonianeducation.org education portal, which provides a link to a wide range of Smithsonian educational resources from across the units. These are aligned with state curricular standards for the benefit of teachers who would like to use them in their classrooms.[88]

◊ A number of units maintain ongoing partnerships with schools or school districts. Examples include ACM's partnership with Bernie Elementary School in Anacostia, SAAM's contract with Department of Defense schools; and partnerships with Loudon County, Virginia schools maintained by UHC and the Naturalist Center of NMNH.

◊ The units collectively offer a range of onsite and offsite teacher training programs. Examples include training conducted through the Department of Education's Teaching American History grant program (often involving SCEMS or TSA, and drawing in other Smithsonian units as needed); CHNDM programs that train teachers to incorporate design thinking in the classrooms; and SAO's online Annenberg Professional Workshops, which have reached over 100,000 teachers. (See Appendix 7 on Professional Training.)

◊ Museums and some research centers offer "on-demand" programs for visiting school groups, including but not limited to traditional docent-led tours.

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86 This is offered annually for Washington-area teachers at a Smithsonian facility on or near the Mall. Teachers Nights have also been offered in a number of other cities over the years, but funding constraints have limited such out-of-area events to a handful each year.

87 CCSSO is the national umbrella organization for the public officials who head departments of elementary and secondary education in the 50 states, District of Columbia, Department of Defense Education Activity, and five U.S. extra-state jurisdictions.

88 The study team heard mixed reviews about the curriculum alignment feature of the site. While most interviewees found it useful or at least potentially useful, some complained that the curricular designations were often too broad or too imprecise to be of much practical use.

- ◊ A limited number of units, most notably SAAM, offer interactive in-classroom distance learning.[89]
- ◊ Smithsonian units also produce a variety of lesson plans and other supplementary classroom materials, such as teaching posters and SCEMS's *Smithsonian in Your Classroom* publication.

Traditional Offerings: School Group Tours and Lesson Plans

Docent-led (or occasionally staff-led) tours for school children have long been the quintessential museum education offering. These traditionally have consisted of a docent lecturing to a small group of school children as they move through the museum.

As discussed in Appendix 4, External Environment, there has been some drop-off in the demand for school tours recently as a result of NCLB; and economic and logistical considerations also raise barriers to school trips in some cases, as discussed in Box 6-2. Nevertheless, at some units—for example, NPM and SAAM—such tours remain an important element of the educational portfolio, although perhaps with format changes to make them more engaging to today's young people, such as substituting two-way interaction for one-way lecturing, or replacing a museum-highlights approach with a thematic approach.

Interviewees at several of the larger units were unenthusiastic about traditional school tours, sometimes portraying them as a glorified form of crowd control rather than an effective education medium. For example, one interviewee said:

> *School groups are a big issue; I used to work for a tour company, so I understand the issues. They seem to get dropped off at a museum and picked up at the end of the day. What are the museums supposed to do with them? They don't even know who's coming; to ask them to design programming for that is incredibly hard. It's great that SI is free, but it leads to this uncontrolled aspect.*

NMAH recently ceased to offer such tours, and instead provides self-guides for visiting school groups. NMAH also stations docents and actor-interpreters in locations around the museum, where they are available to engage all interested visitors, whether school children or others. Similarly, NZP now deploys its docents primarily as "interpreters" stationed at exhibits, rather than as leaders of tour groups.[90]

89 NASM's distance learning program was described as being in a start-up phase at the time the study team spoke with staff there.

90 Interviewees at the larger museums and Zoo also indicated that only a small fraction of visiting school groups sign up for tours.

Box 6-2: Schools and Travel Logistics

Issues of travel logistics may contribute to the Smithsonian's underutilization as an educational resource for schools in the Washington, D.C. area. Schools in areas removed from downtown D.C. must contend with a basic scheduling issue: buses are not available for field trips until they have completed their morning rounds, and must be back on those routes by the end of the school day. Depending upon travel time to the Smithsonian, this may leave relatively little time for a rich learning visit. Some districts get around this problem by using chartered buses, allowing them to start earlier and stay later than they could otherwise. However, the costs of a chartered bus can be significant.

For the District of Columbia Public School system (DCPS), travel time is not an issue, but other problems exist. Because DCPS is an urban jurisdiction, it does not operate a large bus fleet. While it does have an extensive public transporation system, the cost is often a deterrent in light of tight school budgets or family income. Because of the NCLB emphasis on high-stakes testing, there is also an increasing reluctance to permit field trips that do not tie directly into the tested curriculum.

A local organization, the D.C. Arts and Humanities Education Collaborative, supports field trips by DCPS students by providing transportation and organizational logistics to school groups wishing to visit museums. At present, several Smithsonian units are members of the Collaborative, including FSG, NMAfA, NPG, SAAM, and TSA's Discovery Theater.

An interesting model for how the Smithsonian might work with a local school district is the recently established partnership between the Prince George's County (Maryland) school district and the Goddard Spaceflight Visitor Center of the National Air and Space Administration (NASA) for district-wide science learning. This facility—a converted school—is close to the Goddard facility, and under the terms of the partnership, Goddard staff and resources are deployed to that center in support of its educational goals.

SE has a partnership with the EF (Education First) Group, which offers educational tour packages of Washington, D.C. (and other destinations) for out-of-area school groups. These packages include visits to Smithsonian museums. However, a recent OP&A study of the program (Smithsonian Institution, Office of Policy and Analysis 2007a) suggested that the museum visit component of these tour packages was not very successful as an educational

experience—a conclusion that tends to support the observations about groups of school children in crowded museums offered by a number of interviewees.

Written lesson plans have also long been a staple of Smithsonian and other museum educational offerings for schools. However, some units are rethinking their approach to lesson plans in the face of evidence that teachers do not typically want or use detailed, formal lesson plans. Rather, they seem to prefer "a la carte," supplementary materials and activities that can be mixed and matched with various curricular topics, do not require a great deal of time, and can be easily plugged into classroom presentations. As one educator related:

> *We used to do curriculum kits. One of my big projects several years ago was this big, giant curriculum kit on [a well-known historical figure]. It would have taken you a whole year to do! That's what we used to do. But then we learned from our eachers … that they don't want that. They want to cherry-pick resources they can use in smaller units. They want to enrich a lesson with some little bit they can get from us or some guideline about how they might do some little activity.*

An interviewee at NMAH also noted that the Smithsonian's comparative advantage in supplemental educational materials is not in the area of writing lesson plans per se:

> *There are thousands of lesson plans out there on, say, Thomas Jefferson. You can find them anywhere; you don't have to go to the Smithsonian for that. But we have the* ***stuff****. The objects. A lot of the older lesson [plans] don't focus on the objects, and they should. What the museums bring that no one else can is their intimacy with the objects. They're here, and we can use them as vehicles for learning.*

Models for K-12 Offerings

Smithsonian units that have been suggested as possibly offering useful models or lessons for increased Smithsonian involvement with formal K-12 education include NSRC, SCEMS, and SEEC.

NSRC. The unit cited most frequently as a possible model for a more aggressive Smithsonian role in curricular education is NSRC. It currently has achieved approximately 30 percent penetration of the elementary school market for science teaching materials (and about 5 percent penetration of the middle school market).[91] This is remarkable for an organization of NSRC's size and financial resources. Further, NSRC dedicates a significant part of its

91 Meaning that it has established relationships with school districts and states that represent about 30 percent of elementary-school kids.

program development budgets to formal evaluation of its materials and methodologies, and interviewees at the unit indicated there is convincing research evidence that these materials and methodologies improve student performance in the sciences.

However, a number of factors also weigh against significantly scaling up NSRC, or replicating it in other areas. The most important factor is the perceived futility of attempting to transform curricular education in the United States through any organization on a scale that the Smithsonian could realistically support. One interviewee voiced this opinion in stark terms:

> *Billions and billions of dollars are spent [on K-12 curricular education] every year. Who are we kidding that we are going to come in here with our tea cup and make a difference?*

A factor weighing against the idea of replicating NSRC to increase subject-matter coverage is that part of its success is attributable to the unique circumstances in which it operates. NSRC is a joint operation of the National Academy of Sciences (NAS) and the Smithsonian—an unusual arrangement that certainly contributes to its success in influencing the science curriculum in U.S. schools.[92] It is not clear whether similar partnerships would be necessary to successfully break into other subject-area fields (say, with the National Endowment for the Arts in the area of arts curriculum), whether such partnerships could be struck, and whether they would work over time as well as the NAS partnership.

SCEMS. SCEMS provides a very different and somewhat less formal model for Smithsonian involvement in K-12 education. Rather than seeking to directly influence the curriculum through whole-course curricular materials and strategic partnerships with specific school districts, SCEMS provides a variety of channels through which a wide range of Smithsonian educational materials and resources can be disseminated to teachers and schools for use at individual teachers' discretion.

However, as discussed in Appendix 11 on Structure and Organization, the lack of clarity in its mission has made it difficult for SCEMS to establish itself as a central coordinating unit for K-12 education at the Smithsonian. Thus, while SCEMS is often regarded as the closest thing to a central education office that the Smithsonian has, few interviewees saw it as offering a promising vehicle for substantially increased K-12 activity at the Smithsonian, at least without significant reorganization and strengthening.

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92 The primary benefit here is that NSRC can attach not just one but two deeply respected intellectual brands to its offerings. Another major benefit is access to networks through the two parent organizations. However, in terms of active support, this dual identity also has disadvantages. Interviewees indicated that there is a tendency at each of the parent organizations to see NSRC as primarily belonging to the other, and historically, support from both organizations has waxed and waned as a result of leadership changes.

SEEC. SEEC was also occasionally mentioned as a possible model for formal K-12 education. Although SEEC was created with pre-school and kindergarten audiences in mind, some interviewees argued that its integration of object-based learning into the classroom is applicable at all grade levels. The director of SEEC has been very active as a consultant to school districts throughout the nation on the SEEC model, and the focus in such work has by no means been confined to pre-K education.

However, SEEC is at present a very small organization with limited capacity to influence the wider national educational picture. Some interviewees also raised questions about whether the SEEC model, while unquestionably popular with its constituents, was still at the cutting edge of trends in object-based learning, and whether it could be effectively replicated in places that do not have access to collections and other pedagogical resources on the scale of the Smithsonian.

V. Discussion

Collectively, and even at some individual units, the Smithsonian suffers from a lack of well-defined target audiences. The result is a self-defeating tendency to try to serve multiple audiences (including the general public) without clear priorities or a clear sense of these audiences' needs and expectations. This leads to wide coverage but, generally speaking, little impact on any particular audience. The situation is partly the result of the absence of—or failure to follow through on—strategic goals and priorities that could inform decisions about which audiences to prioritize and how to most effectively serve them. Further, there is a sense that the Smithsonian is moving more slowly than the pace of social and demographic change, which hampers its ability to effectively reach out to new or non-traditional audiences, and that many Smithsonian educational offerings tend to be driven by the interests of staff rather than the needs of well-defined audiences.

While some central units have contributed to effective outreach to national and global audiences that cannot physically visit Smithsonian facilities, most of the museums continue to focus on onsite audiences. Many simply do not feel that they have the resources to conduct extensive outreach while maintaining quality programming for physical visitors. The study team would suggest that if national and global educational outreach is to be a priority for the Institution, this mandate will have to be accompanied either by additional money specifically earmarked for this purpose, or by the creation of effective support mechanisms at the central level, such as infrastructure to support distance learning and related types of outreach, or an effective central marketing unit.

Enormous differences of opinion exist within the Smithsonian over how deeply the Institution should be involved with ongoing efforts to improve K-12 education in the nation's schools. On the one hand are those who argue, "If not the Smithsonian, then who?" On the other are those who point out that the Smithsonian has never had a comparative advantage in expertise pertaining to K-12 curricular education. The study team understands the urgency of the schools question for the future social and economic health of the nation, and believes that the Smithsonian has resources that can contribute to addressing parts of the question. However, it also suggests a need to be realistic about how much influence an organization of the Institution's size and budget, and with the Institution's current areas of strength, can have on the nation's K-12 classrooms.

Appendix 7: Professional Training

Smithsonian units offer a range of professional training opportunities, which fall into two basic categories: academic appointments (of which this report primarily addresses fellowships and internships) and professional training programs.

For some units—particularly some of the science research centers—education is thought of first and foremost in terms of the professional training of specialists. Several of these centers are world leaders in professional training in areas such as astrophysics, tropical and coastal ecology, systematics, mineral sciences, conservation biology, and art conservation. Some interviewees thought that this was too little appreciated in the discussion of the future of education at the Smithsonian:

> *I worry that SI is completely incapable of distinguishing between K-12 and post-graduate education. We do the latter exquisitely. If you want to be one of the best trained astrophysicists in the world, you go to SAO or Caltech. If you want to be the best tropical biologist in the world, you will at some point pass through STRI or maybe La Selva in Costa Rica. If you want to be one of the best zoo vets or conservationists, you will pass through NZP at some point in your career. We don't do anything to promote that.*

I. Academic Appointments

Fellowships[93]

At any time, many people who are not Smithsonian employees are carrying out research here on academic appointments made through a variety of programs, including centrally- and unit-funded fellowships, volunteer programs, and research associate appointments. Of these classes of academic appointments, fellowships are the most overtly educational; they are typically awarded to young researchers in the field whose development can benefit from access to Smithsonian resources such as collections, laboratories, research facilities, databases, and staff.

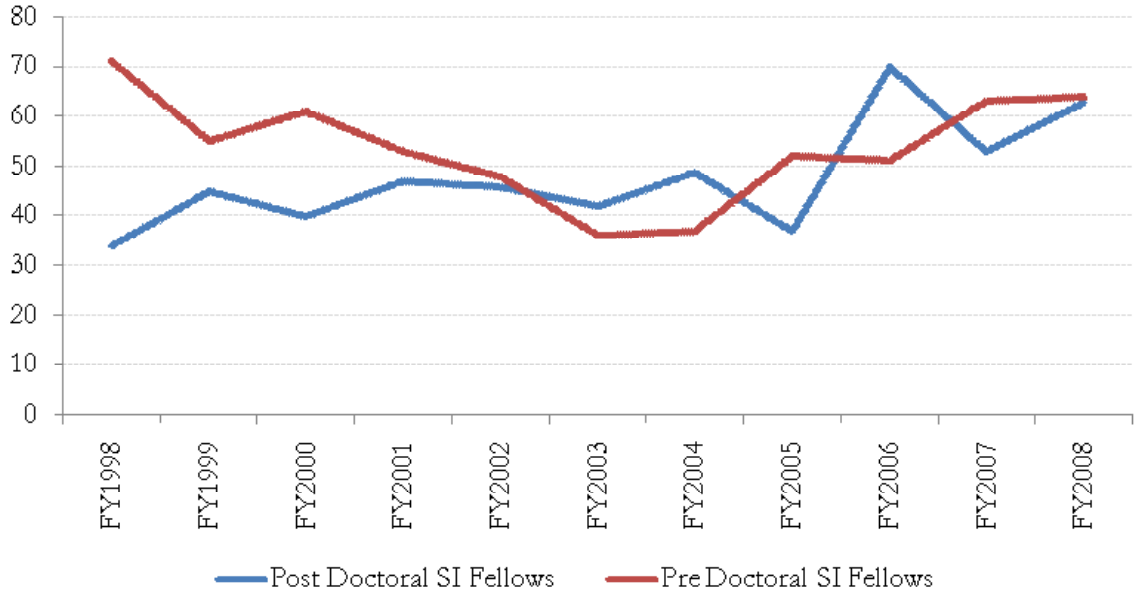
93 This section closely follows a similar section written for a recent OP&A report on interdisciplinary scientific research.

Smithsonian Fellowships[94]

Each year, the Smithsonian awards on average 100 centrally-funded Smithsonian Fellowships—senior post-doctoral, post-doctoral, pre-doctoral, and graduate student—which carry a full-year stipend for post-doctoral Fellows of $40,000 and for pre-doctoral ones of $25,000 (see Figure 7-1).

Figure 7-1. Total Number of Smithsonian Post-Doctoral and Pre-Doctoral Fellowships Awarded, FY 1998 to FY 2008

Source: Office of Fellowships



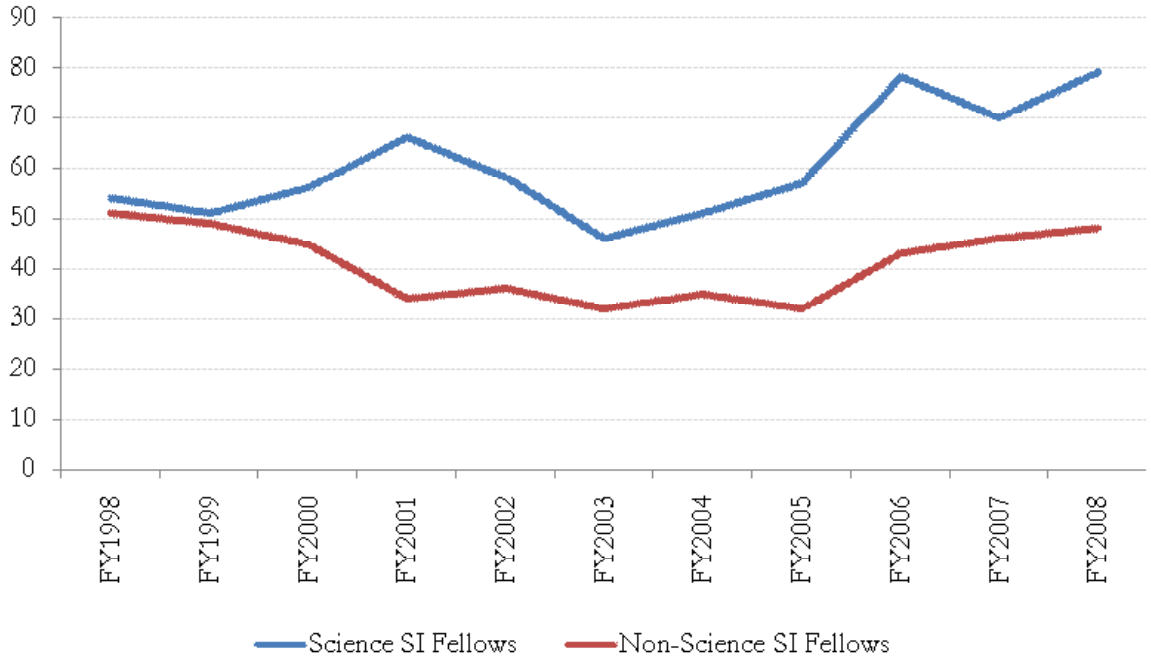
Smithsonian Fellows interviewed for this study said that working with unique collections related to their research and with renowned scholars conducting research in similar areas were the main reasons they applied. Between FY 1998 and 2008, SAO hosted the largest number of Smithsonian Fellows, primarily post-doctoral, followed by NMNH, STRI, NMAH, and SERC. On average, the science units hosted about 50 percent more Smithsonian Fellows each year than non-science units did (see Figure 7-2).[95]

94 "Smithsonian Fellowship" applies to a specific program of centrally funded competitive fellowships administered and awarded through the Office of Fellowships (OF). It is separate from fellowships funded or awarded by a Smithsonian unit (referred to as unit fellowships) or external organization (external fellowships).

95 The ratio of science to non-science unit appointments is even more skewed toward the former when other appointments are considered. The ratio of science to non-science appointments is 8.5 to 1, excluding Smithsonian Fellowships.

Figure 7-2. Total Number of Smithsonian Fellowships Awarded, Science and Non-Science Units, FY 1998 to FY 2008

Source: Office of Fellowships



Because Smithsonian Fellowships, like other fellowships at the Institution, specify that recipients are to pursue their own independent research, their work may or may not be closely connected to the work of the Smithsonian's own researchers. Nevertheless, to judge from the comments of Smithsonian researchers, the opportunities for interaction and discussion about methodologies, technologies, developments, and advances in their fields, perspectives, and so on make the presence of these fellows very beneficial.

In FY 2008, $1,682,000 was allocated for all Smithsonian Fellowships, in science and non-science units; the total for FY 1980-2008 was $29,453,000 (see Figure 7-3). Through FY 2005, funds for Smithsonian Fellowships came from a centrally managed pool. (In FY 2003, no allocation was made to the central pool, and OF cobbled together money from various sources, including the units, to fund a smaller number of Smithsonian Fellowships; for this reason, Figure 7-3 shows $0 in that year.) Beginning in FY 2007, Smithsonian Fellowships were included as a line item in the Institutional budget, using a Trust fund supplement granted by the Acting Secretary. The highest level of allocations for Smithsonian Fellowships (in constant 2008 dollars)[96] occurred between FY 1987 and 1991. Although allocations since FY 2006 have not reached the levels attained in FY 1987-1991, these allocations were

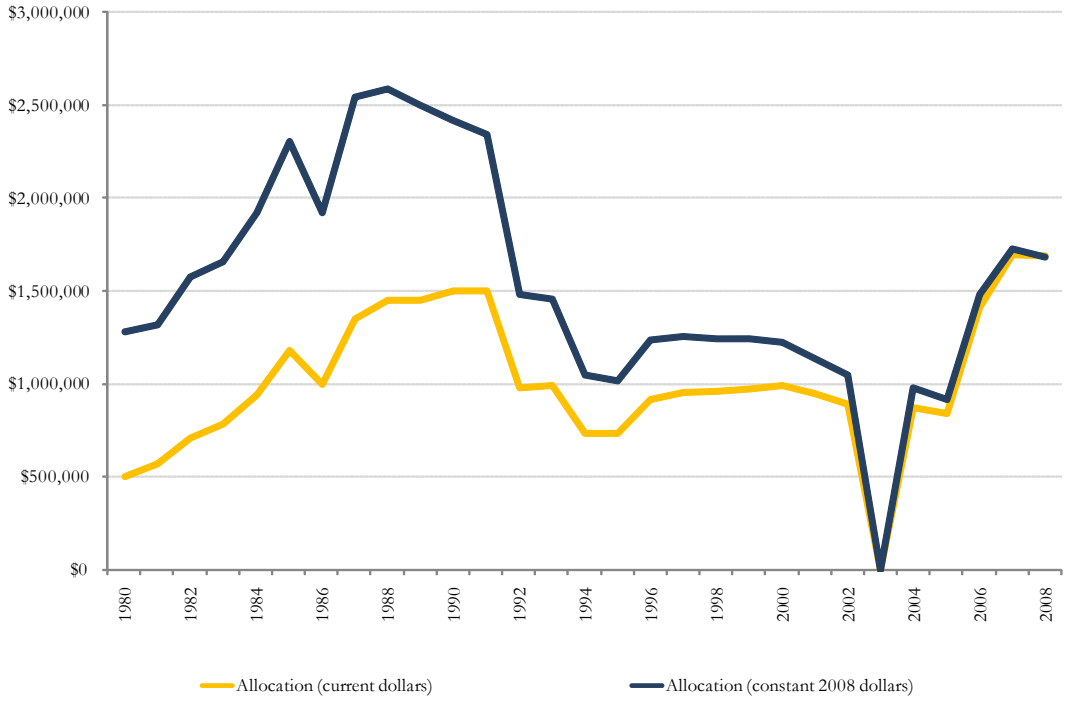
96 That is, adjusted for annual inflation, using 2008 as the base year for comparison.

higher than those made in the previous decade and a half. In constant dollars, the FY 2008 allocation was approximately three fifths of the peak allocation in FY 1988.

OF pays the stipends for Smithsonian Fellowships (as well as for stipend internships and a small number of other fellowships; it obligates the funds for fellowships paid directly by Smithsonian units).

Figure 7-3. Allocations for Smithsonian Fellowships, All Units FY 1980–2008 (Current and constant 2008 dollars)

Source: Office of Fellowships



Most Smithsonian Fellowships run from several months to one year, with a few awards running two or three years, especially in the science units. A number of interviewees thought the one-year term was a problem, at least for science fellowships. Not only does it take time to start up a research project, but the fellow quickly has to begin thinking about the end of that year and applying for jobs or other fellowships. One interviewee said, "You spend most of your waking hours applying for jobs or thinking of some other post-doc." Another stated:

> *Post-docs would be a lot more productive with at least 24 months. … There is definitely an efficiency gain from a longer post-doc period. Even if there are fewer awards given, I think 24 months should become the minimum.*

Applications for Smithsonian fellowships are submitted through OF, which distributes them to 12 discipline- or unit-based review committees composed of Smithsonian scholars. As of January 2009, eight of the committees dealt with scientific research: anthropology; earth sciences; evolutionary and systematic biology; NZP; SERC; STRI; molecular evolution; and conservation. SAO administers its own program. The other four, non-science committees were history of science and technology; history of art; social and cultural history; and Latino studies. The total Smithsonian Fellowships allocation for each year is divided across the 12 committees in proportion to the applications assigned to each. In effect, this means that Smithsonian Fellowship funds are allocated based on an equity principle, rather than Institutional priorities. The committees are free to allocate the funds they receive across their applications as they wish.

One problem with the award process noted by interviewees is that there is no interdisciplinary review committee to look at proposals that involve more than one discipline or more than one Smithsonian unit, and these types of applications rarely get funded. The discipline-specific review committees generally resist accepting interdisciplinary proposals or proposals for education research per se (as opposed to traditional scientific and scholarly disciplines). In part, this is because they do not have the relevant membership to judge the quality of such applications; and in part, according to interviewees, the committees are loath to relinquish a discipline-based position to someone who might not spend full-time in one department or unit.

Unit Fellowships

Units offer their own fellowships unconnected to the central Smithsonian Fellowships program, as well as other academic appointments with an educational thrust—such as "visiting students," who are invited by a host unit to conduct research using unit resources under the supervision of its researchers.

The details of unit-based fellowships, which may or may not offer stipends, vary by unit and by individual fellowship. Generally, appointments are made competitively, with review of the applications conducted by staff in the area where fellows' research is to be carried out. Post-doctoral fellowships run up to three years; pre-doctoral fellowships usually cannot exceed five years.

Data Limitations

There is no single database for Smithsonian academic appointments. A few years ago, OCIO, in cooperation with SCEMS and OF, began to investigate web-based applications that could

facilitate the application process for fellowships and internships. The new system, SOLAA (Smithsonian Online Academic Appointments System) went active in November 2008. At the time of this writing, SOLAA was used to post information about, and receive applications for, fellowships and internships offered by fewer than 25 Smithsonian programs in an even smaller number of units. No unit currently uses the system to process appointments for "designated" fellowships, defined by SOLAA as unit-paid and non-competitive. When SOLAA is fully operational, and assuming all Smithsonian units participate, OCIO will be able to generate Microsoft structured query language (SQL) reports providing the number of academic appointments at any time. As presently configured and planned, however, SOLAA combines designated fellowships and other academic appointments such as research associates and visiting scholars, and cannot provide disaggregated figures.

The Value of Fellowships

In addition to serving as a valuable professional development experience for the fellows themselves, fellows provide considerable benefits to the Smithsonian. As noted above, many interviewees strongly emphasized the importance of a continual influx of new people with different perspectives, ideas, knowledge, and skills. Fellows who are still working on their doctorate or have completed it in the recent past can bring in valuable information on the directions in which their field is moving. According to one Smithsonian scientist:

> *Post-docs and pre-docs are a great vehicle for both getting people juiced up and going in new directions, and we need much more of that. … [They serve] as a center that draws people to both the resources and the expertise we have here.*

Another noted:

> *For me, the challenge is continually looking at what the cutting edges are. I bring in people to learn about new things. … It's also a matter of trying to see where we're going.*

Interviewees singled out post-docs as being particularly vital to the Smithsonian's scientific research function, whether they come to work on their own projects or Smithsonian scientists' projects. In an article in *Nature*, Vastag (2008) describes a study of six NSF-funded interdisciplinary centers in which interviewees touted a range of benefits they derived from post-docs, including support for research, catalyzing collaboration, and access to technical expertise not available on staff.

Interviewees had widely varying opinions on whether post-docs are adequately supported by the Smithsonian. One interviewee described the level of support for post-docs as "pathetic,"

while others thought that, at least at their units, the commitment to post-docs was very strong.

II. Internships

As noted in Appendix 3, A Brief History of Education at the Smithsonian, students, with various levels of academic training, have worked alongside Smithsonian staff throughout the Institution's history. Most often, they were recruited to work on specific scientific projects, and information about their activities and numbers is quite fragmentary. It was only during the Institution's major growth under Secretary Ripley (1964-1984) that formal units were established to register, process, and assign students. Today, overall coordination of the Smithsonian's internship program is divided between OF (for appointments with stipends) and SCEMS (for non-stipend appointments).

The rationale for internships is to allow a diverse group of undergraduate students (as well as some graduate students and, very occasionally, high-school students) with varied interests, career goals, strengths, and skills to assist and learn from the Smithsonian's curators, researchers, and other professional staff. As defined in Smithsonian Directive 709 (Smithsonian Institution Internships) of March 27, 2006:

> *An internship at the Smithsonian Institution is a pre-arranged, structured learning experience that takes place within a specific time frame. The experience should be relevant to the stated academic and/or professional goals of the intern and to the disciplines represented at the Institution.*
>
> *Through participation in an internship, the intern should gain an understanding of the goals and functions of the host Smithsonian unit. In addition, the intern should develop a deeper understanding of museology in general, as well as the professions, academic disciplines, and administrative functions represented at the Smithsonian.*

Whether paid or unpaid, internships differ from volunteer positions or fellowships, which are defined, respectively, in SD 828 (Visitor Information and Associates' Reception Center) and SD 701 (Smithsonian Institution Academic Appointments with Stipend). At the core of an internship is its instructional nature, a tutorial relationship within a unit, and a specified duration. However, while internships are formally defined as professional and academic learning experiences, staff sometimes use interns for tasks with little potential for fostering their professional or academic growth (such as filing, data entry, reception work, and so on), often to address resource constraints.

Interns are assigned to supervisors in the individual units who are responsible for relating work assignments to students' academic goals. In some instances, interns receive academic credit. Internships vary in duration from two months to one year, usually with a minimum of 20 hours per week. Under special circumstances, internships of a shorter duration (as little as four weeks) have been arranged.

While the majority of internships are unpaid, about one third carry stipends. Generally, the science units have more funds for interns because of their grants. In the past decade (1998-2008), the science units excluding STRI (that is, MCI, NASM [including its Center for Earth and Planetary Studies, or CEPS], NMNH, NZP, SAO, and SERC) collectively averaged about 110 funded internships per year. STRI's program for funded interns is the Institution's largest, and it has grown significantly since 2005, from 78 to 126 funded interns. For the non-science units—all the art, history, culture, and administrative units—the average (starting in 1998) is a combined 140 funded internships each year. The units with larger programs (CHNDM, NMAH, and NASM[97] excluding CEPS) fund over a dozen each year.

In the last few years, more than 900 students annually have participated in internships throughout the Institution, and applications were received from at least three times that number. Overall, the number of interns, both paid and unpaid, has been increasing. During the last decade, it went from 656 (in FY 1999) to 1,152 (in FY 2008).

It is not clear to what extent interns are used on education-related activities and projects per se. SCEMS hosts about 10 interns a year, and likely would take more but for space considerations. A review by SCEMS of the registration forms for the past year suggests that about 5 percent of all interns work on education activities or projects. For example, NPM's education department offers internships targeted at educators-in-the-making, which allows current university students to gain experience in research, development, and testing of educational materials and activities.

Some fellows and interns complain that, because of their dispersal throughout the Institution, they feel somewhat isolated from their peers at other units. To address such concerns, the SCEMS-managed, non-stipend internship program has made use of Facebook to facilitate connections with and among the interns. Further, during the summer, when more than 60 percent of the interns are at the Smithsonian, SCEMS schedules social events such as professional networking receptions, ice cream socials, field trips, and informal presentations by Smithsonian staff.

97 As a result of a recent re-organization, NASM is under the Office of the Under Secretary for Science and is considered a science unit. The data used for this report, however, mostly cover a period when NASM was considered a history/culture unit.

Smithsonian internships are typically a valuable educational experience for recipients. However, data limitations make it difficult to get an accurate picture of how Smithsonian internships affect lives and careers. In an attempt to gain insights into this question, ISO[98] undertook two follow-up studies with interns. The first involved 1994 interns (Bickford and Doering 1995); however, it was conducted too soon after the internship experience to assess career impact. The second study (DiGiacomo and Doering 1999) tried to contact about 5,400 interns who had been at the Smithsonian between 1990 and 1997, of whom nearly 1,800 responded. About two thirds of them were working full-time at the time of the survey, and of these, half were doing work, or were in a work setting, similar to that of their internship. The study estimated that about 10 percent were working in a museum, historical site, science center, or zoo; 5 percent in a college or university; and 3 percent in a firm with which museums contract.

III. Development Opportunities for Professionals

The Smithsonian offers training and development opportunities for professionals in a range of areas, sometimes for a fee; scholarship money is occasionally available. Teachers are an important audience for these programs; other audiences include scientific researchers and technicians, conservation professionals, and museum professionals.

Teacher Training

Professional training for K-12 teachers takes a variety of forms across Smithsonian units—in person and web-based, free and fee-based, for credit and not. Some programs aim only to inform teachers about Smithsonian educational offerings; others seek not only to inform teachers about such offerings, but also to provide guidance on how to use them effectively in the classroom or on field trips; still others aim to improve teaching skills, deepen teachers' knowledge of a subject area, or introduce teachers to specific technologies and teaching methodologies, using Smithsonian education offerings and expertise as delivery vehicles.

Smithsonian teacher training programs are typically highly hands-on and interactive. They often involve elements such as collaborative projects among participants, hands-on exploration of teaching technologies, writing standards-based lesson plans, discussions with noted practitioners in relevant fields, and exploration of Smithsonian facilities.

The following are some notable teacher training programs offered at Smithsonian units; this list is by no means exhaustive.

98 Predecessor of OP&A.

◊ NSRC offers a series of week-long teacher professional development workshops as part of its integrated effort to promote science education curriculum reform. These *Smithsonian Science Education Academies for Teachers* are offered in the Washington, D.C. area but can also be conducted offsite for state or school-district partners. The workshops showcase interdisciplinary NSRC materials and techniques, all of which align with state standards of learning. Scientists and educators from a number of Smithsonian units (such as NASM, NMNH, NZP, and SERC) and external organizations assist in hosting the workshops. The 2009 workshop themes include:

» *Biodiversity* (for middle- and high-school life science teachers);

» *The Earth's History and Global Change* (for middle- and high-school earth science teachers);

» *Energy: Past, Present, and Future* (for middle- and high-school physical science teachers); and

» *Ecological Field Studies* (for middle- and high-school life and Earth science teachers).

◊ SCEMS offers a number of largely informal professional development opportunities for teachers, including

» Teacher-focused sessions of its new online conference series (topics have included Lincoln and climate change);

» The aforementioned program to recruit Teachers of the Year to become *Smithsonian Teacher Ambassadors* in their home states; and

» *Teachers' Night* events in Washington, D.C. and other cities that introduce teachers to the huge range of classroom resources offered by Smithsonian units.

◊ A number of Smithsonian units including SCEMS, TSA, NMAH, SAAM, and NPG have provided specialized professional development services to partners (typically school districts) through U.S. Department of Education Teaching American History (TAH) grants.[99] The specific parameters of such training are worked out with these partners to address their particular grant structures and goals. The programs have been conducted onsite and offsite, and have ranged from one-hour presentations to multi-day institutes, with reimbursement from grant monies varying accordingly.

99 A school partner can apply for a TAH grant with a specific Smithsonian programmatic unit if that unit can adequately provide the required resources, or it can go through a central unit such as SCEMS to access resources from a range of units.

◊ NASM and UHC offer several options for teacher workshops, with fees based on the number of participants, topic, and length of the training. Scheduling can be tailored to the needs of participating organizations. All workshops follow national education standards and can be adapted for local curricula; in-service and graduate credit can be arranged. The workshops focus on both teaching skills and subject-matter content, and are geared for teachers of specific grade levels. Among those currently offered are "Air Mail to Airlines" (grades 3-5), "Black Wings" (grades 6-10), "Exploring the Planets" (grades 3-5 or 6-9), "Explore the Universe" (grades 5-8 or 9-12), "How Things Fly" (grades 6-10), "Reflections on Earth" (grades 9-12), "Problem Solving with the Wright Brothers"(grades 3-8), and "Teaching with Primary Sources" (grades 4-12).

◊ SAAM offers several workshops that can be tailored to the needs of participating organizations. Some carry a fee and some are free; some are provided onsite and others in locations as distant as New Orleans. Customized training and online workshops can also be arranged. A special focus of SAAM's professional development efforts is training teachers to use primary sources in the classroom, with a particular emphasis on artwork as a primary source. Examples of programs with this focus are the *Clarice Smith National Teacher Institutes* and *Teaching with Documents and Works of Art: An Integrated Approach* (a collaborative effort with the National Archives and Records Administration and National Council for Social Studies), both of which draw participants from across the nation. SAAM also offers an online newsletter for teachers, *Classroom Connections*.

◊ CHNDM provides extensive professional development opportunities for teachers interested in learning to integrate design, design thinking, and visual literacy into their classrooms. Participating educators typically are expected to create standards-based lesson plans, which are then made available online via CHNDM's Educator Resource Center. Some CHNDM teacher training programs are conducted offsite; for example, a week-long *Cooper-Hewitt Design Institute* was recently held in Atlanta, Georgia for teachers from that region.

◊ NZP's teacher training opportunities include the *Ecological Field Studies Academy,* a three-credit course (with credits conferred through program partner Virginia Commonwealth University) at a cost of $1,700; teachers learn field study techniques and how to apply them in the classroom. The *Education Teacher Fellowship* is an 8-12 week program at the Zoo's Conservation and Research Center (CRC) campus in Front Royal, Virginia, where teachers sharpen their skills in developing lesson plans and activities for their science students. The fellowships offer a stipend and housing at the CRC campus.

- ◊ NMNH offers workshops and volunteer opportunities for professional development for K-12 science teachers. Scheduled workshops are typically free, last one day, and focus on integrating current NMNH exhibitions into classroom lesson plans. General professional development courses are also available in conjunction with NSRC; these follow national science education standards and are tailored to the needs of the trainee group. There are three levels of such courses: introductory, intermediate, and advanced. They range in length from one to three days, and prices run from $1,800 to $5,400.

- ◊ NPG has scheduled teacher workshops, almost always for free. The aim is to help teachers integrate portraiture and NPG exhibition materials into their classes. The workshops are generally three hours in length in the evenings and are geared toward teachers at all levels.

- ◊ The science education department of SAO provides a series of online workshops for K-12 teachers, developed in collaboration with the Annenberg Channel. A professional development project entitled *Beyond the Solar System* is also available online and offers a forum for sharing resources and insights on student learning in astrophysics. There is no fee, but registration is required to participate.

- ◊ SERC conducts professional development workshops for K-12 teachers to hone their skills in communicating scientific findings to their students. They generally take place onsite at SERC's Reed Education Center, but can also be offered at eligible area schools. Volunteer positions at the SERC labs enable teachers to keep abreast on sampling and field work techniques.

The study team found that teachers are an important audience for Smithsonian educators, who see their professional development as an effective way to leverage Smithsonian education resources to reach large numbers of students. As one interviewee put it:

> *[Because we are so resource-constrained,] we feel that the best way to impact audiences and the public is by educating the educators, and having that cascade of learning come down through the system. It's much, much more strategic and effective for us to be working upstream in the supply chain, rather than downstream.*

Some interviewees thought that considerable opportunities existed for the expansion and systematization of teacher training at the Smithsonian. As mentioned in Appendix 11 on Structure and Organization, a number of interviewees suggested that administering and systematizing Smithsonian-branded teacher training programs might be a logical task for a central education unit. A few interviewees even suggested that teacher training might become

a valuable revenue-generating function for the Smithsonian, as discussed in Appendix 13 on Financial Resources.

Other Professional Training Programs[100]

Courses for Mid-Career Professionals

At most units, professional development of specialist practitioners takes place primarily through the fellowships and other research appointments, and, in some cases, through formal graduate (and occasionally undergraduate) courses. However, some Smithsonian science units offer fee-based courses (sometimes defrayed through grants that fund stipends and scholarships) for practicing professionals. For example:

- ◊ NZP's CRC hosts many scientists and technicians from developing countries for multi-week courses in skills related to conservation science and management, and NZP staff offer training in host countries as well. NZP has courses specifically designed for policy makers.
- ◊ MCI is one of the few organizations with the ability to offer a variety of training in conservation techniques, and it did so prior to 2004. However, it no longer offers courses.

However, such fee-based courses are the exception rather than the rule.

NSRC Capacity-Building Workshops

While perhaps not quite fitting the definition of "professional development," NSRC runs strategic planning workshops for educational leaders of school districts, as well as awareness-building sessions that aim to draw business, nonprofit, government, and civic leaders into the reform of science education in their communities.

Programs for Museum Professionals

In the past, the Smithsonian sought to serve as a resource for the development of museum professionals—particularly those from underserved populations and smaller local and regional organizations—through training and other channels. However, its museum studies offerings have contracted significantly in recent years. One interviewee recounted the rise and fall of a central museum studies office at the Smithsonian that is now a part of SCEMS:

100 Although not part of professional training per se, it is worth noting that a number of Smithsonian curators and scientists have teaching positions, such as adjunct professorships, at a number of universities.

In previous administrations there was a very strong emphasis on the Smithsonian as a sort of service organization, [with] very strong responsibilities for national and international assistance to the [museum] profession. The charge was to increase the capabilities of museums in the United States, and the rationale was that the money comes from Congress, and people in Congress like to ask, "What's the Smithsonian doing for me in Nevada or Montana or Iowa?" That was one thing they could say that we're doing for you.

A lot of the museum studies training also grew out of the "great count."[101] *… Congress gave the Smithsonian extra money for an inventory project, which was the beginning of computerization of collections, and so forth. In the course of finding out how many things it had, the Smithsonian developed new ideas and methodologies that addressed concerns all museums had. So the point became that since Congress was giving the Smithsonian this money to count things, and it's learning all about this process, that learning should be transferred to other museums. Collections management and care were a very major part of training in the old days.*

As new Secretaries came along, they didn't have that [service] focus. And they didn't see the Smithsonian as having an obligation to be a leader in the museum profession. So that's why [the museum studies office] just collapsed. It used to have 25 people, and now it has maybe two, depending on how you count them.

A number of training programs for museum professionals are still offered, including some through the much-diminished museum studies division of SCEMS. Others include a partnership with George Washington University's Museum Studies Program; courses available through the Community and Constituent Services Department of NMAI; and SLC's summer Latino Museum Studies Program, which brings a small number (about 15-20) of specialists in Latino-oriented programming to the Smithsonian for two weeks of workshops, tours, and presentations, followed by a two-week practicum in one of the units.

There has been considerable discussion among Smithsonian staff about whether the Smithsonian should reinvigorate its commitment to the professional development of museum professionals. As one SCEMS interviewee noted:

Museum professionals expect the Smithsonian to play a leadership role in the profession. We constantly get requests from people who say, "I'd like to come to the Smithsonian. What training programs do you have?"

101 In 1978, Congress required that the Smithsonian complete an inventory of its collections; the process was called "the great count."

Another interviewee offered a novel idea for augmenting Smithsonian-branded museum professional training:

> *I would love to see us set up a program [where] people who are retiring from the Smithsonian with all this expertise would go out and spend the year or something, with pay, sharing what they have learned here at the Smithsonian with a museum somewhere else in the world—sitting down and working with people. I think it would be great for them, the last two years before they retire … I just think we have a wealth of experience in museums, and we should be going out [and] teaching.*

III. Discussion

Fellows and interns are valuable complements to Smithsonian staff, not least because they provide an infusion of new knowledge, skills, approaches, and ideas. Conversely, Smithsonian fellowships and internships are typically an extremely valuable educational experience for recipients. However, data limitations make it difficult to get an accurate picture of how Smithsonian fellowships and internships affect the lives and careers of the people who receive them.

There may be potential for greater use of fellowships and internships related to education (as opposed to discipline-specific research). To realize these benefits, the Smithsonian will need to address limitations in funding and space, and a selection process that does not accommodate education-related research proposals.

Professional training opportunities for teachers at the Smithsonian are numerous but fragmented. Those for museum professionals are somewhat less numerous and are similarly uncoordinated across the units that provide them. They are considerably shrunken from the past, when the Institution's leadership placed more emphasis on the Smithsonian's service function to the national museum community. NZP provides a number of fee-based courses for mid-career professionals in conservation biology-related areas, but professional development courses other than those for teachers and museum professionals appear to be rare at other units.

There is likely considerable unmet demand for the kind of professional training the Smithsonian can provide, although resource constraints might pose obstacles to expanding these offerings. Online training offers a promising opportunity for increasing access. Charging fees for professional training may be a way of defraying some of its costs, although the potential for net generation of revenue through this channel is unclear.

Appendix 8: Organizational Culture

The organizational culture of the Smithsonian certainly has much to recommend it; staff are by and large passionate about their work, dedicated to the pursuit of excellence in their areas of expertise, and proud to be a part of the Institution. However, aspects of organizational culture, both of the Smithsonian as a whole and of the education function within it, also emerged as a negative force with respect to how education is perceived at the Smithsonian and how educators relate to other staff, particularly research and exhibition staff. It was also sometimes cited as an obstacle to creativity, innovation, and collaboration among units.

On the other hand, cultural attitudes in these areas have already shifted in a positive direction at some units, and there is a clear sense that, overall, the Smithsonian's organizational culture is evolving in promising ways.

The Status of Education

Despite the mantra that "the Smithsonian is all about education," a common refrain among interviewees was that the educational function, and the staff associated with it, are often not highly valued by management, research staff, and fellow professionals. This status issue has several dimensions and ramifications.

Education as an "Add On"

Several interviewees suggested that collections, research, and exhibitions are generally the Institution's priorities, and that educational offerings are often regarded as a kind of supplementary "add on." As one interviewee put it:

> *It's the culture of the organization. Research and exhibitions are more important than outreach or diffusion. … Is it too much to ask the Secretary to change the Smithsonian's priorities?*

Others agreed in slightly different words:

> *Education is not in the forefront of some of the museums, because that's not their focus. Their focus is on the objects, the exhibitions, and their research.*

> *At its best, "increase" and "diffusion" are equal—you should be putting 50 percent of your resources into education. And [at the Smithsonian overall,] we don't.*

As evidence, a number of interviewees pointed to the way that educators were often brought into exhibition development late in the process and asked to work within a framework established by others:

> *Education philosophy, education programs, education products, the ways in which we go about helping people access the messages—those have been seen as, "Okay, we will add that on. We will build this whole thing out and then add that education thing on."*

Indeed, overcoming indifference or resistance to the incorporation of educational thinking and educators into the exhibition development process was frequently seen as a major cultural challenge at Smithsonian units. Many interviewees noted that exhibition development teams at their units did not regularly include educators; that educators' input was not taken seriously by curators and exhibition designers; and that educators were brought in as "an afterthought … as if education was tacked on at the end." At that point, there is little educators can do to address the fundamental issues of accessibility with which they are typically concerned, or to seamlessly integrate complementary programming into the project:

> *[If you are asked] to come in after an exhibit is finished and "make something educational out of it," you don't really have a lot of options.*

As for the point that even when educators are involved, their input is not necessarily influential or appreciated, one educator related a telling anecdote:

> *I got some labels for a show that were far too academic and difficult … and I made a lot of changes. I did not get the labels for the next three shows. Right now I'm getting them, but at a point where to change them would be problematic and expensive.*

According to one interviewee, the ideal arrangement would be:

> *… Five equal players at the table, including an educator [plus a designer, curator, project manager, and writer.] … For me, the team development process is working really well when someone says "Whose idea was this?" and nobody remembers, because it evolved out of a discussion. Ideally that happens the whole way through.*

At most Smithsonian units, as well as in the museum field more generally, the situation is evolving toward a more seamless integration of the educational perspective into exhibition development. One non-educator interviewee applauded this incipient trend, and discussed some of its likely benefits:

Convincing scientists and curators—the content people—that education should be incorporated from the get-go [is] a critical first step. … The exhibits will be … designed so that they address not just the content, but how that content reaches the general public.

Another interviewee noted:

We have five or six projects going [now] where scientists and [educators] are sitting at the table. It's a new expectation that [educators] are part of it, and that they will review everything.

Some people also talked about an increasing push on the part of their unit leadership to close the gulf across departments and functions:

There has been more "Listen, we have to work together." You really come up with the best product when you have scientists sitting down with exhibit developers and designers and educators.

At some units, this evolution is very advanced. For example, one educator told the study team:

I do not feel "second fiddle" at all. … To the curators' credit, we will get requests [such as] "I've got this exhibition coming up in two years; I want to talk to you about some initial ideas for programming, or let you know what it's about." So I think we're on their radar and they do understand the importance of [education].

Another interviewee described how educators, exhibition developers, and curators had an excellent working relationship at her museum, and noted that all exhibitions were developed through a true team effort that incorporated voices from all three perspectives. NMAH now has an educator on all exhibition teams as a matter of policy:

It's not just an add-on at the end. We're shaping [exhibitions] according to national standards and things we know from survey work, so it is really targeted for the visitors from the very beginning. You don't have curators writing for curators. It's made a huge difference. It's because of that that the exhibitions are really becoming a lot more educational and accessible. They are more open to people with different learning styles. An exhibit here is a totally different experience from what it was five or ten years ago.

Curator and Researcher Attitudes

The attitude of some researchers and curators toward the education function was a frequent subject of discussion in interviews. Educators felt they were not seen by research staff as true professionals, with something important to contribute. One interviewee who had come to the Smithsonian recently had immediately picked up on this undertone:

> *There's this disrespect around the Institution. [Educators] don't necessarily have a great reputation.*

Others made similar points in different words:

> *We're looked at as those people who don't do real work—like we're down here just playing with kids. We don't do real science, we aren't hard-core science people—we're just playing with kids.*

> *To the extent non-educators perceive there to be a field of educational expertise, a lot of curators and directors write it off as just the K-12 audience. They just bring in 3rd graders and show them around, and it's not very important. But in fact, there's a lot that goes into understanding how people learn, stages of learning development, and how you reach different audiences. I don't think curators necessarily understand what you have to do to make a high school program successful, versus something for a tour group, versus something for adults. … So I think it gets written off a lot.*

Many interviewees suggested the tension between content specialists and educators has deep roots in the academic culture of the former:

> *[It] is very much a culture of continually defending your dissertation. … In academia, there's always a winner and a loser—I'm the one who gets the chair or the promotion or the research money, and you don't. … You definitely see that here at the Smithsonian; [the curators] are very hesitant to let anyone touch their idea or their writing to make it accessible, because they are afraid of the peer group saying, "That's not written at the PhD level!"*

> *[Curators have] academic goals: setting up centers for scholars, scholarship, publications. Those seem to be the primary goals.*

Some educators interviewed for this study also suggested that curators and scientists are less sensitive to the needs of ordinary visitors, and that they tend to reflexively reject advice from educators that contradicts what content specialists perceive to be important:

[Educators ask] certain questions from the visitors' perspective. But I have had several scientists say to me, "I don't think that way."

[The scientists] are not really people-oriented, and a lot of them are not willing to support our education programs. They'll say outright, "This is a stupid program; we don't want to support [a program for kids]."

However, while educators tended to see the cultural tension between the education and curatorial/research sides of the house as originating primarily from the latter, some interviewees thought that the education side shared some of the blame. For example, because there is no clear, agreed-upon definition for "education" at the Smithsonian, the value added by educators is sometimes unclear. As discussed in Appendix 14, Human Resources, the professional credentials and required skills and experience for a Smithsonian "educator" are neither clear nor consistent across units. One interviewee described the situation in these words:

Educators at the Smithsonian are at a loss to define what it is they do. That hurts them in an academically-oriented institution. … Educators have trouble demonstrating how they're qualified … [because] there's no agreement regarding the job description, expertise, qualifications of educators. What should it be? … These problems stem from the lack of clarity about the purpose of education at the Smithsonian.

The same interviewee suggested that, for better or worse, a professionally-credentialed corps of educators might make a difference:

[Education here has] a credibility problem. At the National Gallery, educators have PhDs. … A psychologist friend of mine told me that you have to have a PhD, or scientists don't take you seriously. How many educators at the Smithsonian have a PhD? Maybe one or two. … A greater degree of professionalism is needed, especially in units with many scholars. Educators get no respect in that environment.

Another interviewee echoed the view that increasing professionalism in the education field may reduce the cultural tensions referred to above:

[The field is] changing. You can now get graduate degrees in education. In that respect, I think it's professionalizing itself.

In any case, many interviewees called for better communications and a more constructive relationship between educators and content specialists. One described how this could be mutually beneficial:

> *Educators are living in isolation, which is not good for them. They would have more power if they sat down with the academic community of the Institution. … Educators would see their colleagues in other positions in a different light. … [And the educators themselves] wouldn't be seen as the people walking into an exhibition planning session representing the K-12 audiences, which is how they are perceived now.*

Another had this suggestion for improving the climate:

> *I would like to have every [curator] accept and respect the responsibility they have for outreach. They don't all, by any means. I would like every [curator] who goes to work in public programs of any sort to have on-the-job training so they learn about what it means to be an exhibit designer or an exhibit writer or all of those things. And the reverse. So we can build teams of people who can respect each other for what they do.*

Autonomy and Turf Protection

Apart from the professional status of educators and education, interviewees discussed a number of characteristics of the Smithsonian's organizational culture that contribute to the general problems with education discussed in this report, such as the lack of coordination of individual educational efforts and the failure to leverage the Institution's limited educational resources for the benefit of the whole.

Autonomy

A number of interviewees cited the strong emphasis on unit autonomy, which parallels what the study team has found in other studies of the Smithsonian. Said one interviewee:

> *[People are] only concerned about their own unit, and not about the Smithsonian as a whole. There's no sense of "wholeness" here. … Some people would battle that to the bitter end.*

Several aspects of this mindset were discussed. One was the emphasis each unit places on what makes it different from others, rather than on what they share:

Every museum is different; we're a bunch of anarchists.

It's hard to come up with a general system that applies to everybody, because everyone says they're different.

This perception of their own unit's uniqueness made some staff loath to adopt a pan-Institutional perspective on strategic educational priorities:

What is the need for a Smithsonian education initiative that would be different from … the initiatives of the individual units? I'm not clear what that would be, because our disciplines are so different.

Other interviewees talked about the difficulty of reaching agreement on even the most fundamental matters across the units:

[When we try to collaborate] you run into all the issues of what standards we're all going to agree to, and who's going to be in charge, and do we like who's in charge. It tends to break down quickly. … It just doesn't get very much farther than that.

A number of interviewees called for a shift away from the unit-centric attitude:

People really need to get away from this mentality of "me, my unit, my museum" and look at themselves as part of the Smithsonian Institution. You're not the American History Museum, you're the American History Museum at the Smithsonian, and [that is] both your responsibility and your strength. Actually, American History is the wrong unit to pick on, because they're very collaborative, but the point is that the strength of the American History Museum is the Smithsonian, and the strength of the Smithsonian is the American History Museum. It's a symbiotic relationship, so we can't lose sight of that.

In this connection, one person gave the example of trying to get a pan-Institutional collaborative project off the ground:

More people come to work here every day trying to figure out how to make life easier for themselves, rather than how to make life easier for the public. … I went to some of those [project] meetings, and everyone was like "Me, me, me. It has to be for me." Someone has to put their foot down.

Yet another interviewee talked about the lack of common definitions and processes for educational offerings:

If you ask [a unit] to co-produce a program like a family day, that becomes very difficult. Everyone's processes are different—not only administrative processes, but the concept of what a "family day" is differs from unit to unit: how many activities, what kinds of activities, etc. … I might be thinking of a day with 8-10 simultaneous activities, a story time, and interactive music and dance—some very energetic elements. The other person might be thinking 4-5 activities and a story time is a family day.

Finally, several interviewees mentioned the lack of enthusiasm for initiatives emanating from the central administration, which would presumably be setting the directions for any pan-Institutional education strategy:

[We have been] struggling with budgets that haven't kept pace with inflation for such a long time, so people have grown instinctively wary of good ideas that come from somewhere else, maybe the center. … They don't want somebody in the Castle telling them what to do. The reputation of the Castle out in the trenches is not high—let's put it that way.

Turf

Related to the issue of autonomy is the matter of "turf protection," which was discussed both in terms of units and of functions and divisions within them. One interviewee commented:

While we talk about collaboration at the Smithsonian, sometimes there isn't a lot of follow-through, because a lot of elements resist it. The Smithsonian is very insular; all the units live in their own silos and have their own turf and their own territory.

Another commented on the "inconceivably hostile" reception he witnessed to a suggestion that the units cross-market with signage promoting other units' exhibitions and offerings. Another noted drily:

I'm not the director here, but my sense of it is that we can't just go off and work on somebody else's exhibit.

The issue of turf emerges in collaborative efforts when it comes to questions such as who finds the funds, who provides the labor, who gets recognition, where the resulting program or exhibition is offered, and so forth. An educator expressed frustration about the underlying mentality:

This seems to be very drastic at the Smithsonian; people don't seem to be able to come together and be okay with sharing not only responsibilities, but recognition.

Another had a similar observation:

I think that our director would like to see our name first, rather than our name equal or our name inserted alphabetically.

However, a number of interviewees suggested that such turf issues were less the result of individual dispositions than of the current way in which incentives for staff are structured:

It's about your own unit because that's what you're held accountable for. … Smithsonian people [from different functions and units] like each other personally, and enjoy working together. It works informally. … But it always comes back to incentives. People like the idea of collaboration in theory, but in practice they need incentives.

[You have] fiefdoms, because that's way the Institution is set up. Everybody has their own budget line for this and that. So when you get ready to work with somebody, the first questions are, "Who's paying for this? … How much of my time is it, and how much of your time is it?"

The struggle for resources among units was also sometimes cited as a cause of insularity and turfism. For example, a curator noted:

One [roadblock] clearly is who gets the credit. And credit really matters. It's not so much [that it matters to] the individual people who are working on it, but we want to attract donors—we've **got** *to attract donors… It would be very naïve to say "Sure, we'll let all our staff work on [someone else's show]; we don't have any needs ourselves." We do have real needs.*

Another interviewee who works in a development capacity made a similar point:

Because every museum has to raise its own funds to keep alive, and because of the dwindling monies that the Institution gets from the Federal government … it just makes it a really competitive environment.

Practical fears about budgets and job security were also mentioned as reasons for a reflexive tendency among many Smithsonian staff to protect their turf:

When it comes to cooperation, [the educators] are scared they are going to lose their individual resources and their individual control.

Across the board, whether it's education or exhibitions or curatorial, there is a tendency to think that any attempt to work together is a secret attempt to cut people's jobs. … That's the fear everybody has.

Academic Orientation

The academic orientation of the Institution not only results in lower status for educators, but also creates resistance to pitching exhibitions and other public offerings at a level appropriate for their audiences, or making learning fun and entertaining. One interviewee, not herself an educator, noted:

I've always felt that museums could [still] be authentic [while] being entertaining. That's the best way to learn. But I'm always trying to push people to not be afraid of being entertaining. Sometimes I think the Smithsonian takes itself so seriously that it becomes afraid to be entertaining.

Another person also talked about the importance of games as a learning tool in today's world, and how the very mention of the word "games" engendered instant opposition in some circles:

That's the way people are learning these days. Just because it is a game, that does not mean it cannot be serious or significant … [and if] this is how kids are working today, you have to go to them. You don't want to say, "This is the way we teach here, so if you don't like it, don't come." … We have to find creative ways to get kids excited.

In the opinion of some, the academic emphasis at the Smithsonian has also contributed to a general inattention to audiences:

We could have been the Discovery Channel, if we had started back when the Smithsonian was pooh-poohing cable TV because we are an academic institution. … If you want to reach Joe Public, TV is very effective. There was just an internal attitude or culture here that made the Smithsonian not care much about extending itself to the public, except through visitorship.

Another interviewee spoke about the opposition that arose at one unit over an exhibition on hip-hop music:

There's a tendency in some places to think, "[The teenagers] go in there, and they just fool around." But for those kids, it means a lot. It gets them thinking about identity and social issues. It's meaningful in terms of what they take away from their visit.

Conservatism

In interviews for this and other studies conducted by OP&A, the Smithsonian's culture has frequently been described as conservative and risk-averse, which has greatly limited innovation, creativity, and adaptation to changes in audiences, technologies, and society.

Risk Aversion

One interviewee summed up the Institution's attitude toward experimentation and change in these words:

[You constantly hear] "This is the way we do it" or "This is the way we have always done it" or "This is what works." There's great resistance to trying new things at the Smithsonian—to saying "This might not work, but let's give it a try."

Some interviewees attributed some of this conservatism to the bureaucratic mentality that comes with being a Federally-supported organization:

Being a government museum is hindering the creativity and the experimentation that most education departments have the ability to do. … The Smithsonian has never had a good reputation in the world of education, because it is not doing the most experimental innovative things. ... It's the bureaucracy that limits it.

Others thought the Institution's conservatism stems in large part from a desire to avoid controversy:

I understand in so many ways why the Smithsonian can't do some of those controversial things, because of the political brouhaha that always seems to happen around anything.

One interviewee noted how this aversion to anything that smacked of controversy tends to undermine the relevance of Smithsonian offerings:

We try to stay away from anything that could possibly be a hot-button issue or a controversy. … Certainly, we should not be advocating one side or the other. But providing different points of view and saying "Educate yourself and make your

own decision" is fine. … [The public does not] necessarily see [SI] as the place to go for information about what's happening now—current topics, current issues. To make the Smithsonian relevant, you need to make Smithsonian education content relevant.… Having at least a portion of your programming raise the dialogue would go a long way toward making the Smithsonian relevant to today's issues and problems.

Another interviewee agreed that the Smithsonian's tendency toward timidity in the face of controversial issues undermines its educational effectiveness:

Museums—and the Smithsonian in particular—should be a place where people can engage in difficult discussions, and that doesn't happen here enough. There are uncomfortable discussions to be had, and through those discussions we learn more. We learn to engage each other in different ways. I remember the Enola Gay controversy and the hype around it, and I thought it was sad that the Smithsonian [backed down]. … The Smithsonian or any museum should be a place where you can go and have those hard discussions, and everybody can leave and either say "Hey, my viewpoint has changed," or maybe "No, my viewpoint hasn't changed, but I was able to have an open conversation about it." That is a big part of the educational role that [any museum] would have, and [as the] national museum, I feel [the Smithsonian] should set that bar.

One interviewee, however, suggested that problems with programmatic relevance at the Smithsonian had more to do with bureaucracy than culture:

If we have to dictate our programs 18 months in advance, how do we [reflect current issues]? You can't take advantage of current events and things that are most important to people outside of the Smithsonian. … We often forget that it's about the visitor.

Technophobia

Many interviewees also talked specifically about how behind the times the Smithsonian is when it comes to technology:

This has been a problem in education throughout—people always want to use the most base-level technology. … It's always this backwards thinking in education where they say, "You've got a new technology, but the world isn't ready for it, so let's not go there."

At one unit, an interviewee talked about how it took management two years to explore a new technology that was already in wide use. He commented:

> *The online world is almost instantaneous, so to move that slowly [means] we're playing catch up. We're not the trend setters; we're the trend followers at this point. [Given] the Smithsonian has the reputation of being state-of-the-art, the biggest, and the best, we should be trend setting. We should have the best technology. … We could have had more impact, more following, and a more developed fan base online if we started this years ago. … I would love it if someone from the top just said, "This is what we're doing."*

Several interviewees specifically referred to the generational component of this issue, with older staff more resistant to—or at least less aware of the need for—adaptation to the demands of new technologies:

> *We all agree more or less that online content should not be organized the way our buildings are organized. … [But] you have to overcome barriers from people who have been here for 30 or 40 years, and who say "This how we've done it always, and now you just want to take all my stuff and throw it into a database with everyone else's…?" I think there is a substantial barrier here.*

One person suggested the Smithsonian ought to make money available to experiment with new technologies and applications:

> *How do you use the new iTunes genius button to encourage people to explore Smithsonian content? … There is no stream of funding open to us for that kind of [experimentation]. … [The Institution is] risk-averse; people don't want to take chances. … If you want to do something innovative and stay ahead of the curve, you have to be willing to take some chances. … [It takes] somebody saying, "This is important enough that we want to put down some money to try something that may or may not pay off."*

One area of particularly intense debate in the area of technology has been whether the Smithsonian should embrace interactive Web 2.0 approaches that offer the public channels to provide input into Smithsonian content. One interviewee described how the Smithsonian's cultural conservatism rises to the surface in this debate:

> *I hear that we're just going to "dumb it down" if we allow the public to participate or to get access to unfiltered or imperfect data. They're going to misrepresent it. They're going to do stupid things with it. They're going to reduce it to the lowest*

common denominator. … I think it's arrogant for a public institution with a civic mission … to deny open access to its assets, which are technically in the public domain. Especially since scholars have always depended on the free flow of information among themselves. The open flow of information is the wellspring of democracy and innovation.

Cultural Change

One interviewee summed up the cultural challenge at the Smithsonian as shifting from a "we-already-do-that culture" to a "how-would-that-work culture." Some interviewees cited places at the Smithsonian where this type of thinking already exists. An interviewee at the Lemelson Center, for example, noted:

We're a center about invention—shouldn't we be able to take some risks [ourselves]? The Center's director has been supportive of risk taking, saying "Try it. See what happens." And if it doesn't work [you figure something else out].

An interviewee at a small unit, citing that unit's lack of space, collections, and staff, said:

We have to try a lot of innovative things. We have to use technology, because that's what we have: the web, the internet, the virtual museum. … It's sometimes hard to get acceptance for that [at other] units. There's a lot of resistance to change, to trying new things, to being okay with compromises. … Someone once literally asked me, "Why try something new, when the old stuff works just fine?" If that's the attitude toward education at the Smithsonian, it's no wonder we're being left behind!

A third interviewee talked about her approach to initiating cultural change in one area. It began with assembling a planning group of high-level managers, rather than line staff:

People got upset, because they expected [the planning would be done by line staff in the relevant area]. But those people already know *[what's needed]! You want culture change? That comes with the deputy directors of the units. … [The line staff] are not the ones who can make the decisions. They are the ones who live with the frustration of having the expertise in their field to know what the Smithsonian could and should be doing—but they don't have the authority to marshal the resources to do it.*

One senior manager suggested that efforts were needed at his unit to cultivate a wider appreciation among staff of just where they were lagging behind the cutting edge:

I would love for our curators, exhibition people, design people, and even some of the educators to get out and see a wider world of learning. … [An external review group] made that point. They said "It seems to be a good menu here, but it's not a creative menu. It's what you would expect." … Very fine people here have gotten used to certain patterns of work, and have not had reason to … [think outside the box and ask,] "Why would we do this? For whom? How are we going to change both ourselves and our audiences through this project?"

It was not uncommon for interviewees to express their faith that some of the cultural characteristics of greatest concern—conservatism, autonomy, and so on—will naturally change as younger staff replace older staff. In some areas, such as receptivity to technological change, this seems self-evident. But even in less obvious areas, such as the cultural tension between educators and content specialists, some interviewees suggested generational change was likely to have salutary effects, because of the differing values and expectations associated with different generations.

It was suggested, for instance, that members of the younger generations are generally more collaborative, more entrepreneurial, and less wedded to traditional disciplinary and functional distinctions. Several interviewees commented on what they saw as a more receptive attitude on the part of younger researchers toward the Smithsonian's educational function:

A lot of the younger research staff are very interested in education and will come [to the education staff] and volunteer to do things or ask for materials or ask for advice or get involved. … The younger group understands and appreciates [the education dimension], and will probably always integrate it into their science work. Not all of them, but certainly a larger number than of the older crowd.

However, generation turnover is a long-term process. If the Smithsonian wishes to accelerate the shift to different cultural values, it will require a conscious effort initiated by senior management, backed up by appropriate rewards and incentives. As an interviewee put it:

I would try to create a culture of experimentation and research and development. I would create a pool of money that would encourage people to experiment. I would demand that people do evaluation at some level that looks at outcomes. I would encourage people to fail but to learn. … [We have to become] a learning community.

Discussion

Integrating education more deeply into Smithsonian programs, achieving better coordination across units and functions, and taking educational programming to a higher level of quality and relevance will require addressing aspects of the current organizational culture that pose barriers to change. Desirable cultural changes would include greater appreciation for the value of diverse perspectives and skills; greater willingness to take risks and innovate; a more collaborative orientation at all levels; and greater sensitivity to the needs of audiences. While change in several of these areas appear to be occurring naturally with the generational turnover in Smithsonian staff, committed leadership will be necessary to accelerate the process, in some cases by providing concrete incentives for cultural change.

Appendix 9: Leadership

In recent years, educational leadership at the Smithsonian has been weak at the central and unit levels. Except in connection with exhibitions, education has rarely had strong champions against competing claims on resources, although that picture now shows signs of changing. At all levels, priorities are unclear, and are to some extent dependent on personalities rather than explicit strategic plans or goals.

Central Leadership

The current culture and organizational structure of the Smithsonian have tended to stymie bold leadership from the Castle. They are marked by a sprawling, decentralized structure that displays considerable organizational inertia and is difficult to "steer" (see Appendix 11, Structure and Organization), and a deeply-entrenched tradition of autonomy at the units that they strongly defend (see Appendix 8, Organizational Culture). In addition, there is a widespread sense that Smithsonian staff and stakeholders expect major decisions to be arrived at through a process of consultation and consensus.

In the face of such realities, recent Smithsonian administrations have for the most part avoided making major decisions that could provoke negative reactions at the unit or grassroots level, or have backed away from decisions that proved very controversial. This has led to a sense that the Castle passively presides over the Institution, rather than actively leading it, and this is as true in education as in other programmatic areas.

Secretary

Despite the obstacles noted above, the Secretary can influence the general direction and priorities of the Institution. Secretary Small, for example, had some success in drawing attention to the needs of the Institution's physical facilities, and focusing resources on addressing them.

The last Secretary who chose to use this influence specifically to raise the Smithsonian's profile as an educational organization was Ripley, who led the Institution from 1964 until 1984. Since then, interviewees suggested, education has not generally been a major focus at the Secretarial level. One veteran of several Castle administrations noted:

> *We are [still] living with [Ripley's] vision—a fuzzy, faded vision, but it's all we have.*

Another interviewee added:

> *When Secretary Small came on board, originally [educational outreach] was one of his big things. For whatever reason, that fell by the wayside. … That's not to say that some of the individual units aren't forward thinking—there are a lot of good educators here. But from a central standpoint, it lacks direction. That has to come from an Under Secretary or the Secretary.*

In the absence of sustained Secretarial attention, championing the cause of education at the Smithsonian has been left to others. Two groups that have tried to fill the vacuum in the recent past are the Education Committee of SNB and Smithsonian educators themselves, both of which are discussed in following sections.

However, a number of interviewees were optimistic that Secretary Clough had the potential to provide the leadership and vision that Smithsonian education has long lacked. One unit director expressed it in these words:

> *[Clough is] saying "I'm an educator. I come from a background of education." I cannot recall other recent Secretaries who had the experience and credibility to say that. Secretary Heyman came out of a university environment, but to the extent I encountered him, he was more a manager of complex university assets than an educator. So I am rooting for Wayne to be our main cheerleader on that.*

Another interviewee put it this way:

> *I haven't really thought about the form that the institutionalization of a higher prioritization of education should take. But I have a lot of confidence in the new Secretary. He understands these things. His career demonstrates that he has been very effective in changing the culture and priorities of an organization.*

SNB Education Committee

Several members of the SNB Education Committee have been strong advocates for the cause of education at the Smithsonian.[102] These individuals were praised by interviewees for their commitment to promoting the Institution's educational function through investments of their time, effort, and money.

However, interviewees also for the most part held that the SNB Education Committee cannot and should not be the prime force shaping central Smithsonian educational policy

102 Some members of advisory boards at a number of individual units have likewise taken up the cause of education at their museum or research center.

and priorities, because SNB has no formal governance, administrative, or policy-making authority. Thus, while SNB members can be valuable allies for a Castle administration committed to education, an energetic SNB Educational Committee is no substitute for effective Castle leadership. The leadership role played by some committee members in recent years was portrayed by interviewees as an understandable but inherently limited response to the failure of Smithsonian senior managers to set clear directions for education or to define a clear support-and-advisory role for the committee:

> *Without the clarity of an educational mission, the [SNB education] committee is doing its best, but floundering. Some of the things they are trying to take on really should be the Institution's role. They should be the advisory group— the ones who say "That sounds good," or "You've got to veer left on this," or "I have a connection at this foundation; why don't we go in together?" They shouldn't be setting policy; that is not their role. … They are eager to do something, but they are not sure what they are supposed to do.*

Another discussed the lack of clarity about the Board's role as follows:

> *If you want these people to be engaged, you have to give them a job. They have to have some kind of impact or meaningful responsibility. But at the same time, they're not employees; they are not working away on these issues day in and day out. So you have to carefully carve out a niche for them. … It comes down to what kind of involvement you* ***want*** *from education committee members. Once people understand what is expected of them, they will respond.*

One interviewee, in discussing the proper role of SNB, also expressed some concern about possible confusion vis-à-vis lines of authority and responsibility:

> *Advisory board committees are great assets, provided the Institution knows its strategic plan, its priorities, how to get them delivered, what we need, who's in charge, and stuff like that. … But confusion occurs when all of this is not laid out and articulated. [Board members start to wonder,] "Are we running the show? Because there's nobody home." On the other side, [the staff wonder,] "Who are these people? Should I be paying attention to them? Are they my bosses?"*

Smithsonian Council of Education Directors

SCED, "reconstituted" in its current form out of CMED in 2002, was intended to serve as a forum for education managers from all the units to gather, exchange ideas, and discuss issues of mutual concern. It was also hoped that SCED would give educators at the Smithsonian

a more effective voice in policy and management decisions at the highest levels. The group meets once per month and is presided over by the director of SCEMS.

Some interviewees familiar with SCED described it as useful for exchange and networking. However, few if any interviewees described it as effective in providing pan-Institutional leadership for education or significantly raising the profile of education at the Smithsonian. A number of reasons for the latter judgments were cited:

- ◊ Participation in SCED is voluntary, and some units participate occasionally or not at all.[103]
- ◊ Units are often represented by lower-level staff, rather than the director of education him- or herself.
- ◊ The group is perceived by many as a SCEMS-controlled initiative, rather than a truly collaborative body.
- ◊ Staff at the level of education directors—even collectively and speaking with one voice—do not have the clout to significantly affect policy without buy-in from other staff at similar or higher levels; and
- ◊ Because of the widely differing definitions and perceptions of education among the units, achieving substantive agreement on policy and programmatic questions has proven extremely difficult.[104]

Strategic Planning

Many interviewees thought the fragmentation of educational efforts across the Institution stemmed, at least in part, from the lack of clear strategic guidance. As noted elsewhere in this report, education at the Smithsonian is not guided by a central vision, clear priorities, or even a definition of what qualifies as an educational offering and who is an educator. Rather, as one interviewee put it:

> *We have a strategic plan for education, one for the museum, the Under Secretary had another one, the Smithsonian has another one. Which one do you go by? What are we doing on any given day that relates to any plan that we have?*

103 The decision about whether a unit will participate in SCED is made at the level of the unit education head's supervisor.

104 An example cited by several interviewees: in early 2008, a senior Smithsonian manager challenged SCED to write a brief case statement ("elevator talk") that would give members of Congress, potential donors, and other stakeholders a quick overview of what Smithsonian education is and why it matters. The project bogged down for over a year in the inability of the drafting committee to agree on basic issues of scope and definition, and the final product—which did not appear until the spring of 2009—failed to confront the basic issue of what education means at the Smithsonian.

An Institution-wide strategic plan for education for 2004-2009 has been adopted. However, because agreement on the plan required consensus among individuals with different ideas about what education means, the strategic objectives enumerated in the plan were broad and vague, and have had few direct operational implications, with two exceptions.

- First, the activities of SCEMS itself over the past five years have to some extent been guided by the strategic plan. Several pan-Institutional initiatives were tied to the plan's objectives, including the smithsonianeducation.org web portal, the EDGE program database (and the requirement in directors' performance plans that units enter data into it), the Teaching for Understanding professional development program for Smithsonian educators, and the Educators' Award program.
- Second, while interviewees suggested that the plan had little practical impact on the educational activities undertaken at other units, it did commit the units to writing their own individual strategic plans for education, and most did so. However, examples of these plans examined by the study team were of widely varying quality—ranging from short mission statements laying out a few broad goals (or simply describing the current state of the unit's educational programming) to detailed plans with concrete operational implications. Few explicitly prioritized target audiences or programs, and several suffered from the impulse to try to "be everything to everyone."

Interviewees differed on the question of whether a more substantive strategic plan for education, with real operational implications for the units, would be desirable. On one hand, several took the position that legitimate differences among the various units ruled out anything beyond the broadest of formulations:

> *It's almost impossible to have anything other than an overarching strategic emphasis on the fact that we are an educational institution and we need to think very carefully about both formal and informal education at all levels. It would be very difficult to have an education policy that covered family programs concerned with American history and post-doctoral work in astrophysics. The breadth of activities that we do is just so huge.*

Of course, it is not clear that an overall Smithsonian strategic plan for education would have to embrace *everything* that is done in the name of education at the Institution. It might be conceptualized instead as a limited set of central priorities to be pursued alongside (rather than in place of) unit priorities.

Other interviewees who objected to the idea of a pan-Institutional educational strategy thought such a plan would amount to little more than another in a long line of Castle

initiatives that, in their opinion, provided few concrete benefits while creating more red tape and more work. Their implicit (and occasionally explicit) message was that Castle initiatives have added little value to unit-level education work, so the best strategy would be for the Castle to get out of the way and let the units do their work.

On the other hand, some interviewees enthusiastically supported the creation of a central strategy for Smithsonian education that, unlike the 2004-2009 education strategic plan, would set real priorities and entail practical operational implications. As discussed in Appendix 13 on Financial Resources, some in this camp, especially those involved with development, felt that efforts to raise money for education have been hampered by the absence of a compelling strategy to present to potential donors. Others simply felt the Smithsonian was frittering away its enormous potential as an educational organization by failing to focus on a limited number of areas where it could make a real difference:

> *The outcome of the strategic plan should be to identify and prioritize the most important initiatives—and focus on one thing at a time, really try to get your arms around it, and pursue it in a big way. Often what happens is that you try to do too much, and it ends up fragmented and unfocused. The outcome of this strategic planning process should be a business plan that identifies priorities, goals, and steps for an educational push. And just stick to that! At some point when they have successfully implemented that, maybe bring the next thing on.*

Interviewees who favored such a central strategy usually acknowledged that it would have to allow the units significant leeway to pursue their own needs, interests, and priorities, because of the differences in their missions, audiences, disciplines, and so on. No one argued that a centralized, "one-size-fits-all" approach to education was a realistic option, and many suggested that striking a balance between the creativity that comes with unit autonomy and the efficiency that comes with central coordination was a key issue for the future of education at the Smithsonian:

> *[The Smithsonian] needs a strategy overall so we can position ourselves and be known—"branding," if you want to use that term. On the other hand, you need to let a thousand flowers bloom. … You need to allow for distinctions between the arts, humanities, and sciences. There might be common goals, but you've got to allow for differences.*
>
> *Are we marshalling our limited resources in the most strategic way? No, we're not. … Do we need to be more central in some of what we're doing? Maybe. But if you don't have a certain measure of flexibility, it kills creativity. It's a constant struggle. … So I don't know exactly what we need, but I do know we need a plan.*

We need that framework that allows us to say, "Okay, what I did today moves us forward in this way."

Everything we do should flow from an overarching [strategic] plan. … [But] it's up to the Regents and Secretary to decide … how much is going to be planned and monitored centrally, and how much will be "you can do what you need to do."

One interviewee also strongly advised that such a strategic plan be drawn up with input from representatives not only of all units, but of all functions. In her view, a strategic plan for education crafted exclusively by educators and presented to others as a *fait accompli* would meet enormous resistance:

I don't think any component of a strategic plan can be created here without scientists and curators on the committee. Nothing. … If the educators want to have a voice, they need to sit down with the content holders to develop the education strategy. Because educators are not the only educators! Every time a curator gives a lecture or a scientist goes to a classroom, they are contributing to education. … You could have a great strategic plan drawn up by educators, and the rest of SI will go, "What is this? It's not my idea of education; my education isn't in there."

An Under Secretary for Education

A number of interviewees spontaneously suggested that an Under Secretary-level position for education would be necessary, or at least desirable, for pulling together the Institution's fragmented efforts and raising the overall profile of education. Others responded positively to the idea when it was put to them by study team members:

Depending on the direction the Secretary wants to go in, I could see an Under Secretary for Education, because that would really prioritize education. That would make education important, and it wouldn't just be lip service.

Only [an Under Secretary] would have sufficient stature to establish a coherent program … and insure that educational funding in the units is … not diverted to other uses. I understand that in earlier times there was such a position, and it failed because the person interpreted his duties merely as providing funds for the units, without direction. A leader who reports directly to the Secretary and is accountable to the Secretary would avoid such passivity.

What I wish for is someone who was a terrific educator to lead us all. A visionary leader. An Under Secretary for Education and Learning. … Each museum has incredible pockets of education. … [But] there's nobody guiding us.

However, even among those who favored higher status for (or greater coordination of) Smithsonian educational activities, not all were sold on the idea of an Under Secretary with this portfolio. For example, one interviewee argued that the same benefits might be achieved with less disruption by a leader below the Under Secretary level:

I do think there needs to be some kind of strong central leadership, but I don't know if it needs to be an Under Secretary. You could probably have a director on the level of [CIO] Ann Speyer. That would be a good analogy; that's a very senior-level person. But it doesn't have to be an Under Secretary.

Others were concerned about potential confusions and conflicts that might result from having an Under Secretary responsible for a function that cuts across units that report to another Under Secretary:

An [Under] Secretary of Education [would send] the signal that education is important at the very top level. The challenge is that it would be a cross-cutting function across the entire Institution. It is not like the other Under Secretaries that have hierarchical reporting structures.

We need an education vision for the Smithsonian, but it is not going to come from an Under Secretary. … [It would not work to have] the general [in the Castle] and the troops in the units. [An Under Secretary] would want to centralize education, and it would be a constant battle. All the energy and resources would be going into turf fighting as opposed to creativity and inspiration.

Another interviewee expressed a specific concern that would arise if education departments at the museum and research units were compelled to report to an Under Secretary in the Castle:

There was a review where it was proposed that all SI education departments report to an Under Secretary for Education. We decided against that because we were concerned that if education departments formally reported to a central unit or an Under Secretary, they would become orphans within their own units—directors would lose interest in them. That would be bad not only in terms of cooperation, but in terms of funding: the museums collectively have far more money available for education than a central education unit ever could.

Needless to say, the numerous advocates of unit autonomy in the museums and research centers would mostly reject the concept of an Under Secretary for Education outright. Thus, if an Under Secretary position with responsibility for the education function across the Institution were to be established, the incumbent would have to be prepared for some resistance from the many Smithsonian staff opposed on principle to such an office.

Unit-Level Leadership

As noted above, the 2004-2009 Smithsonian strategic education plan specified that each unit was to complete its own strategic plan for education and submit it to the central administration, but the resulting products varied substantially in character and quality. Further, it is not clear to what extent the units that drafted such plans actually implemented them. There is no central mechanism for monitoring compliance, and the sense the study team got from its interviews is that education programming at the museums and research centers has remained largely opportunistic and personalized.

It is also unclear how and to what extent unit directors are evaluated for their units' educational efforts. One interviewee suggested that a movement toward accountability in this area was derailed by recent turnover at the highest reaches of Smithsonian management:

> *[Former Deputy Secretary] Sheila Burke put in each unit director's [performance plans] an education component. It was up to her to enforce it. But things happened…*

The OP&A study team interviewed almost all museum and research center directors for this study, and they uniformly voiced strong support for their units' educational efforts. However, other interviewees suggested that in strictly practical terms, some directors do much more to promote and support education than others. One director whose deep commitment to education is widely acknowledged suggested an explanation for this seeming contradiction. When asked whether he believed education was really a high priority among his peers across the Institution, he responded:

> *No I don't, to be frank. When I talk to other directors, I don't get the sense it's like it is here. … [But] we all nod and say, "Oh, yes. Very important, education." … Education is like motherhood and apple pie.*

This interviewee went on to suggest that bringing directors together for concrete discussions of educational issues across the Institution might help to boost the level of practical commitment among them:

We need to get all the museum directors in a room, but rather than just say "Let's talk about education. Isn't it wonderful?" and watch everybody nod … we should try to actually cite some examples of programmatic excellence. I've heard that American Art is probably years ahead of the rest of us in terms of the web. So let's have some sort of presentation for directors that challenges us to rise to [the occasion]. Let's try to celebrate some of the good role models we have.

Indeed, a number of interviewees discussed the value of a pan-Institutional task force or working group—whether or not at the director level—to set directions and foster their implementation across the units:

I would assemble a task force that combines scholars and educators across all the bureaus [including off-Mall units] to sit down and talk about where we've got to go. … The Smithsonian is just so unstructured that you really need an oversight task force to bring some Institution-wide rationality to the idea of education. … [But] each bureau needs to be heard from.

Along these lines, some interviewees suggested that the way to proceed was to initially bring together people not from all the units, but rather from those units that want to pursue a more coordinated approach to education—a "coalition of the willing," so to speak. The advantage here would be the possibility for such units to forge ahead without being held back by more recalcitrant units:

I hope the new Secretary would demonstrate what he thinks is important by forming an Education Council that includes at least those unit directors who have the most interest in education. … If it's not worth the fight [to get everyone on board], at least get together the two thirds of them who are really interested. And then when you get central funds [to support educational programming], those two thirds will be the ones to benefit from them.

Discussion

Achieving greater influence as a national educational organization will require clear strategic priorities for the Institution as a whole. Ensuring the units adopt these priorities will be a major leadership challenge for the Secretary and other leaders at the central Smithsonian. Some directors will inevitably have less of an interest in them than others, and unit autonomy is a deeply entrenched part of the Smithsonian culture.

For education at the Smithsonian to move forward, leadership at all levels will need to become strong advocates for establishing it as an Institutional priority and allocating the resources necessary to ensure excellence in the areas defined by strategic goals and priorities. It will be essential that leadership do more than pay lip service to education.

Appendix 10: Management

Some interviewees mentioned management shortcomings at both the central and unit levels as a major factor contributing to problems with Smithsonian education.[105]

I. Central and Pan-Institutional

Decision Making

Interviewees indicated that the central administration has not engaged in rigorous decision making for education. Rather, one interviewee described the process as "throwing lots of mud up on the wall to see what sticks," with individual interests, perceived funding opportunities, and inertia as the principal driving forces.

Interviewees suggested that better decision making would require clear strategic priorities, spelled out in formal plans at the level of individual units and the Institution as a whole:

> *The outcome of this strategic planning process should be some kind of a business plan that identifies priorities and goals and steps for an educational push.*
>
> *Secretary Clough and Richard Kurin should have a strategic plan for education. They have to say, "Here are our metrics; these are our goals; this is the strategy," and bring all the education people to the table.*

Some interviewees stressed the need to base decisions on better intelligence about what is happening both within and outside the Institution. This would mean keeping more in touch with the external environment (including looking both at competitors in the museum and education worlds, and at potential partners) and better communications and information sharing within the Institution (discussed in greater detail below).

Others discussed the need to use specific criteria to guide decision making at all levels, including:

- ◊ *Audience interests*, as identified through systematic definition of target audiences and assessment of their needs;
- ◊ *Organizational capacity*, in light of the difficulty units have handling the programs and initiatives already on their plates;

105 See also Appendix 3, A Brief History of Education at the Smithsonian Institution, which notes very similar themes since the Smithsonian's inception.

- ◊ *National needs*, particularly in terms of playing a leadership role in educating the public about important contemporary issues such as the changing demographics of American society and global climate change; and
- ◊ *The potential for leveraging resources*, so that limited resources are not dissipated through scattershot, unsystematic deployment across units and types of programs.

At all levels, interviewees pointed to two somewhat paradoxical problems with educational decision making. One is an insularity that leads to decisions being made without adequate consultation with a range of staff who might have useful input, or whose support might be critical for implementation. The other is an excessive commitment to consensual decision making, which sometimes results in a failure to make robust decisions. The latter criticism was frequently leveled against SCED, which according to some interviewees tends to get bogged down in protracted discussions and which often is unable to reach agreement:

> *You can't be all things to all people. … But what I see [in SCED] is that there has been an attempt not to offend anybody, and to try to embrace everybody.*

Communications

Effective management requires timely, accurate, and complete information. Interviewees indicated that pan-Institutional information sharing on all aspects of education programming and processes is weak, and that the information sharing that does take place often occurs through informal channels and personal connections. This greatly reduces the scope for sharing lessons learned, identifying common problems, and avoiding duplication. Said interviewees:

> *What I find difficult is that you never know what's going on in other [units]. When they're doing something cool that could link to what we're doing, we don't find out about that.*

> *There is no good communication. … Often we are really just restarting from scratch, [with no one] to say, "Oh, [this has been] done fifty times."*

> *There are all these Smithsonian museums, each museum has an education department, and I have no idea who they are—I have no interaction [with them]. We should be talking. … We are so disconnected.*

One person described the benefits that resulted from opening up communications to coordinate activities at various units focusing on the bicentennial of Abraham Lincoln's birth. While the original intent had been simply to share information about what each unit was doing so they would not work at cross-purposes, identification of shared opportunities resulted as well.

SCED was envisioned in part as a forum for disseminating information and promoting cross-unit coordination. One interviewee effused:

> *[SCED] is a wonderful thing. … You have all these groups who are now aware of what's going on, what the issues are, how to work together, who's working with what. You can share common problems, you can solve problems, and you can discuss issues.*

Others, however, thought that the format of SCED was not conducive to constructive exchange:

> *[SCED is] not really a sharing body. It does not report out on things that are going on around SI. … That could be very valuable, because you would probably have a lot of people saying "Hey, we're doing something like that too. Want to work together?" You could generate some of that synergy.*

Another interviewee thought SCED discussions focused excessively on abstract subjects that left little room for concrete information sharing:

> *Nobody really deals with the day-to-day challenges of being on the floor as an interpreter, dealing with people who are asking questions you might not know how to answer. Sometimes the most basic things get lost.*

Still others found that SCEMS controlled the agenda too tightly and that irregular attendance limited SCED as a forum for constructive exchange.

Some interviewees noted that the absence of uniform, accurate, and comprehensive quantitative data on the resources (human, financial, and other) devoted to educational offerings makes it extremely difficult to get a clear central perspective on educational inputs and outputs across the Institution.

There have been some developments around the Institution aimed at improving cross-unit information sharing and communication. For instance:

- ◊ OCIO is developing a Sharepoint capability that could facilitate collaboration and information sharing across units.
- ◊ SCEMS has been implementing a central education database (see the discussion below). It also administers the Education All listserv, a communication tool available to all Smithsonian educators. All subscribers can post and receive messages from their listserv community
- ◊ The Educators' Exchange, a grassroots initiative by some educators, holds monthly workshops that focus on a topical issue, such as new technology or methods to reach specific audiences. The sessions usually include a presentation or tour to spark thinking and opportunities for dialogue. The Exchange has proved extremely popular:

> *Thank God we have Educators' Exchange! That's one of the best things at SI. That's wildly effective, in my opinion. … It's a combination of planned sharing and planned group work, but it's informal enough that it feels refreshing and fun. And you meet colleagues that you ordinarily don't interact with.*

Administrative Processes

Few interviewees referenced central administrative support, but what they said echoed what OP&A typically hears in its studies—excessive paperwork, too many layers of approval, and frequent changes in procedures.

Accountability

Few interviewees spoke directly about accountability for education at the central level, but the issues they described indicate that little attention has been paid to accountability for staff performance,[106] achievement of strategic education goals, and effectiveness of programs. For example, although the units were directed to develop their own strategic education plans aligned with the Smithsonian-wide strategic education plan for FY 2004-2009, and doing so was included in unit directors' performance plans, not all the units have produced robust plans with clear goals and priorities. The study team saw no evidence that any unit directors were called to account for this. Another example is that the last Secretary required evaluations of certain exhibitions, but instituted no such requirement for education programs.

106 Because so little information was available on performance evaluation of staff, the discussion here addresses only program evaluation.

Evaluation

Program evaluation provides information crucial to decision making and accountability. Common types of program evaluation include the following:

- *Front-end* evaluation looks at what target audiences do and do not know (or want to know) about the subject of a program, and is conducted as part of the program development process.
- *Formative* evaluation looks at the potential effectiveness of proposed delivery strategies, which is assessed through testing proposed strategies with target audiences before they are finalized.
- *Process* evaluation assesses the effectiveness and efficiency of the program development, delivery, and administration processes.
- *Output* evaluation assesses whether measurable, quantitative program objectives and targets were achieved (for instance, the number of expected participants or number of offerings).
- *Outcome / impact* evaluation seeks to determine whether a program achieves the results it was intended to achieve (for example, whether audiences learn what program developers hope they will learn, or whether a program designed to draw young people into science or museum careers actually has this effect on some percentage of participants).

While outputs are relatively easy to measure, they generally say little about the impact of the program. By contrast, outcome evaluation addresses a program's value-added. Because funders are typically very interested in evidence of positive outcomes from the programs they support, outcome evaluation can be a critical fund-raising tool. Unfortunately, it can be difficult and costly, particularly when it comes to "soft" goals, such as raising participant awareness of a contemporary issue or inspiring a career choice, as a recent National Academies report on learning science in informal environments described (Bell, et al. 2009):

> *Controlling participants' experiences to isolate particular influences, to arrange for pre- and post-tests, or to attempt other traditional measures of learning can be impractical, disruptive, and, at times, impossible given the features, norms, and typical practices in informal environments.*
>
> *To elaborate: visits to museums and other designed informal settings are typically short and isolated, making it problematic to separate the effects of a single visit from the confluence of factors contributing to positive science learning outcomes.*

… In addition, many informal learning spaces, by definition, provide participants with a leisure experience [and the act of assessment can itself] thwart both participation and learning.

Front-end and formative evaluations serve a different purpose from outcome evaluations, but are equally important; however, they are less on the radar screen of funders. Front-end and formative evaluations that examine audiences' interests and reactions to program delivery strategies are typically less costly than evaluations that seek to assess a program's impact, and often require less-rigorous methods to be effective. The results of front-end and formative evaluations can be immediately used to guide basic program development decisions, whereas the results of outcome evaluations come too late to inform such decisions—although obviously, they can influence the development of future programs or mid-course adjustments in ongoing programs. However, educators at the Smithsonian have not generally paid much attention to front-end or formative evaluation. Many lack the requisite formal training or experience, and others simply have no time or inclination to do so. One interviewee commented:

We want educators who can help us look at the educational value or accessibility of an exhibit, like an evaluator. Let's talk about front-end evaluation … [both] conceptual and actually testing labels and objects. None of [the educators at this unit] has ever done that. Some of them are trained in it, but whenever we want to do it, we still have to go out and find a person who can do it. Isn't that odd? That's what education people should be doing. What they are doing is dreaming up educational websites, curriculum packages, and things that teachers can take.

One interviewee described how formative evaluation can yield information crucial to basic programmatic decisions:

After they got the data back [from the formative assessment], they found out that every single thing they had intended to do was just not going to work for [the target audience of] teens at all. … [And what might have worked] would have cost much more than the amount of money they got in the grant. So they gave back the rest of the money.

Given many organizations' limited capacity to undertake assessment efforts, the literature recommends that organizations be selective in what they choose to evaluate. As a starting point, top-tier candidates for evaluation might be major programs for which key decisions are pending. Timing is important—evaluations that cannot be completed in time to affect relevant decisions may not be worth conducting. Further, the potential benefits of a program evaluation should be weighed against the costs of undertaking it; generally speaking, there is

little point in doing a costly evaluation of a program that consumes relatively few resources. (See Box 1 for a set of criteria identified by Wholey, Hatry, and Newcomer 2004.)

Ideally, planning for evaluation takes place during program design. This allows staff time to carry out key tasks such as identifying questions to ask (what aspects of the program to assess); selecting the evaluation design (what type of evaluation is appropriate) and data collection methods (data sources, whether sampling is required); considering data analysis techniques (what analytical tools are appropriate for the data); deciding what types of reports to produce; and planning for application of the results. Planning the evaluation up front also ensures that needed process data are collected and data recording systems are put in place.

Box 1: Criteria for Setting an Evaluation Agenda

Source: Wholey, Hatry, and Newcomer 2004

Criteria for Setting an Evaluation Agenda

1. Can the results of the evaluation influence decisions about the program?
   Are decisions pending about continuation, modification, or termination?
   Is there considerable support for the program by influential interest groups that would make termination highly unlikely?
2. Can the evaluation be done in time to be useful?
   Are the data available now?
   How long will it take to collect the data needed to answer key evaluation questions?
3. Is the program significant enough to merit evaluation?
   Does the program consume a large amount of resources?
   Is program performance marginal?
   Are there problems with program delivery?
   Is program delivery highly inefficient?
   Is this a pilot program with presumed potential for expansion?

Standards and Guidelines

Interviewees pointed to a number of obstacles to assessing program results that can be traced to the central administration. One basic problem is a lack of pan-Institutional standards

or guidelines against which to measure results. A number of interviewees talked about how "painful" it is even to discuss pan-Institutional standards:

> *I don't know if everybody could ever agree on [standards]. … there's a lot of resistance. … There are people who say, "This is working for me here. Why am I getting this thing from upstairs? They don't understand my program. This isn't going to work for me, and I don't want to be told by some central part of the Smithsonian what works here."*

Even those interviewees who agreed that standards were important voiced caution:

> *Not everything will apply to every unit. [Standards] have to be flexible enough that units can use the things [that are relevant to them] and put the rest in storage—because at some point in the future, they may be more relevant, even if they aren't now.*

Defining outputs and outcomes that are appropriate to the education activities of the Smithsonian's diverse units is a daunting challenge. For example, to determine how many people are served by a docent "explainer" in a gallery, should visitors passing through the gallery be counted, or those who ask a question, or those who ask a question plus others who stop to hear the response…? How should websites be measured—total hits, unique visitors, downloads, repeat visits, average dwell time (and were all five minutes of the session spent on the website, or were four minutes spent talking on the phone)…? Outcomes are usually even harder to measure. Even if one knows the number of downloads of a curricula, how does one know whether the teacher actually understood and used the material, and if that use advanced student learning? If test scores showed no progress, is that the fault of the materials or the way in which the teacher used them?

A Central Education Database

Beginning in FY 2004, the central administration engaged in a major education initiative related to accountability that had two chief purposes: to enable the Institution to efficiently respond to stakeholder requests for data on education programs, and to track education programming in a way that would address inconsistencies in how units reported their education activities. The Educational Data Gathering and Evaluation database (EDGE), initiated by SCEMS working with SCED, is a three-phase, multi-year effort to implement a centrally administered web-based system to collect data and report on education program characteristics and outputs across the Institution.

Using consistent definitions and reporting standards, EDGE aims to:

- ◊ Measure numbers and patterns of attendance in education programming (Phase I, Audience Numbers; FY 2005-2006[107]) ;
- ◊ Increase understanding of the demographics of participants (Phase II, Audience Demographics; FY 2006-2007); and
- ◊ Assess to what degree programming meets internal objectives and engenders meaningful results with target audiences (Phase III, Audience Outcomes; FY 2007-2009). (See Volk 2005.)

EDGE provides basic estimates of the volume and patterns of program attendance, audience and program types, methods of program delivery, selected audience demographics, and other output data. In FY 2008, 30 Smithsonian units entered data into EDGE.[108]

Interviewees offered mixed opinions of EDGE. On the positive side, it was seen as providing a means of collecting data that could be used by upper management to respond to queries from Congress, market Smithsonian education to donors and funders, and secure accreditation from AAM and the Association of Zoos and Aquariums. EDGE is also the only education program tracking system for the handful of units that do not have their own. A few staff indicated that EDGE led them to reflect upon program processes or upon the need to clarify program goals and objectives. Some used EDGE data to improve the delivery of programs, as this example illustrates:

> *[I] looked at the EDGE database, and I saw which times were most popular. So I changed all the tour times; I try to suit our audience better.*

Some interviewees also liked EDGE because it provided a lot of information in one place.

However, criticism of EDGE was far more common. Problems cited included a lack of buy-in, lack of a practical purpose, and the difficulties of data entry.

Lack of buy-in. Getting EDGE off the ground has been difficult. Although ensuring that their units enter data into the system has been made a part of unit directors' performance plans, it is not clear whether the central administration considers EDGE a high priority. At many units the responsibility for entering EDGE data seems to have been grudgingly accepted rather than enthusiastically embraced. A number of interviewees thought that the units had not been adequately consulted about the system's design, and that it was therefore a poor fit for their programs. Interviewees from SCEMS, however, noted that SCEMS has

107 Difficulties with implementation (such as a lack of staff) resulted in changes in the project timeline.
108 ACM, CHNDM, FSG, HMSG, Horticulture Services Division (HSD), MCI, NASM, UHC, NMAfA, NMAH, NMAI, GGHC, NMNH, NPG, NPM, NSRC, NZP, SAAM, APAP, SCEMS, SERC, SIL, SLC, STRI, TSA, CFCH, SITES, SEEC, NMAAHC, and SIA.

always been willing to work with the units to include their views, collaborate on developing the framework and measurement systems, adjust the system to fit unit needs, and ensure compatibility between EDGE and the units' own tracking systems. However, as one interviewee concluded:

> *The Institution itself needs to get its act together and say, "Here's one system that we're all going to use, and one place to get data, one place to get reports."*

No practical purpose. Many interviewees were not clear about the purpose of EDGE, beyond aggregating data. Few interviewees indicated that they use EDGE data for their units' own internal purposes, in part because most units have their own tracking systems that better meet their needs. Many saw EDGE as just another example of an endless flow of administrative burdens emanating from the Castle:

> *It's not like we don't already have our own databases, and those databases serve our needs a lot better than EDGE. For us, it's just another central reporting requirement—more work that we don't see any benefit from.*

Some interviewees were concerned that EDGE encourages management and staff to promote activities that reach large audiences, warning that "it will become a numbers game" and "what you [can] measure is what you do." Few saw how EDGE could contribute to improving program quality:

> *I don't know how that information is going to affect the quality of education from the Smithsonian. It's one thing to report on what we do, and another thing to try to figure out what would work better.*

Others thought that EDGE data, presented to stakeholders devoid of context, may create false expectations:

> *We find it scary that [the Smithsonian] is funneling this information to the Hill … creating expectations in Congress on our behalf. [This unit]—and SI overall—can't be everything to all people, and we're afraid this is the expectation being created.*

Difficult data entry. Many interviewees complained that it was difficult and time-consuming to enter data into EDGE, and some noted that it was hard to keep up with the frequent changes to the system. It was not always clear to interviewees which programs/activities were to be recorded in EDGE, and the available categories did not necessarily fit units' programs or audiences. Collaborations were a particular problem:

Something that's confusing is that for the stuff we do with [another unit], we don't get to count it. They get to count it. So they do the administrative work, I do the actual teaching, and they get all the credit for it. That never strikes me as particularly fair.

Interviewees cited issues with consistency in how the units report their programs and audiences. Some said the units did not enter all education offerings into EDGE, particularly when it came to programs offered by staff who are not part of the education or public programs departments; one educator commented that there is "no repercussion" for omitting something.

Twelve units that responded to the OP&A questionnaire administered for this study said they had not entered data in EDGE for a total of 43 programs in FY 2007, and that the data on another eight were incomplete or inaccurate. Reasons given for not entering data for a particular program included collaborations in which another unit did the reporting; problems entering the data; not enough time; a lack of data; and the fact that the program in question was at the pilot testing stage. There is also some inconsistency in how data are entered. For example, while some cart docents record and report each interaction, others just estimate a total, while others use averages. As one interviewee put it:

I don't think the numbers we are getting for educational experiences or interactions [are] good data. Even if you give [our volunteers criteria for] what an "educational experience" is, their understanding is going to be different … There wasn't a really specific set of guidelines of what an "educational experience" is. We asked about it, and the [answer] was vague. … If we're busy, [the volunteers] forget all the time to click. … When I talked to different people about working with EDGE, their recommendations were to have [volunteers] give an average or just their "feeling" of a number.

Some interviewees also described confusion over who is supposed to enter the data, either because the unit had not assigned the task or department directors and SCEMS apparently gave conflicting directions. For example, when asked if she entered the data, one educator said:

No. This is a bit of a tricky issue right now, because I believe we're supposed to be doing it, but I'm waiting for the word from my supervisor … [who] kind of told us not to do it.

The net result of these issues, according to some interviewees, is that what comes out of EDGE is not a completely accurate reflection of education activities.

SCEMS interviewees maintained that it is the units' responsibility to manage the data entry, and that it has always been willing to work with the units to address data entry and technical issues and adjust EDGE to enable it to "talk" with unit systems. Additionally, when SCEMS proposed a centralized calendar system in which the units would enter all their program offerings, making EDGE unnecessary, the proposal did not get off the ground because not all units supported it.

Future Directions

The study team asked interviewees what role the central administration should have in program evaluation, if any. A number of interviewees thought it could provide needed support with evaluation methodologies, guidelines on quality, and sharing of knowledge and experience. Some comments on this subject include the following:

> *Help us figure out what is a reasonable way or mechanism for evaluating formal education. Because it's easy to say we have to evaluate it, but as we've talked before, it's intangible.*

> *If you create a culture of evaluation where people are thinking of it, there are creative ways to work evaluation in, to utilize the resources we do have. It's a step in the right direction for the Institution … to have somebody with experience in audience research and in educational research.*

When it came to EDGE's evaluation role, interviewees expressed a number of concerns about the third "audience outcomes" phase into which the EDGE project is now moving. One was a perception that EDGE would be used to "measure" outcomes, which raised many questions. For example, what outcomes would be measured, given the wide range of possible or desired outcomes? Said one person:

> *What I read in the document about EDGE is they're going to go for the four typical measures—behavior, attitude, skills, and knowledge. I don't hear inspiration.*

Another issue, as discussed above, is the difficulty and cost of measuring some outcomes, and the related worries about where the resources will come from. Some people questioned the value of the end product:

I'm very skeptical. … I'll make the effort to do what they ask us to do, [but] I have less optimism that that's going to really work and be meaningful.

In response to such concerns, SCEMS interviewees indicated that EDGE is not intended to measure outcomes per se, or to make comparisons among units. Rather, it aims to provide a locus where units can systematically record intended learning outcomes.

In 2008, SCEMS hired an education outcomes manager to help implement Phase III and assist unit education staff in articulating intended learning outcomes using the Generic Learning Outcomes (GLO) framework.[109] This framework was selected following consultation with most units over the past six months. The GLO framework argues for an outcome-centered approach in developing educational programs and alignment of offerings with the unit's mission. It is also useful in making a case to funders and in preparing staff to think about evaluation. According to interviewees from SCEMS, participating units are all adopting the proposed GLO terminology, which they intend to use when entering intended outcomes information into EDGE.

II. Unit Level

Absence of Strategic Guidance

Effective management and decision making require a framework or context, typically in the form of strategic plans and clearly articulated priorities. A few units have detailed strategic plans or other clear guidelines for education. For example, NMAI recently completed a strategic plan that includes concrete priorities and goals, while NMAH took the opportunity of its closure to reassess its approach to education and public engagement, resulting in some major changes, such as ending traditional school-group tours. An interviewee at SERC described the educational thrust there:

[The purpose of education here is] to interpret our research on the environmental sciences at an appropriate level, and to convey basic scientific principles in environmental science to people to [help them understand] environmental issues, problems, and [policy.] … That covers a full spectrum from little kids all the way up to government officials, politicians, and general public. … [Goals include] substantially increasing site [visitation], [presenting] research … so that the public can understand the environmental issues that are pressing on us, [and presenting] the site as a model for sustainability.

109 To learn more about the Generic Learning Outcomes framework, see http://www.inspiringlearningforall.gov.uk/.

The education department at an art unit is:

> *… Putting together a five-year plan for programming, based on where we want the unit to go between now and 2013. We are looking at a number of planning issues as part of this exercise: themes, funding, space needs, personnel, etc. We are getting input from staff, docents, and outsiders. … Other than the five-year plan, we have a set of objectives tied to the museum's objectives. While we are opportunistic about developing programs, if we cannot reasonably tie a proposed program to this set of objectives, we will not do it, even if it comes with funding.*

Another museum, having gotten foundation support to hire a consultant, set about determining what kind of programming it could most effectively provide:

> *We wanted to see what was being done out in other nonprofit organizations and private organizations. We brought in teachers to find out what they felt would supplement their programs, and we talked to various other people at other museums to find out what sort of programming they were doing.*

Many other units, however, did not have other clear sources of guidance:

> *A mission? We don't have one at all for our department. And I feel like we should—a mission and a vision [that says], for each program, where we should go from here.*

> *There is no strategic plan to say, "Okay, we are really going to focus on third graders," or "We are going to focus on families," [or] … "We're going to devote 50 percent of our resources to school groups."*

Unsystematic Decision Making

Absent strategic guidance, interviewees from some units talked about unsystematic decision making. They cited a failure to apply rigorous criteria (such as strategic priorities, audience impact, cost effectiveness, and organizational capacity to implement programs effectively) to programmatic decision making. One result, as described by the following interviewee, is an accumulation of fragmented programming that overloads the staff:

> *The main problem is that the programs keep growing and growing … but without any sort of direction. … [Staff are] terribly overwhelmed.*

Interviewees often described decisions as personalistic, opportunistic (particularly in terms of chasing funding), and inertial (simply continuing to do what was done before).

◊ *Personalism.* Program decisions are too often based on individual interests:

> *We don't do [programmatic decision making] very well. There is no process in place. We've done a lot of knee-jerk reactions to someone saying from above, "Do this program."*
>
> *We all have our priorities. … Depending on who you ask, [various] things are more of a priority.*

Several interviewees also described how individual staff identify with programs they manage or have developed, and cannot approach decisions about these programs objectively.

◊ *Opportunism.* Funding and perceived funding opportunities often drive decisions:

> *People will say, "Hey this donor is interested in such-and-such, so let's create a program so we can get some of that money!" And I'll ask them, "But is that something you were planning to do? Is that really a priority?" "No, but there's money over there!" So now you're adding a program that you have to maintain over time—what about those [other programs that already exist]? … There has to be a point where you say, "We're* ***not*** *going to do this, because this is not where we are. Let's finish what we started."*

Several interviewees discussed how their units were attempting to create endowments for education so that education staff did not feel quite so compelled to tie programming to the exigencies of funding.

◊ *Inertia.* A number of interviewees suggested that inadequate critical scrutiny results in the continuation, year after year, of programs and approaches that may not be particularly successful. One educator commented, in exasperation, that the only way to check the tyranny of inertia would be to "close the doors" and take stock of the thicket of unconnected programs that has grown up over the years:

> *Take that time to look at all of our programs, and don't do them just because we have always done them. Make a honest assessment of what the program's function is, why we do it, who we are reaching, what needs to change. … Nobody is willing to step up and say, "We need to stop doing this because it's never been a success. There are better ways we can allocate the resources."*

Strategic planning sometimes degenerates into exercises to rationalize the status quo,

as one interviewee noted:

> *We tried to fit all of those pieces in, because that's what [we were already doing], instead of taking a step back and saying, "Okay, what is it that we want to focus on? What is that niche that we need to fill?"*

Interviewees stated that decision making would benefit from a more objective, rational approach that stressed robust criteria such as conformity with well-articulated education goals and priorities; consideration of results from audience needs assessments or past program evaluations; cost-effectiveness analysis; and awareness of developments and exemplary practices in the wider world of museums and education.

Of course, some Smithsonian units do employ more systematic approaches to programmatic decision making. For example, an interviewee discussed how staff at her unit do formative assessments and apply the results:

> *[We are] prepared and flexible, so if something doesn't work, we either figure it out or yank it off the floor. [We ask] how we make it better, [and we] actually work with our visitors to say, "What isn't working about this?" … We are modifying as we go along.*

As with other issues painted with a broad brush in this report, there is a spectrum along which the units fall in their decision making, ranging from highly unsystematic to relatively systematic. However, the study team gathers that the former is more often the norm.

The Need for "Professional" Managers

The interviews indicated that not all of the people in charge of education departments and programming can be considered "professional" managers, in the sense of having management experience or training and paying close attention to the elements of good management such as communications, guidance, oversight, and teamwork. More typically, people with backgrounds in areas such as research, museum studies, and classroom teaching are promoted into management positions, picking up management skills as best they can on the job. (Some managers do not even have formal training or extensive experience related to museum or informal education.) The units generally do little to address these shortcomings by, for example, offering formal training or mentoring programs. Some interviewees thought the units needed programs to develop management skills in both existing and up-and-coming managers:

The only resource the Smithsonian has is ourselves. And if they're not going to put time and effort into [developing staff]—especially those of us who are below management level, but someday will be expected to fill those roles—we're doomed. We don't have those skills, but we're expected to have them. We have people without skills leading people who are not being trained, and it's going to be the same cycle over again.

Our supervisors and managers need to go to training about how to create a vision and get your staff excited, and how to stop micro-managing. Managers need to learn how to be good managers; it just doesn't mean that you're in charge.

At a few units, a related concern is the rate of turnover among managers, which leads to a lack of continuity in direction and emphasis.

On the positive side, interviewees at some units noted efforts at their units to strengthen education management:

It's [been] hard to talk people into being managers [at this unit]. … We were not training people to do it, [but now] we've set up some courses.

Accountability

Accountability, either for individual performance or program results, was rarely discussed as such. However, many of the issues with accountability discussed above at the central and pan-Institutional level apply at the unit level as well—most obviously, the fact that it is difficult to hold managers or staff accountable for outcomes that are often difficult to measure or even define.

At a more concrete level, few interviewees mentioned staff performance appraisals, and no clear message about them emerged. One interviewee, however, talked about how a unit responded to a challenging interpersonal work environment by changing the criteria on which individual performance is judged:

[The unit was tired of] the territorialism and lack of cooperation—resistance, even—that was going on. [So it] made working with others a performance measure. … If you don't get "outstanding" on that, you can't get an award of any kind.

One issue that came up more frequently was how the performance expectations and incentives for curators and scientists tend to discourage them from participating in

educational activities. Their performance evaluation is, in many units, heavily skewed toward scholarly output and success in securing grants. They often receive little or no credit for contributing to more public-engagement-oriented activities:

> *Most of the scientists would like to do more education … I think the real issue is that we're judged on our publications and our fund raising and that sort of thing.*

> *We really miss having a [scientist] go out into the public with this cart and explain [the objects]. … Many of the researchers would not want to do that, because they don't have the time—their other requirements, such as producing papers, and working on exhibits and so forth, pretty much discourage them from getting out and talking with the public.*

Interestingly, some interviewees indicated this was true even at some units where researchers' performance evaluation criteria technically included participation in activities for the public.

Evaluation

Accountability for program performance is inextricably intertwined with the issue of program evaluation, on which interviewees had a great deal to say.

Of the 24 units that responded to the survey that OP&A conducted for this study, five did not do any evaluations, and the rest had evaluated a total of 101 programs, or less than 10 percent of the programs these 24 units listed in EDGE.[110] Unit staff or interns conducted 67 percent of these assessments, external evaluators 24 percent, and OP&A 10 percent.

The following types of evaluations were carried out (a single program could have received more than one type of evaluation):

- Outcome, 51 percent of all the programs that were evaluated;
- Output, 47 percent;
- Process, 21 percent;
- Front end, 15 percent;
- Formative, 15 percent.

It is notable that the percentages for front-end and formative evaluations are considerably lower than those for outcome and output evaluations. Indeed, many interviewees who

110 OP&A requested that units list evaluated programs in the survey as they are listed in the EDGE database, for the purpose of this kind of comparison.

discussed evaluation tacitly equated the very concept with outcome and output evaluation. Reasons for not conducting front-end and formative evaluations matched, in broad terms, those for not conducting outcome evaluations.

Interviewees indicated that the outcome evaluations tend to focus on near-term results and usually employ low-cost, less-rigorous methodologies such as comment cards, informal conversations with visitors, and casual observation. Interviewees also judged programs successful if they attracted a continuing stream of funding from donors and repeat participation:

> *One reason that I know we are successful in what we do is the enthusiasm we see from students when they come in.*
>
> *We don't have any money to pay somebody to do an evaluation. … We have certainly had teachers tell us what they would like to see this or that, or if they don't understand; but it's kind of on the spot. With the visitors, we give them a little sheet of paper, and they say they like it or they don't like it.*
>
> *[We] use a standard questionnaire—what did you like most, what can we do to improve. I'm proud that we collect feedback after every learning lab. Yes, it's anecdotal, but it provides insight as to whether or not we're doing our jobs correctly. At the end of the year, I compile the data, and we see trends.*
>
> *I can measure success in a lot of ways. … I would say that the successful projects are the ones that have been around for the longest time and continue to get high levels of support. That means that we're doing something right.*

Units that offer teacher training programs may follow up with participants to get some sense of how they are applying skills or concepts developed in the program, but rarely take the next step of attempting to assess whether participating teachers' students are benefiting.

Perhaps the leaders at the Smithsonian in impact evaluation of education programs are NSRC and SAO, both of which have a tradition of rigorous assessment that looks at results over time. Interviewees from NSRC, which gets funding from NSF, said the center spends "10 percent on evaluation in everything we do," using rigorous methodologies—in part because showing return on investment is essential to raising money. Interviewees described some of the outcome indicators it tracks:

> *One measure of success for us is that leaders, including the school district administrators, the teachers, and the community, have changed their social values*

about science and science education. The evidence that we would have for that is that they are adopting and using research-based structural materials, that they have a differentiated professional development program for teachers that moves systematically from being novice to competent to expert, that they have put an infrastructure in place to support that whole enterprise and their teacher preparation of those teachers has changed to align with this kind of learning.

SAO, which both provides educational programs and conducts formal research into the process of learning, has developed a sophisticated, robust evaluation capability. According to an interviewee:

[SAO] just completed a survey of materials use. We contacted … a subset of the people who had ever received materials from us in the last three to five years and sent them an extensive questionnaire. We will be doing a questionnaire on workshops. … All of our major projects go through a rigorous evaluation, and we're primarily looking for gains in our subjects' understanding of a particular subject. That's a very important part of what we do, and we publish these results.

Another SAO interviewee noted:

Our work in assessment and evaluation has gotten a tremendous amount of support and interest, especially from professional developers. There are many professional development programs funded by the Department of Education and the National Science Foundation that use our resources to figure out whether their programs are working well or not. There are tens of thousands of teachers every year that go through these professional development experiences where the creators of these programs have decided whether they're doing things right or not based on the resources that we supply to them and help them with.

Some units, according to interviewees, have begun to address the need for impact assessments more systematically, including dedicating funds for this purpose. For example:

We put in there that we wanted the funds to be used towards evaluation, because that's something that education departments never have money for. So my predecessor was smart in putting that in there, [and] now that money can be used.

We are starting to do formal assessment. This year, [in] the overall performance plans and priorities for the museum, one of the top issues is developing a clear methodology for assessing the educational impact of all of our exhibitions online and onsite, to get formal and effective feedback about what we are doing.

As discussed below, impact evaluation of web-based programs faces additional difficulties, but a number of interviewees said their units are trying to move ahead with it. For example:

> *First of all, I am going to talk to people who are a lot smarter than I am about audience research and get their support. I'm trying to put together here in combination with [another webmaster] a plan for having a usability lab here … in this building so we can take advantage of the foot traffic, [and to] really get very smart and very serious about audience research.*

> *[Website evaluation is] something I'll be doing more of so that we can provide data to senior management, and to the various departments who put time and energy into [creating web] pages, so that they can know how effective their pages are. I think that's a direction we're moving in.*

Obstacles to Outcome Evaluation

Interviewees expressed frustration that they could not do more rigorous outcome evaluations, particularly on long-term impact. They discussed a number of obstacles, many paralleling those cited in the literature.

◊ The lack of guidance on which programs to evaluate:

> *There's a difference between an education program that has specific outcomes in mind, and these catch-all family days, where you just try to get people into the museum and have fun. The goal [of the latter type of program] is different; it is to engage visitors with the museum or the topic, or get them to come back for repeat visits, or whatever. That's different from a specific education outcome, where you want them to come away knowing this particular concept about your collections or your exhibition. How one defines an education program is itself a bone of contention within the community.*

◊ The difficulty of defining outcomes, particularly for informal programs:

> *What should the outcomes be from a family visit or a school visit or a 20-minute presentation? For the people who just walk in here and have a 10-minute or 20-minute experience, how do we decide whether that's a worthwhile experience or not?*

◊ The difficulty of measuring "soft" outcomes:

How do you measure this [inspiration and excitement]? With our after-school program, one thing that has been so fabulous is that we're seeing these kids come back with their parents on random weekends, and they're saying, "Look what I learned." [But] how would I know that they're going to be doing this? These are 8-year-old kids, and they feel comfortable in the museum, and they feel empowered because they have information that they can impart to their friends and family. How do you measure that?

How they are going to walk away from that experience and apply it to their lives is not generally as testable as one might think. … [We are just] planting seeds.

◊ The difficulty of measuring long-term impact:

You can't track impact on a one-time visitor. They can tell you, "Oh, it's great, and I learned x, y, z." But you don't really know if you're having an impact on that child wanting to go to school or being inspired to be an engineer or whatever it might be.

A lot of educational outcomes have to do with how someone integrates this material over time. How do you measure that?

We are considering [changing attitudes] by changing the way that school teachers teach about this [science] in school. It's probably, in my estimation, going to take a generation. So how long do you conduct the study?

◊ Lack of organizational capacity (skills, funding, time, personnel):

We talked with some people about how to put together a study to track our kids, but it was going to cost something like $75,000 or $100,000. We don't have that kind of funding.

These outcome evaluations require a lot of money [if you want to] interview people to find out if they're learning what you think they're learning.

Our calendar is such that you have to do, plan, implement and produce. It leaves very little time for evaluation.

*The issue with evaluation is the issue with everything else: it costs a lot of money. When you're talking about weighing whether you're going to **do** a program or whether you're going to be able to **evaluate** it, [the choice] seems to be simple.*

◊ Resistance among staff:

[We need to] encourage the belief that having definable goals and measuring ourselves against those goals is essential.

Evaluation is key … so we can measure our success, change things. [But] because everybody in this Institution gets so defensive about everything, I think sometimes [assessments] are designed to get good responses.

Evaluations of websites face additional difficulties beyond those associated with live programs. Assessment of website impact is tricky because there is no physical audience and often no way to identify who participants are. The cost of evaluation is particularly high, and the logistics and methodologies particularly complicated:

It's a matter of money. It's really needing to pay someone who knows what they're doing. … there are lots of sophisticated questions you can ask about your Web traffic, but there's a lot of programming that goes along with it. It's not impossible to do, but not many people have the resources to do it.

Feedback via the website would be as wonderful as the evaluation on the floor of the museum. The question is—how do you do it, and where do you put your resources first? … There are so many things happening in the world of electronic interaction and media that no one can keep up, I suspect, unless they've got a $500,000 contract with someone to do it for them. … You can only do so much.

Despite these obstacles, recognition of the need to show program results suggests that the units will be paying more attention to outcome evaluation. One indicator of a shift in this direction is that some units have hired education managers who have evaluation experience and strongly believe in its importance to improving programs, supporting decision making and resource allocation, and raising funds.

Funders are looking for more evidence on how their funds were well-used, or what impact they had. … [Donors] think of it as investing instead of just general charitable giving.

To justify your existence in a world where financial resources and money are tight, you really have to say that you are adding value, that you are making a difference. Just being able to say that 7 million people walk through the door … is an indication of something; but for all you know they came in to go to the bathroom or get out of the heat.

III. Discussion

Strategic planning, increased resources, structural changes, and other initiatives to strengthen education will come to nothing without effective management. The necessary starting point is to have qualified managers at all levels and to hold them accountable for the accomplishment of specific goals. Support of senior leadership is also critical.

Particular aspects of management that require attention are:

- ◊ Decision making guided by rigorous criteria that encompass central and unit education strategic plans, explicit priorities, clear decision-making criteria, cost-benefit or cost-effectiveness analysis, the results of program evaluations, and audience needs assessments.
- ◊ Improved communication within and across units to avoid duplication, improve the use of resources, and achieve synergies.
- ◊ Professional development for staff who are identified as potential managers, which may include formal training, opportunities to manage projects and supervise volunteers, and mentoring by managers.
- ◊ Inclusion of education managers on senior management teams.
- ◊ Criteria or guidelines for program evaluation that outline what types of evaluation should be conducted and how often, as well as feedback mechanisms to ensure lessons learned are applied. Periodic reviews of program portfolios will help ensure the relevance and value added of each program, assuming the results are used to redesign the portfolio by cutting weak programs, strengthening successful ones, and adding new ones to fill gaps and address changes in strategic plans at the central and unit levels.

While appreciation of the importance of program evaluation seems to be on the upswing across the Institution, the emphasis seems to be on outcome and output evaluation, rather than front-end and formative evaluation. The latter, however, can be critical in informing decisions about program development.

With respect to EDGE, while this database provides an incomplete view of what is being offered, it is the only pan-Institutional view available. It is also a useful tool for units that do not have their own tracking system, and leads to some reflection about what the units are doing. At the same time, important questions remain. On balance, is it worth the investment? Is it cost- effective? Will the units find it useful to enter intended learning outcomes, particularly if they do not carry out evaluations? In what ways will the information produced by EDGE, including the record of intended outcomes, be meaningful to the Institution and the units?

EDGE would benefit from a central office for education that provides it with a clear vision and accountability mechanisms. Useful actions might include:

- ◊ Clarifying EDGE's current and potential purposes, uses (e.g., outputs vs. outcomes), and potential benefits relative to its costs;
- ◊ Providing consistency in language, measures, and other aspects of the system;
- ◊ Clarifying and improving accountability measures and procedures for data entry (such as sampling rather than counting all instances);
- ◊ Continuing with steps to better address unit needs; and
- ◊ Continuing to streamline the data entry process and generation of reports and resolving technical and other issues.

Appendix 11: Structure and Organization

Central and Pan-Institutional

Many units, central offices, and advisory bodies contribute to education at the Smithsonian. However, no office within the central administration has responsibility for the strategic direction and overall coordination of education. There is limited Smithsonian-wide planning of resource needs for education (such as human resources, facilities, technology, and professional development for educators). This creates a confusing thicket of organizational entities that one interviewee described in these words:

> *I would say there are probably over 30 different pockets of educators around the whole Institution. … There are so many layers.*

SCEMS

SCEMS is the closest thing that the Smithsonian currently has to a central education office. However, its role has never been well-defined, and it lacks both the authority and the mission focus to be an effective central coordinating office. In interviewees' words:

> *SCEMS is not a policy-making entity with real clout that has the Secretary's ear. Like Affiliations, it is a brokering office. Every once in a while the stars line up and you get some big central initiative like EDGE. But there's no one speaking for education at the highest level.*

> *They seem to serve as their own unit, as opposed to bringing all the education resources from SI together. So you have all these units that are operating on their own, and you have this central educational unit that isn't really central; they are not centralizing things.*

> *I've always tended to think of SCEMS as "education at the Smithsonian," but I don't think SCEMS thinks of itself that way. They see themselves as another unit, and they're getting into that same pattern of autonomy that all the others are.*

Assembled out of staff pulled from several loosely related functions when it was formed in the late 1990s, SCEMS has always had a vague mandate, and has had to struggle for attention and support. Without clear guidance, it has evolved opportunistically, resulting in programs and activities that often seem scattershot—teacher outreach, administration of the pan-Institutional Heritage Month and internship programs, providing professional

training and other resources for museum personnel, representing Smithsonian education to Congress and other external stakeholders, coordinating a handful of central administrative educational initiatives (such as SCED, the EDGE database, and the smithsonianeducation.org portal), and miscellaneous programmatic offerings (such as the *Smithsonian in the Classroom* publication and a partnership with Montgomery College). Although sometimes tasked with central coordination or administrative functions, it has no authority to ensure compliance with the units. One educator summed up the ambiguity in SCEMS's roles and responsibilities in these words:

> *[There is] a huge disconnect between how the Castle thinks of SCEMS and the reality. The reality is that SCEMS is not set up to be a central coordination unit. If the Castle wants it to play that role, it needs to make that explicit. And even if the Castle wanted SCEMS to be a central coordination unit, I don't think it could, because education departments report to their unit directors, not to SCEMS.*

Another interviewee expressed his own puzzlement at SCEMS's role:

> *Who are they? What do they do? I don't get it. … Can I use them? … Can I call them? There is no good communication.*

Many interviewees mentioned SCEMS's inability to institute and maintain effective communication channels, and what communications did occur between SCEMS and the units were sometimes seen as a one-way street that provided few benefits to the units:

> *They tend to give us mandates that require a lot of work on short notice—"We need this for the Castle by the end of the week"—with no consideration of what is reasonable. These mandates have mushroomed in recent years. SCEMS never bothers to find out what we're already doing before it issues mandates.*

Another interviewee offered a similar view:

> *The office appears to be concerned almost exclusively with information that links the Smithsonian's activities to higher internal bureaucratic levels or to [SNB] members.*

Other interviewees were more sympathetic to the constraints and pressures under which SCEMS functions, sometimes referring to "responsibility without authority."

This is not to say that services and resources provided through SCEMS are universally unappreciated. Many interviewees had positive words about SCEMS:

SCEMS is really looking out for us. They're advocates [for education]; they provide training; they're trying to come up with language for the Secretary about what we do.

Some interviewees singled out specific SCEMS programs or initiatives for praise, such as Teachers Night, the Teacher Ambassadors Program, the formal training offered to Smithsonian educators in the Teaching for Understanding paradigm, the smithsonianeducation.org portal (particularly its alignment of unit materials with state curricular standards), and the February 2009 virtual conference on Lincoln.

On the whole, however, while some of its individual functions were praised, the message from interviewees was that SCEMS does not function effectively as a central education office. Some indicated that the reasons for this lay not with the personnel or management of SCEMS itself, but with the central administration's failure to unambiguously define its role, design the office accordingly, and provide it with the support and resources necessary to carry out this role.

On the other side, some SCEMS staff felt that the office's role as a central coordinating unit was as effective as the units wanted it to be—and that the real issue is the units' persistently negative view of central offices and initiatives.

Organizational Relationships

The relationship between the central administration and units providing education programming is poorly defined, and is often based more on personal connections than formal channels. For example, in response to questions about their relationship with SCEMS, many interviewees simply talked about the quality of their relationship to the director of SCEMS.

Exchanges of information and expertise among units are similarly informal, which limits exchanges across the Institution. As one interviewee explained:

I only know what's happening in other museums through a rumor system—gossip. You hear that so-and-so is working on this, or you get a call saying "Can I see what's in your collection, because I'm working on [a related project]?" I don't get any announcement.

The few mechanisms and bodies that do promote communication and coordination across units—such as SCED and the Educators Exchange—rely on voluntary participation and lack strong central support. As a result, units tend to pursue their educational agendas largely in isolation both from other units and from the central administration, constraining the

Smithsonian's ability to focus on choices that best serve the interests of the Institution as a whole.

Fragmentation and Its Costs

The decentralized organization of the Smithsonian is a major contributor to a problem that has been emphasized throughout this report: the fragmentation of education across the Smithsonian, and the failure of units to coordinate with one another or with the central administration. Among the costs of this fragmentation are the following:

- *Inefficiency*. A failure to leverage limited resources across units is an obvious cost of fragmentation. Particularly in today's budgetary climate, the Smithsonian cannot, as one interviewee put it, "afford redundancies and overlap" (this is discussed in more detail in Appendix 13, Financial Resources). Inefficiency also arises when units "reinvent the wheel" because they do not communicate with other units that may have relevant experience. An interviewee illustrated this point by discussing the interplay among the Smithsonian's library, archive, and museum communities in the digital arena:

  > *[They] operate in silos, with all of them believing they have answers that the other two are not paying attention to.*

- *Less effective fund raising.* A similar concern was raised with respect to fund raising, where the fragmentation of unit efforts was perceived by many interviewees as making it difficult to sell "Smithsonian education" to major donors. (This, too, is discussed in Appendix 13.)

- *Poor visitor service.* Many visitors, both online and physical, do not sharply differentiate among units, and tend to think of the Institution as a whole. The fragmented and inconsistent character of offerings across the units tends to leave some of them puzzled or frustrated. As interviewee summed it up:

  > *[Nineteen] different museums … [and] it's like they are not even related! … If everybody had similar ways of describing education and programs and things like that, it would really help the public.*

- *Isolation of smaller and off-Mall units.* Interviewees from some of the smaller units and off-Mall units often expressed frustration at their lack of visibility to the rest of the Smithsonian in terms of showcasing their work, receiving support, and interacting with the broader Smithsonian education community. This issue has emerged in other OP&A pan-Institutional studies as well.

Units

Almost all Smithsonian museums, research centers, and the Zoo have education departments, but their responsibilities and placement in the organizational structure vary greatly. A wide variety of education structures have evolved across the units.

Even though a great deal of education programming at museum units is tied to exhibitions, exhibition departments are typically separate from education departments, and the relationship between them is sometimes strained. In addition to exhibitions, many educational offerings are provided by departments other than education—research and curatorial divisions, offices of public programs, training units, web units, community outreach offices, and so on.

Several interviewees complained that education departments and the education function within units do not have seats at the senior management table. However, there has been a deliberate push in recent years to move education heads up in unit organizational charts:

> *Before, there had been as many as four organizational layers between directors and education heads. That has been much improved; today, there are no units where education heads are more than one layer removed from the director, and some report directly to the director.*

Fragmentation

Fragmentation is often a problem within units, as well as across them—particularly at larger units. Educational activities across different departments, offices, and functions are not always coordinated; education departments are sometimes left out of the loop with respect to activities or offerings that have an educational dimension; education is sometimes treated as an afterthought, and educators as non-essential personnel; and educators, curators, and other professional staff often separate into their own camps, often with limited communication and understanding among them.

Some interviewees described how education programming at their units takes place in many different places, at times without involvement from or coordination with the education department. One interviewee at one of the larger Smithsonian museums described how, at a meeting of staff from across the unit, participants were asked to identify their education programs on sticky notes and post them on the wall, resulting in general surprise:

> *When I asked everybody to walk around and read, they were, "Wow, I cannot believe how much education is happening here!"*

Another interviewee described the issue in this way:

> *There has never been a single education department. It's always been pockets of people working on their own area. … People just kind of stay in their own little world, and do their own little thing, and there hasn't been a central goal.*

As discussed in Appendix 8, Culture, there is a longstanding professional rift between educators and curators/scientists at many units, and the two groups often have difficulty working together. This also can reduce the effectiveness of intra-unit coordination on educational offerings and initiatives.

Some units have moved to address the problem of intra-unit fragmentation through management initiatives. One approach has been to set up interdepartmental education groups. The Zoo, for example, has the Zoo Education Group (ZEG), which meets once a month and, in the opinion of one interviewee, is a useful forum for sharing information and "looking at where people need support." On the other hand, the same interviewee also noted that it is still "pretty easy for all of us to go back to our little pockets and not communicate for a month."

Similarly, SERC has set up an education advisory committee that includes educators, scientists, and administrators. According to an educator:

> *[It gives us a chance] to explain our programs to the scientists and keep them up-to-date. It gives them an opportunity to ask, "Why don't you have a program on this or that?" They learned how we had to coordinate our programs and match them with state standards, curriculum standards.*

NMNH has also set up a group to bring together staff working on educational activities in different places around the museum, called Conversations About Museum Education and Outreach (CAMEO).

Some units have gone a step further and carried out organizational restructuring to address the issue. HMSG merged its curatorial and education departments to ensure that curators and public-engagement personnel work as an integrated team. NMAH has grouped public engagement and education functions (school programs, public programs, new media offerings, docents, and so on) under an Associate Director for Public Programs, and its senior leadership has taken steps to improve the relationship between these functions and

the curatorial side of the house. NZP has to a large extent consolidated education under the auspices of the Friends of the National Zoo (FONZ).

Best Practices

As part of the inquiry on structure, ten external organizations were contacted to discuss their structural arrangements and to comment on collaboration between education and exhibition development: The Art Institute of Chicago, Conner Prairie Museum, National Building Museum, California Academy of Sciences, Philadelphia Museum of Art, San Diego Zoo, Museum of Natural History in Los Angeles, Denver Museum of Art, The Mint Museums, and Denver Museum of Nature and Science. These are a subset of a group of museums recommended to the study team by their peers at other organizations on the basis of their reputations for quality educational programming.

In eight of the ten, education departments are strategically placed in terms of direct access to the director or executive director and collaboration with other departments. Five of the eight said that the education department is considered senior management, and in a good position to have its voice heard on decisions concerning their institutions. Only at one of the institutions, the Museum of Natural History in Los Angeles, did the study team hear interviewees complain that education is not as high a priority as it should be, and that relations among functions and departments need improving. However, the problem here appeared to be unrelated to structure per se.

In most of the external institutions that the study team looked at, education departments organizationally encompass public programs. However, there were exceptions, including the Museum of Natural History in Los Angeles, California Academy of Sciences, and Denver Museum of Nature and Science. In such institutions, interviewees suggested that distinctions between education and public program departments are maintained mostly because there are too many programs to cover in a single division.

Four of the institutions contacted recently undertook structural reorganization to either streamline the chain of command or break down silos among departments. An interviewee at one of these stated:

> *What we're doing is trying to go towards a more team-based approach to designing and delivering our guest experiences.*

Seven out of the ten institutions said there is a fair amount of collaboration between their education and exhibition departments, which in most cases means education representatives

are present on exhibition development teams. One museum educator felt curators and educators should work closely together because:

> *They say a curator's job is to create new knowledge, and educators are trying to make sure that knowledge is accessible to people at all levels.*

In four of the institutions, including the Denver Museum of Art and The Mint Museums, the exhibition department is separate from education. In three of them, including the Denver Museum of Nature and Science, exhibitions are organizationally situated within educational departments.

Dimensions of Organizational Structure

Among organizational theorists, three dimensions of organizational structure are accepted as the core elements that dictate financial, technological, cultural, and social relationships within an organization: complexity, formalization, and centralization.[111]

Complexity

Complexity refers to the idea that within an organization, many interrelated variables are at play in sometimes subtle ways. Because of this, it may be difficult to identify all of the relevant causes that contribute to a specific effect, and the environment can change in ways that are hard to predict. Complexity is often divided into horizontal complexity (among units), vertical complexity (hierarchical), and special complexity (geographical dispersion).

Within the Smithsonian, a high degree of complexity is seen in the wide variety of functions, staff, organizational layers, organizational interests, technologies, and so on that come into play in decisions about educational programming. For units such as SAO, SERC, STRI, NMAI's Heye Center, and the NZP Conservation and Research Center, as well as field researchers active across the globe and those who work in remote collections storage or research facilities, geographical separation from the Smithsonian's headquarters in Washington, D.C. adds to this complexity.

When such complexity exists, it becomes more difficult to manage effectively across the whole organization, and horizontal and vertical communications become a major concern. As discussed throughout this report, interviewees made it abundantly clear that communication

111 In an oft-cited article (Reimann 1978), Bernard C. Reimann discusses a number of other variables and points out that, although theorists may disagree on operational definitions, most of these variables are subsumed under the three overarching dimensions.

and sharing of information need to be improved within units, among units, and between the central administration and the units.

The challenges of complexity arise within units as well as across them. For example, within an organization such as NMNH with large numbers of staff and non-staff personnel working on a huge variety of projects in separate departments that may be physically isolated from each other, getting a handle on everything being done in the name of education—let alone effectively coordinating it all—is extremely challenging.

Formalization

Formalization refers to the degree to which functions and jobs are standardized across an organization. At the Smithsonian, the formalization of educational functions and jobs is generally low. As discussed in Appendix 10, Management, few centrally defined rules and standards for education programs exist, resulting in a high degree of variability across units. Decision-making processes surrounding educational programming tend to be unsystematic and are not based on clear, rigorous criteria; a great deal of managerial discretion in formulating and implementing programs often exists.

As discussed in Appendix 14, Human Resources, there is likewise little consistency across units in the roles, responsibilities, job descriptions and titles, and expected skills, experience, and training of Smithsonian educators, which tends to undermine their status as professionals in the eyes of their colleagues. Some Smithsonian educators have backgrounds in formal education, others in museum studies, others in the academic sector, and still others in miscellaneous professional areas loosely related to education, museums, or the subject area of their units. Some are generalists, while others specialize in particular areas such as school-related programs or online learning.

Centralization

Of the three core structural dimensions, centralization was the one most often directly addressed by interviewees. In general, the concept of centralization refers to decision-making points within an organization; at the Smithsonian, it is usually discussed in the context of the relationship between the central administration and the units, the transfer of information from the center to the units, and the appropriate role of the center. Interviewee comments in this area focused upon:

- ◊ Which activities are better performed at the central level, and which are best left in the hands of individual units;

- ◊ The balance between the center's ability to see the big picture and the individual units' familiarity with specific audiences and their needs;
- ◊ The costs and benefits to units of central mandates and initiatives; and
- ◊ Whether centralization would be an effective vehicle for improving education at the Smithsonian.

Economic aspects of centralization were also mentioned by some interviewees, and are discussed in Appendix 13, Financial Resources.

Several interviewees also discussed the prior history of attempts to change the balance between the Castle and the units in the educational area. Such reorganizational efforts were seen as partially successful at best. Several interviewees pointed out that such reorganization cannot be approached as a "one-time thing," and that longstanding problems cannot be solved simply by rearranging boxes on an organizational chart. They also noted that in the past, reorganizations have typically been triggered by internal factors such as changes in top leadership and its priorities, demands for greater autonomy from the units, and the increasing complexity of internal coordination. Reorganization was rarely portrayed as a considered response to changes in the external environment such as shifts in audience demographics, technological change, or the evolution of best practices in education, organizational theory, or museum practice.

A Central Education Office

Interviewees were split on the desirability of greater central direction or coordination of education as a way of addressing widespread concerns in the areas of complexity, formalization, and centralization. This issue was typically raised in the context of the pros and cons of a central education office, with SCEMS sometimes serving as a proxy for such an office (although as noted above, few interviewees regarded SCEMS as a truly effective central coordinating unit in its current form).

In general it is fair to say that interviewees at museums and research centers tended to be relatively wary of central coordination. By contrast, interviewees at central administrative and programmatic units, as well as external interviewees, tended to be more favorably disposed toward it.

Some of the issues and opinions surrounding greater centralization are covered in more detail in the discussions of an Under Secretary for Education and a possible pan-Institutional education strategic plan in Appendix 9, Leadership. Here, the focus is on some of the major issues surrounding greater proposed centralization.

In general, interviewees who did not favor greater central coordination of education worried that it would:

- ◊ Move decision making away from unit staff with detailed knowledge of their programs' subject matter and audiences;
- ◊ Divert resources from programming to bureaucracy—creating an emphasis on rules, procedures, and processes rather than creativity and inspiration;
- ◊ Impose an inappropriate degree of programmatic uniformity on units that have very different disciplines, priorities, and audiences; and
- ◊ Dissipate energy and resources on turf fights and bureaucratic processes.

Some interviewees also questioned the basic rationale for such centralization. The following is a small selection of the critical comments from interviewees about the prospect of greater coordination of educational activities by a central office:

> *Why do we need a central coordinating [education] unit at all? There is no parallel for that in any other functional area—research, collections management, exhibitions. There is no need to have an overarching strategic direction for education at SI; it couldn't possibly account for all the relevant differences [among units].*
>
> *When you centralize, you crush innovation and creativity. You don't allow for legitimate differences in units' needs and passions.*
>
> *Why does an Institution that is ostensibly about education in all its aspects want to separate out education as a function that needs central coordination? The units have very different needs.*
>
> *I would be very skeptical about the efficacy of a central education unit. It's a bit like a central development unit. Are those people front-line delivery people? Probably not. Or are they strategically planning people? They'd probably like to be, but each unit has such different missions and audiences that I don't think you can centralize something like that. You've got to be more customer-focused, which means you've got to be embedded in the unit, meeting your own customer needs. I think that putting something centrally up in the Castle is just too far away from the customer, and it just becomes another bureaucracy.*
>
> *I'm not sure that an ongoing Smithsonian-level education initiative parallel to the units would serve any purpose. I have an open mind about it. But right now,*

it hasn't been clear to me how that would really help. It would be redundant in some ways, and would compete for resources, [and] resources are so scarce to begin with.

Some pointed to the lack of success of past efforts to centralize education and to the current inefficacy of SCEMS in coordinating central initiatives as evidence that education was a function best left to the units.

By contrast, those who favored a greater degree of central coordination cited a number of potential advantages, including

- ◊ Greater leveraging of limited resources across the Institution in the pursuit of major initiatives and priorities, allowing the Smithsonian to achieve a more effective national and global educational presence;
- ◊ Greater collaboration in areas such as training, adoption of new tools and technologies, program development, audience research, and evaluation; and
- ◊ The creation of a more unified Smithsonian education "brand" that better serves audiences who think of the Institution as a whole, is easier to market to wide audiences, and carries greater appeal to potential donors.

Those who favored centralization also pointed to examples from Institutional history to bolster their case. For example, some pointed to the centralization process of OFEO and noted that, while the process was painful and not everyone even today is happy with it, it seems to have served its intended purposes. Others pointed to the OCIO-led efforts to create more pan-Institutional unity in IT, web, and digitization areas as promising, and probably necessary.

Among those open to the concept, the proper roles of a central education office were a subject of much speculation. The idea of a central entity that literally manages all the educational programming efforts of the units was clearly not on the table; literally no one among the hundreds of interviewees argued that this would be realistic or desirable.

However, a few interviewees did appear to favor a central office that had the power to set and direct some part of the units' educational efforts toward pan-Institutional priorities. Much more common, however, were the "coordinator" or "service-provider" models of the central office, in which such an office would shape unit efforts by providing effective mechanisms for cross-unit communication and information sharing, controlling monies earmarked for the pursuit of Institutional educational priorities and support of innovative programming, and providing valuable support services and resources in areas such as audience research, fund

raising, and marketing. Along these lines, several interviewees remarked that a central entity should strive not to duplicate activities undertaken by the units, but should look for ways to add value to what they do:

> *If it parallels the units, it would be redundant and compete for scarce resources.*

One interviewee suggested a "franchise model" that would accommodate legitimate unit differences, while at the same time improving coordination and efficiency by providing certain services and setting certain standards:

> *All of the individual [unit] franchisees would have their own businesses, but you have the corporation [at the center] that is providing the advertising and other services for all of those businesses.*

Finally, some indicated that a central unit should provide theoretical and philosophical direction for Smithsonian educational efforts, perhaps through collaborative work with leading theorists and practitioners of education from across the nation.

It is worth pointing out that some of the service functions suggested for a central office were appealing even to interviewees who did not, on balance, favor greater centralization. This suggests that it might be relatively unproblematic, from a political perspective, to have a central educational office that provides a core of basic value-added services—even if an office with a more active role in directing unit efforts toward pan-Institutional strategic priorities is deemed undesirable or unfeasible. Among these services are the following:

◊ Providing internal information sharing and information clearing-house mechanisms:

> *There needs to be more sharing of information—useful information—and having people get together. Like the public relations people; they have these monthly public information officer meetings … [where] each person talks about what their unit is doing. I would think that SCEMS or a unit like that would be able to do the same.*
>
> *[We need a] place where we can go to find out lessons learned by other departments when they've done similar projects.*
>
> *It would be great for us all to be able to share information and know who's working with what other [external] groups. Let's say we're working with the YMCA, and there's another unit that's also working with the YMCA—if we're looking for partnerships and collaboration opportunities, it would be great to be able to go to one central place and find out about that.*

I think [the role of SCEMS should be] to get the education units to interact more. Not to create more work or more meetings or anything like that, but just a collegial sort of interaction that we all find very little time for.

◊ Monitoring and researching trends, developments, and best practices in relevant fields, and disseminating the results to Smithsonian educators:

[A central office] could look into what other major museums are doing in education—colossal museums like the Tate Gallery. We have to be on par with them. What do they offer? How do they keep up with education on that highest level? … You would have to also look at huge foundations. What do they mean by education and programs?

[A central office could provide] analysis of the population of the visitors that comes here and trends in education; bring best practices to us; pass along the most important articles or journals; … and pay attention to what is going in on in education.

I feel comfortable saying that 70 percent of the scholarly research at SI is among the best in the country. But when it comes to education, it's probably more like 20 percent of what we do is based on the best thinking, and 80 percent is not. We ought to reverse that. That should be one of the goals of a central education office.

◊ Offering professional training for Smithsonian staff, to keep them abreast of developments in relevant fields such as museum education and educational technology:

[A central unit could] provide professional development for education and curatorial staff—building a learning community around cognitive development and learning research.

It would be really nice if, instead of all of us having our own little fiefdoms when it comes to professional development, there were some way of having a SI standard for professional development.

◊ Promulgating standards for programs and program assessment, and fostering a culture of continuous improvement:

Because the products the museums produce are uneven, I'd love to see the central administration make the rough edges smooth—to make sure that the quality of education at SI is where we want it to be, across the board. Not in a heavy-handed way. But I'd like them to be the place that helps us to raise standards.

[A central office could] coordinate the setting of program standards; help set accountability measures; manage independent program evaluation; and provide strategic investments for planning and implementation of grants that foster higher standards of program design and cross-unit collaboration.

[We could use a unit that could say] if you want to run a series of summer academies, here are instructions on how to do it for graduate-level credit. Here's an assessment tool that goes beyond counting the people that attend and how many hours they sit in a room. This is where you send the information so you get it in the national publication that goes out to all 50 states. Those kinds of things would be useful.

◊ Coordinating pan-Institutional programming that takes advantage of economies of scale. Such functions as the Heritage Month program already fall under this heading, and teacher training was mentioned a number of times in this context:

I'd love to see some kind of centralized seminar system for teachers. That would be really useful to us, and I'm sure a lot of other divisions.

It would be interesting if we had [a pan-Institutional entity] that helped organize, market, and raise scholarship funds for things like professional development for educators, so we weren't just all creating our mailing lists to get the word out.

What I would like to see the central administration do more than anything else is to take on the opportunity to do teacher training. That is something that all the museums could participate in.

◊ Performing audience- and market-assessment functions:

[A central education office] can provide useful feedback from teachers for content developers. [It] can interact with teachers and find out what really works for them—maybe conduct some focus groups across the nation. A lot of the time [unit educators] produce materials, but don't know whether those materials are actually serving a need.

◊ Taking responsibility for national and global advertising, marketing, and outreach efforts related to Smithsonian education:

Promoting SI resources as a whole is probably a responsibility for central; the individual units need to concentrate on [creating those] resources. … All the units struggle with this problem: "I've created this wonderful program! Now what?" … It makes sense for a central office to handle the national promotion of educational resources.

I think the marketing of our educational materials and programs is best done centrally, for SI as a whole, rather than having 19 different marketing efforts from individual units. It's more convenient and manageable for users, and it makes more sense in terms of SI resources.

There are other people at SI who are doing teacher training to local, regional, and national audiences, but we're all struggling to find the same audience. Rather than slick, glossy marketing materials developed centrally that will catch people's attention, we're all photocopying flyers and stuffing envelopes and sending out e-mails. My job is not marketing. My job is not advertising. That's a way central SI could really help out.

◊ Providing infrastructure and other forms of support for online education efforts, electronic outreach, and other areas where fixed costs are high and standardization is desirable:

[A central office could provide] a commons in the middle—innovation at the edges, a commons in the middle. For practitioners, the commons is a set of standardized resources and tools that they can use at their [discretion], and that they ***want*** *to use because it makes their jobs easier. … How can we position our assets to make them [not only] easier for ourselves to use, but also easier for [our audiences]? Isn't that ultimately why the nation has invested in this Institution?*

All of the Smithsonian bureaus could be players [in the distance-learning game], but not all of them could justify having their own studio. So it

probably would make sense to have a central equipment purchase and equipment maintenance, because then it would all be standardized, there could be someone down on the Mall that knew all the stuff. That would save on service contracts and stuff like that. There could be a central studio for smaller bureaus to use, and maybe even a central scheduler.

◊ Providing support—both financial and in-kind—for innovative and experimental efforts at the units:

[A central education office] should be the place that encourages and supports experimentation across the different units. A specific experiment or effort may be led by one of the units, but [the central office] should have funds to encourage people to do pilot programs. It should have funds, and support [units as they] think about how to go to scale. It should facilitate and broker collaborations among the units.

◊ Serving as a central point of contact for external collaborators, audiences, and stakeholders with an interest in the Smithsonian's educational function:

There definitely needs to be a central education unit for the Smithsonian, [if only] for the external people. The Smithsonian is huge. People don't know where to go or how to tap into it. The easier we can make the job for those educators—informal educators, home schoolers, whoever—who need to know about the resources of the Smithsonian, the better. People will want to use them if they feel like they have easy access.

When the Department of Education calls, who are they going to talk to? Every single education director? You need some type of presence. I see it as representation, but as a service role, too.

A central office that limited itself to a service-providing role in such areas was what one interviewee had in mind when he asserted:

If there are to be central services or resources for education, they have to be things that units can use if they want, but do not have forced upon them.

Discussion

There is a consensus among organizational theorists that, in the 21st century, continuous change and learning are central to organizational survival.[112] The decision to change the Smithsonian's organizational structure rests with the Regents, Secretary, and senior managers, who need to determine the educational goals of the Smithsonian and decide whether current structural arrangements support those goals. As one interviewee noted:

> *The real question is whether change is a true opportunity for creating a high performance environment, and making the Smithsonian a leader in informal education.*

If restructuring is deemed to be worthwhile, it cannot be undertaken lightly. Interviewees almost universally acknowledged that in an organization with a culture of autonomy and conservatism, change does not come easily:

> *Attempts to change require patience and persistence, because people regard change as a threat to their self interest.*

Further, sometimes half-hearted efforts at organizational change in the past have nurtured a measure of cynicism and fatalism among staff.

For these and other reasons, Smithsonian leaders need to take the potential costs of reorganization into account—for example, loss of skills, lower morale, and decreased productivity for a time—as well as the potential benefits. Major structural changes often test the mettle of even the most agile organizations, and are best undertaken in conjunction with an overall strategic plan that clearly spells out the imperatives underlying a break from the status quo.

On the whole, the study team believes that current structural arrangements are not conducive to the pursuit of national or global leadership in education. The current central education entity, SCEMS, suffers from an unclear mandate, lack of support, lack of authority vis-à-vis the units, and limited ability to offer both incentives and disincentives. It lacks the resources and mandate to promulgate pan-Institutional priorities or support cross-unit information sharing and cooperation.

The current organizational structure also allows considerable discretion at the unit level. This has some advantages, particularly in terms of the proximity of programmatic decision makers

112 This thinking dates back at least to the 1980s, when several organizational theorists, most notably Russell Ackoff, first stressed an organization's responsibility for discerning its own future and adjusting accordingly. The popular notion that organizational change is a permanent imperative soon followed.

to audiences and their needs. However, it also breeds a high degree of fragmentation and variability across the Institution, and hugely complicates both Institution-wide adaptation to external forces (technological, demographic, economic, and so on) and the coordinated pursuit of pan-Institutional priorities.

As discussed in the recommendations section of the summary report, OP&A would suggest a hybrid structure that leaves a good deal of discretion in the hands of the units when it comes to "front-line" issues, while strengthening a pan-Institutional educational identity through a central educational hub that focuses on

- ◊ Pursuing a limited number of overall Smithsonian educational priorities;
- ◊ Providing effective mechanisms for communications, information sharing, and coordination across units;
- ◊ Nurturing a culture of learning and innovation among education staff;
- ◊ Providing resources and services that contribute to raising the quality of unit education efforts; and
- ◊ Serving as a central advocate for Smithsonian education to the external world.

Appendix 12: Collaboration

I. Internal

Based on self-reported information from the units, the study team discovered that cross-unit collaboration at the Smithsonian is relatively rare, although some interviewees indicated it is on the rise. As one interviewee put it:

> *I have to say that the connections between the efforts at [this unit] and the rest of the Institution are incidental. They're not systematic.*

The exceptions are the central education-related units, which, because they lack space and collections of their own, tend to work with other units. The majority of inter-unit collaborations involve a central unit (SCEMS, TSA, APAP, SLC, SITES, and so on) working with one or more museums or research centers.

Just a handful of other units account for most of the other internal collaborations,[113] and typically they are the result of individual initiative and personal relationships:

> *A lot of what happens with me is because of the personal contacts that I've made—because we've personally established a relationship.*

Failure to collaborate may become an unaffordable luxury in an era of increasing budgetary pressures. At present, however, numerous barriers to intra-Smithsonian collaboration exist. These are discussed in the following sections.

Communication

The barrier to collaboration most frequently cited by interviewees was a lack of communication and awareness among units about what others are doing (see also Appendix 10, Management). Many educators expressed a desire to collaborate, especially with like units, but indicated that they were unable to identify opportunities for collaboration:

> *It's often difficult to know who you could be collaborating with. What I find difficult is you never know what's going on in other [units]. When they're doing something cool that could link to what you're doing, we don't find out about that. Or if we do, it's buried in a mass e-mail that you don't read.*

113 The study team did not receive data on collaboration from all units to which the request was sent. Among the units that responded, SAAM stood out as the most active collaborator.

Staff in units located outside of Washington, D.C. feel particularly disconnected from the rest of the Institution:

> *We are very isolated—intellectually, financially, and physically.*

> *I've never had any interaction with education departments or divisions from any other similar facilities. I assume that we have … some amazing human resources, and yet there is no framework for interacting among one another. Because we're removed from D.C., we don't interact with D.C.*

> *The other thing that has been a long-term source of frustration is our inability to collaborate with the rest of the Smithsonian. We tried. It's just been very difficult to get collaborative projects going. Part of it is the distance. We are physically quite far away. Part of it is we don't understand each other.*

This general lack of awareness is compounded by the difficulty of identifying appropriate points of contact. Some who have tried to contact other units about potential projects were frustrated in their attempts, as was the case for this interviewee from a unit located outside Washington, D.C.:

> *I can give you a very specific example of how we attempted to do something with Smithsonian Washington that we thought was a synergistic project, and basically [we] could not find anybody to talk to about it. I asked, and nobody knew who to send me to. We kept going in circles, and finally, because we had a deadline, [we gave up.] … We will be putting these exhibits on all over the country, but there won't be one [at the Smithsonian] in Washington, because we couldn't find anybody to talk to.*

Another added:

> *I thought there would be a point person at the Smithsonian per se that you could go to and say "We'd like to collaborate on a specific project—can you either tell us who to go to or tell us which unit would be the best fit?"*

Interviewees were frequently at a loss to suggest how to increase communication and awareness among the units—"Nobody wants more email," said one. But there was some agreement that the Institution could benefit from a face-to-face forum or technological infrastructure that facilitates information sharing and collaborative interaction. The need for such infrastructure is becoming ever more pressing in the face of technological, economic,

and cultural changes, and tools for collaboration are increasingly available. For example, a recent article in the influential journal *Science* noted that:

> *Aspects of the Web, such as social networks, video sharing, wikis, and blogs facilitate an environment that supports independent learning and enhances information sharing, participative behavior, collaboration, and possibly even creativity. … This is the world in which our children are growing up. (Smith 2009)*

It is also the world in which Smithsonian units operate. One education director noted that "We are moving out of the information age, and into the collaboration age."

Lack of Incentives

A central employee remarked that there already *are* some mechanisms in place to encourage collaboration, but staff lack incentives to use them. Interviewees stressed that individuals are not rewarded for collaborating with their colleagues in other units, and even face disincentives to do so. For example, one interviewee described how her efforts to contribute to other units' programmatic efforts had to be undertaken on her own time:

> *I've gone to different units to work at their events. … I don't get comp time for going to work at [another] unit's event, and that's one of those things that's not fostering [collaboration]. I might not get docked because I left thirty minutes early to go do it, and I appreciate that. But if I stay for another two hours, I don't get two hours of comp time either. It's not considered part of my duty to the Institution.*

Central employees who rely on staff from other units for their programs were keenly aware of this issue, and lamented the fact that they could not compensate their colleagues for their time. Two interviewees from central units brought this up:

> *[For one of our events we had to call on a couple of people from other units to provide technical assistance.] It was a fight to be able to give them time, because they had to be here late; they came in on weekends and were here late on the evening of the [event]. It was an ordeal to give them comp time to compensate them for being there. So the next time we asked they said, "I don't get anything out of this." That to me is really sad—that there is no way, if someone from another unit assists with something, to compensate them in any way. I'm not saying let's hand said individual a check, but we can't even give them comp time to [acknowledge] they did something over and beyond their duties.*

The reason I fought—and will continue to fight—to get money for this is that if the curators are giving me time, I must be able to reimburse them. They're all pressed for resources, for time, and everything else.

Another summed it up neatly:

It always comes back to incentives—people like the idea of collaboration in theory, but in practice they need incentives.

Cultural Barriers

In addition to the practical impediments cited above, the study team found that the culture of the Institution stands in the way of collaboration. As discussed in more depth in Appendix 8, Organizational Culture, the culture of autonomy that characterizes the Institution can be a problem in this area:

There's no sense of wholeness here, and I think there needs to be. Some people would battle that to the bitter end. It's just mind-numbing that there's so little sharing, and it would be advantageous to all of us if we could see the whole.

There's not a sense of linkage. It sort of extends to that whole culture of sharing here. I would bet that [others] would tell you the same thing, in terms of willingness to collaborate. There's no impetus to do that.

Another barrier to successful partnerships internally could be the silos that each [unit] has created, and the fear of partnering, because "they might get what we have" [in terms of credit], or we might get what they have" [in terms of work].

One interviewee at a central unit that must collaborate to produce programs described how this mentality sometimes surfaces in her relationships with other units:

SI is very insular; all the units live in their own silos and have their own turf and their own territory. Sometimes people like me feel we're encroaching on that territory, because collaboration is our job.

Another interviewee added:

The Smithsonian reminds me of the Interior Department—they're all in these balkanized, individual units that don't speak to each other. There is power in the synergy of those pieces if they can be brought together where it makes sense.

Lack of Support from Leadership

There was general agreement among interviewees that most unit-level leaders place no particular emphasis on collaboration with other units. One interviewee, referring to his unit's leadership, said:

> *All of us talk about [greater collaboration] and want to do it—the people who are worker bees … want to do it. But I think a lot of times there's lip service given to it, and it doesn't happen. It's not made a priority; and it should be if we're saying that we're all the Smithsonian.*

A corollary here is that greater collaboration is attainable if the leadership really wants it. One interviewee involved with a successful pan-Institutional collaboration spoke of the positive effect leadership had on that project:

> *We got support, we got encouragement. … It did help. Word came out as we were beginning this that the new Secretary liked cooperation across the bureaus. I think that encouraged more cooperation. Sending out those signals has a big impact.*

Time

Interviewees frequently reported that they simply do not have time to collaborate. Educators across the Smithsonian testified that they are already overstretched, and that proposals for collaborative projects often fall by the wayside in such an environment:

> *The level of cooperation isn't always there because there just isn't time and it isn't the priority. … Your director or your supervisor is always saying you need to spend more time on this or I have another project for you.*

Procedural Difficulties

Some interviewees who overcame institutional barriers to participate in collaborative projects found that it was hard work. Much effort appears to be spent navigating procedural differences among units:

> *It's hard to collaborate just in terms of processes at this place. I'm involved in a separate program that involves three or four different units, and just getting together is hard. Things are done so differently at different units; getting approval is hard.*

I agree intra-SI collaboration is difficult. … Everyone's processes are different—both administrative processes and just the concept of what a [given program entails] differs from unit to unit.

The implication appears to be that a central administration interested in fostering greater collaboration will have to push for some measure of standardization across units in the relevant processes and procedures.

Consequences

Interviewees spoke at length about the price the Institution pays for its failure to collaborate internally:

There is definitely turfism and fiefdom all over the Institution, and turf wars. And that's a problem. It means that, yes, there's complete inefficiency and duplication and infighting about things. It doesn't serve the public, and it makes everything twice as hard. We do teacher development workshops; so does every other unit at the Institution. Why? Because they got a call from a school or a [funder] and saw the price tag, and no one wants to let go of that, because it's money in their pocket. So even if [such activities] should by rights go through a particular office, no one wants to do that, because everybody needs the dollars.

Above all, interviewees pointed to the failure to leverage resources:

I would love for someone on top to say, "Look, if Xerox comes or IBM comes and they want to come and do a dinner, fine—charge them up the wazoo. But if it's a Smithsonian internal group that's coming to use an auditorium that otherwise is sitting empty on a Tuesday, don't charge them for it." Of course we should pay security and AV and [other variable expenses], but … we pay a fee just to use a lot of other spaces at the Smithsonian. … It's crazy. I just talked with two [SI] museum people this week who said, "Your auditorium is sitting empty, and we're going to the Department of Interior or the Department of Agriculture [for programmatic space]. Why are we taking people off the Mall when your auditorium is sitting empty?"

In addition to leveraging resources, collaborative projects provide individual units the opportunity to diversify offerings and reach new audiences. One interviewee noted that the benefits of internal collaboration, at least in today's conditions, appear primarily in the form of better programming, rather than economic savings.

Interviewees also noted that collaborative activities across units could contribute to fostering the Smithsonian's transformation into the type of learning organization it needs to become if it is to remain relevant in the future.

Promoting Internal Collaboration

The internal barriers to cross-unit collaboration at the Smithsonian can be overcome if this is a priority for the Institution's leadership:

> *We've got to be blasted from the top, it seems to me, saying this is a good thing to do. I think education will benefit tremendously from [cross-unit collaboration], as curatorial work does. There's some little bit of this going on at low levels, but it's not anywhere near enough. The Institution's got to stretch itself and be willing to allow easing up of these boundaries. Get directors together to talk about possibilities.*

Interviewees suggested that the central administration can promote greater collaboration most effectively by consistently stressing its importance as a matter of policy, building up central information-sharing mechanisms, and providing financial and other incentives to greater collaboration. As discussed, there are already bases upon which to build in all of these areas. A good example is the SCEMS-administered Smithsonian School Programming Fund (see Box 12-1), which provides funds to units on a competitive basis, based on criteria that include a collaborative element. Projects funded in this way have included *Posters to Go* (SAAM, NPG, and AAA), *East of the River: Yesterday, Today, and Tomorrow* (ACM and SERC), educational self-guided tours and related materials for school groups visiting the National Zoo (NZP, FONZ, and NSRC), and educational materials for the *Artful Animals* exhibition (NMAfA, NPM, NZP, NMNH, and the Discovery Theater of TSA).

II. External

External collaboration raises a different set of issues. Both central and museum/research units are involved in a wide variety of collaborative educational activities with external partners, including state and Federal government entities, schools and school systems, nonprofit organizations, universities, and corporations. Some are long-term efforts involving substantial resources and effort, others are smaller-scale or of shorter duration. At most units, external collaboration is more common than collaboration with other Smithsonian units.

Why Collaborate?

Benefits to Partners

The Smithsonian makes an attractive partner for organizations seeking to create, conduct, and distribute educational programming and materials. Smithsonian staff have considerable subject-matter expertise, and the Institution is capable of bringing other valuable and sometimes unique education assets to a partnership—for instance, collections and distribution channels such as the Affiliations network and the SCEMS educator contact list.

The Smithsonian's most valuable assets, in the eyes of many partners, are its brand name and reputation:

> *As soon as you say "Smithsonian," everyone wants to jump on board and be a partner and participate. It's a big deal.*
>
> *People look to the Smithsonian as a definitive source of information, particularly on the Web.*
>
> *What really sets the Smithsonian Channel apart is that it has the Smithsonian name on it, first of all. There is one and only one brand name such as that.*

Benefits to the Smithsonian

Partners can provide the Smithsonian with skills, facilities, technology, ideas, access to new audiences, and other benefits that the Smithsonian lacks or cannot secure in a cost-effective way. They may also provide funds. In the words of one interviewee:

> *We try to partner as much as we can, because different organizations can give you different perspectives and expertise—and also because the resources are becoming even more scarce these days.*

Partnerships are also sometimes used to get around restrictions on grants that some agencies—particularly the NSF—apply to Federal entities. Federal employees at some units are not permitted to apply for research or education grants as a principal investigator; applying as a co-investigator with a non-Federal partner, however, is allowed. (Smithsonian Trust staff are not subject to this restriction.)

External partnerships and collaborations cannot be expected to give the Institution literally something for nothing. However, because so much of the Institution's appeal to collaborators

is its status, brand, and reputation, it is in an enviable position with respect to external partnerships, because sharing such assets does not require any direct outlay of money.

Of course, any external partnership also entails some risk of failure, as well as some direct costs.[114] Some also carry opportunity costs[115] and indirect costs.[116] All must therefore be evaluated carefully before a commitment is made, to ensure that benefits are likely to outweigh such costs and risks.

Types of External Collaboration

NSRC and SAO

Two Smithsonian units, one of which is heavily focused on education, are themselves prime examples of large-scale, ongoing collaborative efforts: NSRC and SAO.

NSRC is a partnership between the Smithsonian and NAS, with the mission of promoting reform in K-16 curricular science education by building leadership capacity, providing professional development for teachers, and creating and disseminating research-based instructional materials on a whole-course basis.[117]

SAO is a partnership between the Smithsonian and Harvard University. Although its primary emphasis is cutting-edge scientific research in astronomy and astrophysics, SAO also has a large and well-respected education function. (Many astronomy research grants now carry a requirement for an education component that parallels the proposed scientific investigation.) Uniquely among Smithsonian education divisions, the focus of SAO's education unit is as much on scholarly research into the learning process as on the delivery of programming to end users. Its support infrastructure includes a studio and post-production facilities that have been used for a number of intra-Smithsonian educational projects, such as producing a recent series of student/teacher orientation videos to various Smithsonian units.

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114 In this context, these would include the costs of staff time and other resources devoted to negotiating, developing, and administering a partnership, as well as actual outlays of funds. (The monetary and non-monetary costs of interacting with other organizations through non-market channels are often referred to as "transactions costs" in the economics literature.)

115 "Opportunity costs" refer to the value of options that are implicitly or explicitly foregone when the decision is made to enter into a partnership. For example, partnering with one organization may preclude partnerships with that organization's competitors in the same field. In this context, opportunity costs also refer to the additional, often unforeseen costs of pursuing a goal through a partnership (which may take longer and be less efficient), rather than pursuing it alone.

116 "Indirect costs" here refer to costs other than those that are inherent in the conduct of the partnership itself—for example, damage to the Smithsonian's reputation if a partnership is not managed well.

117 Although having two organizations of this stature as its "parents" gives NSRC considerable status and gravitas, not all interviewees saw its joint administration as an unmixed blessing. One noted:

> *I think [NSRC is] disadvantaged by its dual citizenship. It gives both institutions an excuse not to fully own the program or fully support it.*

Affiliations

Another central unit, the Affiliations Program, exists for the purpose of mediating one specific type of long-term partnership. Its mission is to extend the Smithsonian's outreach by partnering with local and regional museums and similar organizations across the United States and beyond. These partnerships often include an educational dimension, as illustrated in the following quotation from an Affiliations interviewee:

> *A lot of Affiliates already have strong relationships with the school districts in their communities. They host a lot of teacher programming. … The challenge is to get [local teachers] to realize there are opportunities [to use Smithsonian resources] out there.*

Federal Agencies

Many Federal agencies have a mandate to perform outreach and education activities, but lack the expertise or facilities to do so effectively. Some have turned to the Smithsonian as a partner that can provide effective channels for such activities. Examples of such collaborations across the Institution include the following:

- SERC and the Environmental Protection Agency (EPA) partner on the Student Training in Aquatic Research (STAR) program for high-school and college students. Participants take learning cruises on SERC's 42-foot research vessel along the Rhode River and in the Chesapeake Bay, and visit both SERC and EPA facilities to observe scientific work and laboratory techniques first-hand.
- NOAA and NMNH collaborated closely on the *Sant Ocean Hall* exhibition, with the former agency providing exhibition team members as well as funding and in-kind contributions to the project (such as technology).
- The U.S. Postal Service (USPS) has long provided generous support to NPM. NPM and USPS collaborated to create the museum's *Arago* collections website, a portal through which the NPM collection and supporting data can be accessed.

Universities and Colleges

One important asset that higher education partners can provide is the ability to grant academic credit. The Smithsonian is not itself a degree-granting institution, but several of its units have partnered with colleges and universities to offer formal courses for credit at the undergraduate and graduate levels.[118]

118 Fellowships and internships are discussed in Appendix 7, Professional Training.

The division of labor in such partnerships is typically that a Smithsonian unit provides subject-matter expertise and its partner provides credit/degree oversight; responsibilities for elements such as administration, instruction, and facilities are shared as appropriate. Examples of such collaborative arrangements include the following:

◊ NZP and GMU recently entered into a partnership that gives upper-level undergraduate students the opportunity to spend a semester in residence at NZP's CRC facility in Front Royal, Virginia. The program is focused on conservation and grounded in natural science, with additional lessons in public policy, sociology, conflict resolution, and global awareness. Sixteen credits are granted from GMU for the semester, and non-GMU students are allowed to apply. Both the Smithsonian and GMU have invested heavily in the program, and other partners and funders have expressed interest, including the World Bank.

◊ CHNDM and the Parsons School of Design, a part of the New School University in New York City, have partnered on a masters program in the history of decorative arts and design. A CHNDM interviewee described the program in these words:

> *[Parsons] validates the degree, but the entire teaching takes place onsite here. So it's a very different feel when you go back-of-house at Cooper-Hewitt from most Smithsonian museums, because you're bumping into 100 graduate students in the curatorial departments. They may be working on an exhibition, helping on a cataloguing assignment—they're very much part of the institution. It's a bit like going into a teaching hospital.*

TSA also offers a masters program in the history of the decorative arts, in partnership with the Corcoran College of Art and Design.

◊ With Canada's McGill University, STRI conducts an interdisciplinary graduate program, the Neotropical Environment Option, for master's and doctoral students who wish to draw on multiple disciplinary perspectives to research tropical environmental issues in Latin America. Students do coursework in Panama.

◊ Several Smithsonian units partner with VCU to provide courses for graduate academic credit. For example, NZP offers courses for graduate students and conservation professionals at CRC, with credit available via VCU. NSRC's Teacher Academy professional development program also confers graduate credit through VCU.

In addition to credit-granting programs, Smithsonian units work with universities in number of other ways. For example, the George Washington University Department of Museum Studies has had a formal working relationship with the Smithsonian for many years, involving internships and similar programs. Smith College has a longstanding partnership with SAAM, which hosts summer internships for Smith students. NMAH and GMU have collaborated to produce the *Object of History* website and other projects. And a number of Smithsonian staff serve as adjunct instructors at the George Washington University, University of Maryland, Johns Hopkins University, and other universities. As noted by one interviewee, such arrangements bring benefits to both sides:

> *One of our exhibit designers teaches a masters-level course [at the George Washington University] each year. … It's an incredible learning opportunity for the kids, and the feedback for us as to what's happening in educational institutions is also amazing. It's not just a one-way street where we're imparting knowledge; they're giving us an extraordinary opportunity to find out what's happening in colleges and universities across the world.*

Schools and School Systems

A number of Smithsonian have partnered successfully with local schools or school systems, or are planning to do so.

For example, the opening of UHC at Dulles Airport created an opportunity for the Fairfax County and Loudoun County public school districts, both of which abut the UHC site. The UHC facility, unusually for a Smithsonian unit, was designed with education in mind, with dedicated classroom space onsite. The school districts, on a rotating basis, donate the full-time services of an experienced teacher (the "Aerospace Educator-in-Residence") to the UHC education team. Visiting students, now numbering approximately 8,000 annually, receive a combination of classroom- and museum floor-based instruction from NASM educators and Educators-in-Residence. Educators-in-Residence also support programming events, create materials for their colleagues, conduct teacher professional development programming, and perform other duties, such as helping to create the *Personal Exploration Rover* exhibit. The Educator-in-Residence program has served as a model for a similar program at the new National Museum of the Marine Corps in Triangle, Virginia.

The Loudoun County public school system also partners with NMNH to support the Museum's Naturalist Center, located in Leesburg, Virginia. According to an interviewee, the partnership saved the Naturalist Center program from being mothballed indefinitely:

Originally, they were going to put [the Naturalist Center] in storage, because all the exhibition spaces that were looked at as possibilities were not suitable, for a variety of logistical and financial reasons. [But] we found a partnership with the Loudoun County Public Schools. They provide us the space—just under 9,000 square feet of space, rent-free—and provide us with teachers-in-residence each year to help run our school programs. [So] the Center was able to remain open, and perform the same functions it did [when it was located] downtown.

Bridging the Americas is a NZP-facilitated program that creates partnerships between schools in the United States and in Latin America and the Caribbean. Participating teachers receive background information about migratory birds that pass through their area, then interact with classrooms elsewhere, using the program to facilitate sharing of observations and results.

Individual Smithsonian units have also on several occasions collaborated with the Washington, D.C. public school system or individual schools within it. For example, ACM partners with the District's Bernie Elementary School on its after-school Museum Academy program, and NMAfA has teamed up with the D.C. public schools and Links, Inc. (a community-based service organization) on *Studio Africa,* a new education program that explores the art and culture of Africa. NMAfA staff are enthusiastic about the *Studio Africa* program and its potential to engage a broader segment of the local student population, as seen in this remark from an NMAfA interviewee:

[This Museum wants] to bring in more of the D.C. community, not just tourists. I feel that with different partnerships throughout the city, you do bring in a different audience. I asked the children the other day when I was in one school how many have been to the Smithsonian, and maybe three raised their hands.

Many interviewees indicated that there was enormous potential for the Smithsonian to work in a more comprehensive way with D.C. schools, and to use them as a kind of learning laboratory for innovative programs that draw on the Institution's assets. Such a partnership is all the more appealing because of the well-publicized shortcomings of many of the District's public schools.

However, several interviewees also indicated that the D.C. public school system has been difficult to work with, primarily because of bureaucratic issues, although some suggested that the situation has improved in recent years. One interviewee argued forcefully that the rewards of a successful partnership with the District are likely to outweigh the headaches of negotiating and administering such an arrangement:

One of the things I continually hear is, "What are you doing in your own backyard? Why isn't SI partnering with Michelle Rhee to really do something about D.C. schools?" We could really infuse some great content and programs and training into those schools, and we're not doing that. Part of it, I'm told, is that we've tried to work with D.C. schools, but it's impossible. I have no doubt it's a political quagmire and beyond complicated. But why give up? We're still here, and they still need help.

Other Partners

Other public and private-sector organizations have also been valuable education partners for the Smithsonian and its units. The following is a selection of some partnerships that do not fall into one of the categories discussed above:

◊ NMNH has partnered with Google to link information from the Museum's Global Volcanism Project (GVP) to the extremely popular Google Earth program. The resulting Google Earth GVP page, a state-of-the-art interactive platform, is by far the single most-visited Smithsonian web page. An interviewee noted:

> *The GVP serves a population of people whose lives are affected by the potential hazards of volcanoes. … We have a social responsibility [to educate them about volcano risks].*

Google is now preparing a similar Google Earth presence for information on the planet's oceans, and the potential to enhance the reach of NMNH *Sant Ocean Hall* programming through this channel has not been lost on NMNH educators:

> *I want to be part of Google Ocean. … If I can be on top on that Google Ocean link, then they're going to come to my portal.*

◊ The Smithsonian is a partner in the *Encyclopedia of Life* project, an ambitious effort to organize information on all known species and make it easily accessible online to the general public, as well as more specialized users. Other major partners on the project include the Biodiversity Heritage Library, Field Museum, Marine Biological Laboratory, Missouri Botanical Garden, and Harvard University.

◊ NMAH recently joined *ThinkFinity*, a consortium of educational institutions funded by the Verizon Foundation that provides an online clearinghouse of educational resources for teachers, students, parents, and other users. The partners include the American Association for the Advancement of Science, Council for Economic

Education, International Reading Association, National Center for Family Literacy, National Council of Teachers of English, National Council of Teachers of Mathematics, National Endowment for the Humanities, National Geographic Society, John F. Kennedy Center for the Performing Arts, and ProLiteracy. The consortium maintains a strong national network to publicize partners' educational materials and train educators in their use. *ThinkFinity* has been very beneficial to NMAH, providing it with a fine education website, resources to help populate the site with suitable material, and access to new audiences, capable partners, and an effective distribution network for its materials. (See Box 12-1.)

◊ A total of five Smithsonian units have worked with a consortium managed by Ball State University to produce electronic field trips that are broadcast live via satellite to client schools around the country, as well as archived online for later playback. Through this medium, Smithsonian materials are reaching a wide audience, many of whom might not otherwise have been aware of what the Institution has to offer. The Ball State consortium provided almost all of the (very expensive) infrastructure, logistics, and specialized labor necessary for these projects; indeed, collaborating Smithsonian units even received funding to help defray their project-related costs.[119]

◊ SE has entered into numerous licensing agreements with broadly educational goals. Because of the profit motive in such projects, the Smithsonian approaches such agreements with particular attention to appearances and political ramifications, as discussed below. Projects include partnerships with HarperCollins (trade publishing), Showtime Networks (television), and the EF Tours. The latter allows EF to offer student tours to destinations throughout the United States under the name "Smithsonian Student Travel." One added benefit of the EF licensing agreement for Smithsonian educators is that part of the fee is allocated to the Smithsonian School Programming Fund administered by SCEMS, which supports innovative and collaborative educational programming with competitively-awarded grants.

◊

119 Recent economic conditions have forced the project's major sponsor, Best Buy, and other program sponsors to cut their support for the Ball State consortium, and its future as a Smithsonian collaborator is in some doubt. However, Ball State is not the only organization capable of conducting large-scale electronic field trip-type events. Closer to home, the Fairfax Network, operated by the Fairfax County (Virginia) public school system, also has satellite broadcasting and related programming capabilities. The Fairfax Network has partnered with NASM on broadcasting related to Space Day and other family day-type events, and on a series of electronic field trips sponsored by the northern Virginia chapter of the Armed Forces Communications and Electronics Association.

Box 12-1: *ThinkFinity*

ThinkFinity is an online education portal (http://www.thinkfinity.org) created by the Verizon Foundation. At present, 55,000 standards-based K-12 lesson plans, student materials, interactive tools, and reference materials from *ThinkFinity* content providers are available through the portal. *ThinkFinity* also provides funding for the creation of an individual companion website for each partner and for building out K-12 content.

NMAH was recruited as the consortium's history partner; its companion website is called *Smithsonian History Explorer*. Interviewees from NMAH were unanimously enthusiastic about the *ThinkFinity* partnership, noting that the Museum got a quality educational webpage it could not otherwise afford, financial and other forms of support for content development, marketing assistance, and access to a variety of other *ThinkFinity* resources:

> *For us, the challenge has never been the development of materials; it's the marketing and outreach. We print 5,000 copies and send them out, and that's it; we have no idea if they even arrived, much less whether they were actually used. Through Thinkfinity, there's a lot more monitoring; there are master teachers involved; there's a lot more review. This has been a wonderful partnership for us.*
>
> *They've been very generous; all the material lives on our site; we own it all. They just promote it. It's like a dream come true.*
>
> *We have two staff working full-time on Thinkfinity, funded by Thinkfinity. Thinkfinity has 30 million users. The numbers are astounding; they have an e-mail list of 140,000 teachers. So it was really great that we stumbled into this.*

The *ThinkFinity* partnership clearly has had major benefits for NMAH. However, some of its potential downsides for the Smithsonian as a whole should also be acknowledged. The fact that these do not seem to have been considered points to the lack of any organizational framework or managerial mandate to support reflection on the ramifications of individual units' decisions for the Smithsonian as a whole.

First, as discussed in Appendix 16, Technology, SCEMS has made considerable progress in setting up an education portal (smithsonianeducation.org) through which a wide variety of Smithsonian educational materials can be made available to educators and students anywhere at any time. SCEMS has the portal up and running, but the loading of content developed by the units is lagging behind expectations. One reason for this is that NMAH appears to be focusing on populating its more-visible *ThinkFinity* outlet instead. This

Box 12-1: *ThinkFinity* (continued)

puts the Smithsonian in the position of not being unified in support of one of its own major initiatives.

Second, the *ThinkFinity* partnership has implications for funding opportunities at other units. Once a major, long-term funding relationship such as the one between NMAH and Verizon is established, future funding options for other units (or for the Smithsonian as a whole) are likely to be reduced. Indeed, an interviewee at another unit noted:

> *[Since] my colleagues at the NMAH got a million dollars from the Verizon Foundation for their ThinkFinity website, we can't approach the Verizon Foundation for funding for our own projects.*

Additionally, while the Verizon Foundation is itself a nonprofit organization, it is of course associated in the mind of the public with the for-profit Verizon Communications corporation, and this creates an additional issue with respect to fund raising. Suppose Comcast, Time Warner, or any of the other dozens of Verizon competitors—or the wealthy donors associated with them—were looking to support history-related educational programming for K-12 students. Would the Smithsonian be in the running if this potential funder knew that the materials to be created with its donation would be distributed at least in part via a portal branded to a competitor?

- ◊ CFCH coordinates the annual Smithsonian Folklife Festival, a major annual cultural event in Washington D.C., now in its 43rd year. In addition to utilizing the internal resources of Smithsonian units, CFCH has over the years drawn on the assets of a wide range of external partners from all over the world, including foreign government organizations, in planning and executing the Festival.
- ◊ STRI, McGill University, and the government tourism bureaus of Panama and the province of Colon have partnered on an education project that brings local stakeholders to STRI's Galeta Point site to learn about the ecosystem that supports their livelihood, and it can be sustained. A STRI interviewee noted:

> *We worked with [our partners] to provide training to the local fishermen … breaking down the walls of strife, finding an alternative, working together with other agencies, private and public. We are now a marine frontier.*

◊ A number of smaller scale or one-time collaborations on educational projects are taking place at any given time across the Smithsonian.

Issues with External Collaboration

Speed Bumps

Interviewees discussed a number of factors at the Smithsonian that, while generally not preventing fruitful external collaboration, may slow the process or increase the difficulty and cost.

For example, there is a widespread sense that the Smithsonian tends to be excessively bureaucratic when dealing with partners, especially when central offices such as OFEO and Office of the General Counsel are involved, which can reduce the Institution's appeal as a collaborator. Some of the bureaucratic issues may relate to the culture of risk aversion (discussed in Appendix 8, Organizational Culture). As an organization, the Smithsonian has little tolerance for risk or controversy, and this encourages strict adherence to bureaucratic procedure and extensive documentation to demonstrate due diligence.

Likewise, issues of ownership—both legal and professional—of Smithsonian content can create snags, particularly when electronic distribution is involved. A theme echoed in a number of interviews was that some of the opposition to making digital versions of Smithsonian collections available online was tied to curators' sense of ownership of the collections and resistance to disseminating them without curatorial validation. One case mentioned by an interviewee illustrates this point: according to this person, Apple's *iTunes U* has expressed an interest in hosting Smithsonian content, but negotiations between the Office of Contracting and Apple have been bogged down around data ownership. Similar issues can be anticipated for future partnerships that include a Web 2.0 delivery component.

Because of the decentralized nature of the Institution, there is great potential for confusion if the role and authority of different Smithsonian players working on a collaboration are not clear, both among those players and vis-à-vis external collaborators. The study team heard several anecdotes about misunderstandings or conflicts that arose because Smithsonian staff engaged with external collaborators were not reading off the same page. In one case, a project-related deliverable did not arrive as expected, and an irate collaborator nearly withdrew from the project as a result. In another, a collaborator was independently approached by Smithsonian staff other than the designated point of contact for the project, again resulting in confusion and ruffled feathers.

The difficulties of internal collaboration among Smithsonian units can also create problems for external collaborations—for example, when partners assume that access to one Smithsonian unit, particularly a central unit, means access to the resources of the Smithsonian as a whole.

In a few cases, interviewees expressed disappointment that particular partnerships failed to live up to their potential, or did not do so as quickly as hoped because of start-up difficulties, unforeseen problems, or the need to refine programs through trial and error. The most prominent example is the Institution's partnership with CCSSO. The partnership, initiated with much fanfare in 2006, has significant potential to leverage the Smithsonian's educational reach across the nation, and has generated some value for both sides. However, most interviewees who discussed the CCSSO partnership found it difficult to identify concrete strategic benefits for the Smithsonian, and some noted specific areas in which it has come up short, such as providing practical support in publicizing and disseminating Smithsonian materials on a national basis. Some also noted that it is expensive and time-consuming to administer. While only a handful of interviewees were willing to write off the CCSSO partnership, most believed it is performing short of its potential. (See Box 12-2.)

Partnering with For-Profit Entities

Collaborations with for-profit firms—especially if they involve exclusivity or even the appearance of it—need to be handled extremely carefully, to avoid damage to the Smithsonian's reputation and brand.

The exclusivity question is particularly thorny because the Smithsonian is a public entity largely funded by the U.S. taxpayer, which has historically maintained, for the most part, a policy of free and open access to its collections and resources. One of the most controversial developments at the Smithsonian in recent years was a 2006 agreement with Showtime Networks that some feared would give the latter exclusive access to more-than-incidental use of Smithsonian resources in film and video productions. The long duration of the agreement (30 years), secrecy surrounding its precise terms, and lack of consultation with stakeholders in negotiating it created a perception in some quarters that the deal was not consistent with the Smithsonian's responsibilities as a public trust, leading to strong objections from Smithsonian staff, members of Congress, independent film makers, and others. While time has healed much of the public relations damage, the case remains an object lesson in the potential pitfalls of partnerships with for-profit entities, and the need to approach them in an open, transparent, and sensitive way.

Box 12-2: The CCSSO Partnership

The Council of Chief State School Officers (CCSSO) entered into a formal collaboration with the Smithsonian in 2006, with the goal of motivating K-12 student achievement through the use of Smithsonian resources. A steering committee was formed, with representation from both CCSSO and the Smithsonian, as well as the U.S. Department of Education. It established a five-year strategic plan, built around four organizational goals. These goals, with examples of activities derived from them, are the following:

- ***Access by the Smithsonian to state education agencies and their networks, and access by CCSSO to Smithsonian education products and services.*** SAAM is developing a resources page for the website of the California Department of Education's Visual and Performing Arts Division that will showcase a different SAAM artwork each month. SCEMS has conducted professional development workshops for more than 500 South Dakota educators, to teach them how to access and use Smithsonian educational materials and programming.

- ***Professional development activities at the Smithsonian for CCSSO National Teachers of the Year.*** The Smithsonian has hosted an annual series of workshops for Teacher of the Year awardees from each CCSSO jurisdiction, and has recruited a cadre of awardees to serve as Smithsonian Teacher Ambassadors, who conduct workshops with colleagues in their home states to showcase Smithsonian educational programs and materials.

- ***Professional development opportunities at the Smithsonian for CSSOs, their Deputies, and their staff members.*** The Smithsonian has hosted or contributed to a number of professional development opportunities for CCSSO personnel, including workshops for the State Collaborative on Assessment and Student Standards (SCASS) program. CCSSO is working with NSRC on science education reform efforts, including hosting a national leadership development and strategic planning symposium with a number of state-level education leaders.

- ***Development of grade-level content for teachers to use in conjunction with standards-based curricula.*** SCEMS and CCSSO/SCASS collaborated on the fall 2007 issue of *Smithsonian in Your Classroom,* "Civic Responsibility: World War II on the Home Front," which featured a SCASS model curriculum unit based on Smithsonian collection objects. (The .pdf version has been the most-downloaded SCEMS resource on the smithsonianeducation.org portal.) Also, a partnership initiated at a CCSSO conference in New Orleans led to CHNDM receiving

Box 12-2: The CCSSO Partnership (continued)

donations from the Alcoa Foundation and Microsoft Partners to hold its *City of Neighborhoods* program in New Orleans.

Interviewees generally saw the partnership as having great promise:

> *The CCSSO partnership is critical to the Institution's program of education outreach. Senior management should be active on the steering committee.*
>
> *The promise of the relationship is very great, because, after all, they are charged with the public education of over 50 million school children.*
>
> *[The CCSSO has] the power of convening top public educators around the country on critical issues … we should be working carefully and closely with them to bring the right people to the table to discuss these issues.*

However, there was also a general consensus among those familiar with the project that it has yet to reach anything like its full potential, and some saw it as having been disappointingly slow to get up to speed:

> *I think the agreement with the CCSSO is interesting but superficial, to be candid. … I don't think it is a deep partnership; there is a lot of room for improvement.*

III. Discussion

Collaborations, both internal and external, are likely to bring increasing benefits to the Smithsonian as it moves into new technologies and areas of education.

Internal collaborations allow the Smithsonian to leverage its limited resources in a more effective way, share lessons learned, serve audiences more effectively, and achieve cross-disciplinary perspectives that a single unit could not. The Smithsonian and the units are currently missing many benefits that could accrue from more collaboration across the units. To foster more cross-unit collaboration, the Smithsonian will need to address the administrative and cultural obstacles to it, and offer incentives to units and staff to engage in it. An important initial step would be to support and expand mechanisms for sharing

information about education activities and resources across the Smithsonian. In addition, there would be benefits to affording off-Mall units a greater presence on the Mall.

External collaborations provide the Institution with access to expertise and specialized resources that it lacks, promise to help it stay on top of the fast-changing worlds of IT and educational methodologies and technologies, and extend its reach. However, before entering into agreements, potential collaborations and partnerships will need to be explored thoroughly to ensure that expected benefits are sufficient to justify the transactions costs and risks.

Appendix 13: Financial Resources

Money for education is a perennial issue at the Smithsonian—as it is for most programmatic and capital needs.

Sources of Funds

Reliable and consistent pan-Institutional numbers are not readily available for the sums received, budgeted, and spent for education by the units. Because of the lack of clear definitions of "education" and "educators" at the Smithsonian, an unambiguous accounting of education expenditures is not possible.[120] However, enough fragmentary data exist that some generalizations can be cautiously drawn.

Funds for education-related salaries and expenses come from a variety of sources:

- ◊ Congressional appropriations;
- ◊ Trust funds allocated out of general unit budgets;
- ◊ Foundation and individual philanthropic gifts and grants;
- ◊ Corporate gifts, grants, and sponsorships;
- ◊ Intra-Smithsonian transfers (from the Smithsonian Women's Committee, Smithsonian School Programming Fund, Latino Initiatives Pool, and so on); and
- ◊ Revenue-generating products and services.

The relative weight of these sources varies greatly from unit to unit. However, in general it is fair to say that:

- ◊ Although there is wide variation, across all units Congressional appropriations for salaries and expenses are by far the largest single source of funds for education (see Figures 13-1 and 13-2);
- ◊ Congressional appropriations for education go mainly to the salaries of permanent Federal education staff, rather than to programmatic operational expenses;[121]

120 An extreme illustrative anecdote emerged in an interview at NMNH, in which the interviewee pointed out that the museum could be said to spend anywhere between $120,000 (using only the unrestricted, non-salary budget of the education office) and $20-$25 million (using a broad definition of educational activities, and including salaries) on education annually.

121 About 55 percent of Smithsonian educators are Federal employees.

Figure 13-1: Sources of Funds for Expenditures Coded as Education, All Units, FY 2003-2008 (Source: ERP)

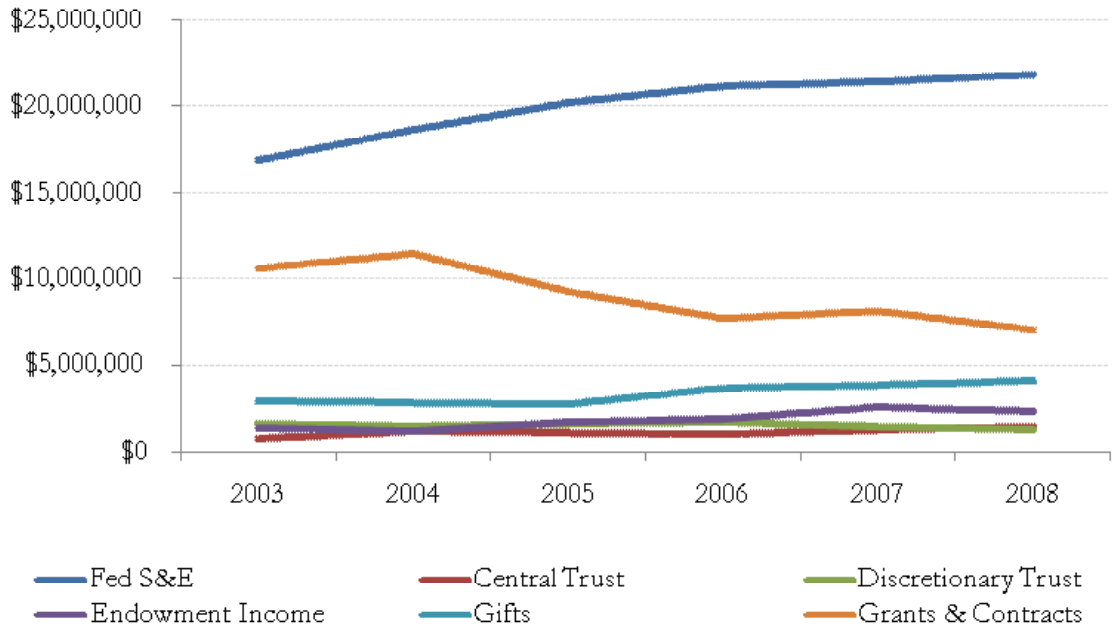
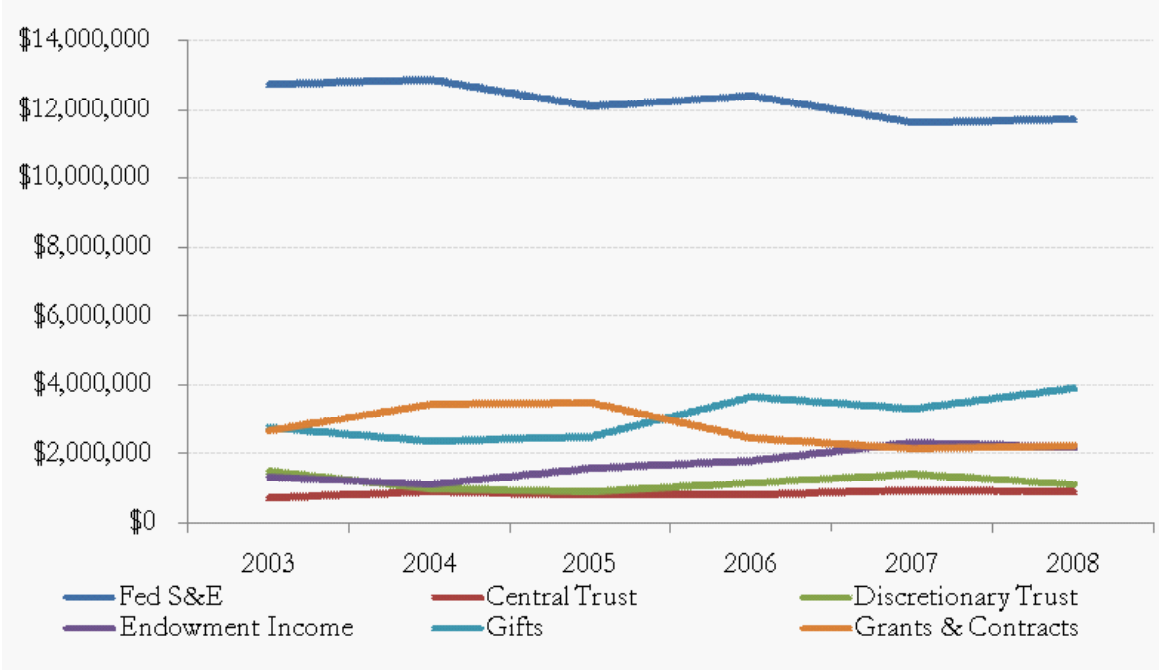


Figure 13-2: Sources of Funds for Expenditures Coded as Education, All Units, Excluding NMAI and SAO, FY 2003-2008[a] (Source: ERP)



a. NMAI and SAO are excluded because they had relatively large education budgets that experienced significant fluctuations over the time period covered here.

- ◊ Foundation, corporation, and individual philanthropic contributions (gifts, grants, and sponsorships) tend to be targeted at specific programs or programmatic initiatives, rather than at general support for educational staff and infrastructure;[122] and
- ◊ Revenue-generating offerings are a negligible funding source for most units.

Concerning the last point, notable exceptions include the following:

- ◊ SE aims to generate net revenues (after salaries and expenses) for the Institution;
- ◊ FONZ aims to generate net revenues (after salaries and expenses) to support NZP;
- ◊ Several units and sub-units operate on a cost-recovery basis, although typically some part of their basic salaries and expenses is borne by the Institution or the parent unit (through allocations of Federal or Trust funds), or covered through grants; these units include TSA, NSRC, SITES, the Folkways division of CFCH, and the National Anthropological Archives division of NMNH;
- ◊ SEEC charges tuition to cover part of its salaries and expenses, and offers fee-based consulting services, the receipts from which cover scholarships for low-income children attending the SEEC preschool;
- ◊ SERC has a very limited unit-allocated budget, and, in comparison with other Smithsonian museum and research center units, covers a relatively large part of its annual expenditures through program fees;
- ◊ Other Smithsonian units also have occasional, miscellaneous revenue-generating offerings. In these cases, fees generally serve to defray the direct expenses of the offerings themselves.

The Office of Development (OD) maintains data on contributions in the form of gifts, grants, and sponsorships, and classifies all external contributions as support for (1) education, (2) exhibitions, (3) research, or (4) facilities. The study team looked only at contributions coded as education for the years 1995-2007. Figure 13-3 shows the split among contributions from corporations, foundations, and individuals or family foundations. However, it is important to note that these data provide at best a conservative lower estimate of the educational activities supported by external contributions, because contributions coded in the other three categories often include an educational component. For example, an exhibition grant may support education programs directly tied to the exhibition—indeed, the exhibition itself might be considered an educational offering.

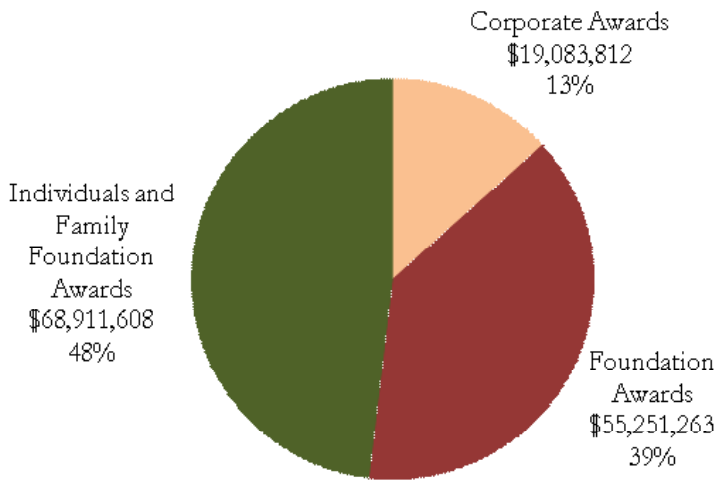
122 Some funds go to educational endowments and other arrangements that allow their use in a more flexible and discretionary way.

Overall, the funding picture for education remains somewhat blurry not only for the Institution as a whole, but also for many of its constituent units. The study team agrees with the assessment of one interviewee who related:

> *A lot of times the education budget is sort of rolled into an exhibition budget. In other cases, it's … these mysterious Trust monies that sometimes people are not quite sure where they come from. … When I talked to education folks at some museums, they weren't quite sure* ***how*** *education got funded at the end of the day.*

Figure 13-3: Sources and Amounts of External Contributions for Education, Total for 1995-2008[a]

Source: Office of Development



a. Data for the foundation awards run from the beginning of FY1995 to July 31, 2008. Data for the other categories run from the beginning of FY1995 to December 31, 2008.

Adequacy

Interviewees often complained of inadequate resources for education. This was typically framed in terms of a mismatch between resources and responsibilities that results in long hours for education staff, sacrifices in program quality, or an inability to provide certain desirable offerings. A particular concern voiced by several interviewees was the impact of current funding levels on the Smithsonian's ability to keep up with rapidly evolving technologies. One interviewee summed up this concern as follows:

> *Over the last ten years, the money has decreased just when we needed to ramp it up. … We are certainly not cutting-edge.*

Another elaborated:

> *We should be doing our own Wikipedia. We should have searchable databases. We should have our own electronic photo library. We should be at the [leading] edge. … We should be leading the museum industry, especially in the futuristic stuff—and we're not. We're embarrassingly behind because of a lack of resources and [bad internal] communications.*

The study team cannot verify the alleged inadequacy of educational funding. This is not only because of the limitations of existing data discussed above, but also because the study team lacks an objective measure of adequacy in this context. The key unanswered question is "adequate for *what?*" A meaningful definition of "adequacy" might be framed in terms of a reasonable minimum level of funding to achieve explicit strategic goals for education. But such goals do not currently exist at most units or the central Smithsonian.

Nevertheless, some general observations on the adequacy of education funding can be made. First, many staff who have been at the Institution for at least several years have experienced developments that would likely create anxiety about funding. These include:

- ◊ Reductions in force (RIFs) and layoffs affecting educators;[123]
- ◊ Hiring freezes that have resulted in unfilled vacancies in education positions;
- ◊ Rising expectations for national outreach unaccompanied by commensurate resource increases; and
- ◊ Rising expectations for web-based programming unaccompanied by commensurate resource increases.

Second, anxieties about resources are by no means limited to education staff. For example, scientists interviewed for a recent OP&A study on interdisciplinary scientific research also complained about the tightening of operational funds and need to devote time to administrative and fund-raising tasks that kept them away from their research.

Among those interviewed for this project, however, there was a strong sense that the tight budgetary environment was not the whole story, and that education is consistently

123 RIFs refer to cutting Federal positions, while layoffs is the term for Trust employees. Some interviewees suggested that the RIFs in 2002 disproportionately affected educational staff, although the study team cannot confirm this.

shortchanged *relative to other programmatic areas*. For example, interviewees suggested that requests for unit funds for educational programming are less likely to meet with success than requests related to scholarship or research. Likewise, there was a widespread conviction that education expenditures are uniquely vulnerable to cuts in the face of cost overruns in other areas—that is, education is the "first thing to be cut" when money gets tight.[124] As one interviewee memorably put it:

> *Education is always that pinky finger that gets lopped off. … As soon as something else goes over budget, education gets hit.*

Another phrased it this way:

> *You think about everything else before you think about education. It's the last line item on the budget. You think about air conditioning and sweeping the floors before you think about education.*

In some cases, interviewees accepted this as inevitable. For example, interviewees at NZP conceded that when education competes with animal care for funds, animal care must come first. However, in other cases, interviewees questioned why education should be seen as such an easy target.

Third, there appears to be a great unwillingness among educators themselves to embrace the idea of bringing resources and programs into alignment by taking some programs off the table when facing resource constraints.[125] This seems to reflect the lack of explicit priorities and goals for education at most units, and it practically guarantees a sense of constant overstretch as new programs and responsibilities are layered on top of existing ones.[126] One interviewee, commenting on this tendency, conceded that attitudes in this area may have to change in view of current financial realities:

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124 The tendency to cut educational components from exhibition budgets in the face of cost overruns was brought up several times, and this point has emerged in other OP&A studies, including the major 2003 overview of exhibitions (Smithsonian Institution, Office of Policy and Analysis 2003). However, it would be difficult to estimate the actual extent of the problem without an in-depth study of exhibition budgets. Interviewees did note specific instances of this pattern in the cases of the *Asia Trail* project at NZP and *Sant Ocean Hall* at NMNH, although they also indicated that the units undertook subsequent fund raising to support education associated with these exhibitions. Some interviewees suggested that marketing and advertising components are at least as vulnerable as education.

125 Except when programs are eliminated because external funds earmarked for their support are lost.

126 At some units, it also reflects the personal identification of staff members with particular programs, an issued discussed in greater depth in Appendix 10, Management. For example, one interviewee noted:

> *People didn't want to let go of their programs. I mean, these are programs that were grown up by individuals, and they are willing to add new programs, but they don't want to let go of any of the ones that they are doing. So it's trying to make them see the benefit of change.*

> *The theme now is that we're expected to "do more with less." But maybe we can't do more. So then you have to be really tough and say, "What do we do now that is not so critical to the main theme?"*

Finally, there were several units where interviewees did not consider funding to be a problem, or where comments about resource limitations were paired with admissions that the unit was doing relatively well compared to peers. Not coincidentally, these tended to be units whose directors have reputations for supporting and promoting the educational function. In one case, an interviewee noted that the key to avoiding resource pressure was to establish priorities for the education function and refrain from overextension:

> *I don't think we actually need more resources for education. … If we focus on some [important] things rather than going off in a number of different directions depending on the inclinations of particular members of the research staff or collections staff, then I think we have the resources we need to produce content.*

Regardless of its justification, however, the widespread perception of overstretched resources among education personnel has important implications. For example, it is likely to complicate the process of obtaining buy-in for Smithsonian strategic educational priorities. Unless such priorities are backed by additional funding, many unit educators will tend to see them as an additional demand on resources that, in their view, are already inadequate.

Indeed, as a more general proposition, many interviewees stressed that the only effective way to ensure unit buy-in for central educational priorities would be to back these priorities with significant central funding. For example, one noted,

> *Universities are not like school systems; they are confederations of independent scholars. If you want them to do something, you just pay for it. … If you want intensive collaboration that requires time, somebody has to foot the bill for it. I don't blame the universities; that's just the way they work. And I don't blame the units at the Smithsonian. The Smithsonian resembles a university more than any other kind of organization.*

Another interviewee had a more pithy description:

> *It's like the analogy of herding cats. You can't herd them, but when you put the food out, they all come running.*

Fund Raising

Responsibility for education fund raising is shared between OD and the units. Unit development heads report to the director of OD as well as to their own unit directors. Units are obliged to inform OD of their fund-raising plans; the latter maintains a database of funders and acts as gatekeeper to prevent units from working at cross-purposes. For example, if multiple units plan to approach a single funder, OD will determine the funder's attitude toward multiple asks; depending on the response, OD will either allow the units to proceed, or will assign a sequential order in which they may approach the funder.

In addition to tracking and coordinating unit fund-raising efforts, OD supports unit (including central unit) fund raising in different ways—researching prospects, writing grants, packaging grant requests, and so on. The extent to which units take advantage of the services varies. Units with weak internal fund-raising capacity may seek OD assistance for most or all of their fund raising, while those with more robust internal resources may do so only rarely.

The OD system received mixed reviews from interviewees, although most acknowledged that in the end the system is necessary to prevent chaos. Some interviewees praised OD for successfully imposing a degree of coordination on the fund-raising efforts of the units:

> *It gets back to the idea that you can't have a funding source coming back to the Smithsonian and saying, "Your people don't know what they're doing; they're all coming to me." So you have to go in turn, and that's where the gatekeeper comes in. That's a perfectly good way to do it.*

Interviewees indicated that the system is particularly helpful for coordinating contacts with the small number of organizations that do a lot of pan-Institutional giving that cuts across units. There was a general consensus that, a few "renegades" aside, the situation has improved in the past few years, with most units working conscientiously within the system most of the time.

At the same time, some interviewees noted cases where units continue to get in each others' way—for example, two or more units approaching the same donor to seek funds for similar programs without coordinating their efforts. One interviewee was less concerned about such direct conflicts than about the more general problem of dozens of Smithsonian units competing with one another for a relatively limited pool of potential funds, and perhaps wearing out their collective welcome:

> *Something we have to brace for is that we have [NMAH] planning to build its own education center just when [NMNH] is going to build a new multi-million-*

dollar education center. And I'm sure there will be more units that want expensive education centers. Why couldn't we have one big education center that everyone uses? How about in the Arts and Industries building? … At a certain point, how can we continue to raise money from the same sources for the same basic things that happen to be in different units? You want to say, "Listen kids, talk to your neighbors! You want to raise money for the same thing we just raised money for next door!"

Other concerns mentioned by interviewees included the dramatic understaffing of the development function relative to peer institutions (at both OD and most of the units) and the administrative burden that compliance with OD's system imposes on the units.

In terms of fund raising for educational activities per se, the study team heard repeatedly that, relative to other programmatic and capital needs, education is an "easy sell." One unit director noted:

[Education] is a great way to bring in grants, donations, and so on. People like to give money for educating kids. They don't like to give money to fix escalators and toilets and all that stuff.

Another interviewee who worked in the development area asserted:

I still think education is prime; it gets funded more than anything. Education, health, and saving the planet—those are the three things.

Indeed, the appeal of education can be so great that some interviewees noted ruefully that it was sometimes used by development staff more as funder "bait" than for its own sake. As one educator put it:

Some [development] folks do try to help us. But others drag us out to donors for a dog and pony show, to demonstrate "we do education." But the money they are trying to raise doesn't necessarily come back to … education.

However, those familiar with the giving interests of major philanthropic organizations and corporations attached some caveats to this optimistic picture. One interviewee summed up the caveats in the following words:[127]

When you drill down and look at what foundations are really funding under that education heading, it gets much more specific, and that's where we might

127 Although these observations specifically refer to foundations, interviewees indicated that they apply to corporate philanthropy as well.

hit some roadblocks in terms of how the Smithsonian fares in the competition for dollars. … The big area these days is improving the [K-12] public school system—particularly in urban, minority, poverty-stricken areas. … That's where the [biggest foundations'] money is going. So the question is: how is a particular education program going to impact minorities, the poor, and those who have trouble making it through school? … The other big thing where foundations give a lot of money is education leadership in America—finding ways to improve, promote, and support the leadership of school districts, school principals, etc. … So again, the question is where the Smithsonian fits in there.

Other interviewees also mentioned that many foundations, corporations, and private philanthropists have a specific geographical or community focus. The Smithsonian tends to be at a disadvantage with such donors, because with a few exceptions (such as ACM), it is generally regarded as a national institution rather than a resource for the local communities in which it happens to be located:

One of the things I continually hear is, "What are you doing in your own backyard? Why isn't the Smithsonian partnering with Michelle Rhee to do something about D.C. schools?" … We never figured out how to partner with them. As a result, there are funding opportunities we have missed out on, because foundations see us as this big national behemoth that doesn't do much for the local schools.

In addition to the possible incompatibility of donors' giving interests and Smithsonian areas of educational strength, interviewees noted other potential impediments to fund raising for education. One is that many funders assume the Smithsonian is amply supported by the Federal government and does not need external support:

One of the big things that happens is that I apply to grants, and people look at the Smithsonian name, and they think I must have funding. They are like, "Why is Smithsonian applying for funding?"

Another is that the Smithsonian's generally unsystematic approaches to program development and evaluation (see Appendix 10, Management) do not serve it well in an era when philanthropy is becoming more results-oriented and outcomes-driven:

Across the board, grant seekers need to demonstrate impact. Who are you serving? How are you impacting them? How are you affecting a problem we have identified for America's future? It's very outcomes- and impact-driven. … Can you tell a funder, "we're going to work with this school district, and here are the stats

on the district; this is what we hope to change; this is how we plan to do it; and this is how we'll track the results and show you the impact?"

Project-Specific Grant Funding

While funding sources differ across units, in general most Federal appropriations and non-project-specific unit Trust funds for education go to salaries. Most units also have some level of internal unit funding for education-related operational expenses, although a number of interviewees complained about the meager level of this funding at their units.

Many units rely to some extent on project grants to cover operational needs and, in instances, temporary staffing for specific programs.[128] Depending on how such grants are managed, this approach can create several problems.

First, there is the issue of sustainability, which arises from the fact that donors generally prefer to fund new programs:

When you apply for grants, no one wants to give you money to sustain a program with staff. They're fine with putting the program in place. But once it's in place, you still need to support the staff for it, and donors don't want to do that.

Although some units have been able to find replacement donors to support successful programs when initial funders failed to renew a commitment, the end of an external funding commitment can mean the end of a program:

When I first came here, I found there were a lot of programs that were funded by soft money—and when the money disappeared, so did the program. … Those programs might look good in the annual report, but that's not how you should be thinking. You should be thinking about sustainability.

Second, reliance on soft money contributes to the sense of staff overstretch, as fund-raising responsibilities and donor reporting requirements eat into the time for program-related work. This is a particular concern when the grants are relatively small, as the time required for fund raising, reporting, and program administration is by no means proportional to the amount received. As one unit educator put it:

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128 Generally, funders do not wish to defray salaries of permanent staff with grant money, so staff positions funded by grants typically must be designated as temporary, and be closely tied to the program for which the grant was received. As one interviewee put it:

The issue really is when you go out and raise money, the last thing most funders want to pay for is personnel. They will give you money for travel, for students, for research equipment—but not for staff. They expect the Institution to provide that—that's like the match they expect from us. That's our biggest challenge.

When money comes in, we get stretched thinner. … These $12,000 projects are killing me!

Another noted:

What a lot of people don't realize about fund raising is that it is not just [getting the grant], but it's implementing the grant and doing the reports [for the donor], which take a lot of time. The organizations that give you the least money sometimes expect the most accountability. Accountability is important—but in terms of what you have to report, it's a lot.

Third, reliance on program-specific grants can lead to funding opportunities driving programmatic decisions. For example, new programs may be conceived largely on the basis of how much private money is available, or perceived to be available, to support certain kinds of programs, rather than considerations of target audiences, strategic priorities, departmental strengths, and so on. The study team often heard educators discuss programmatic priorities in terms of where money was currently available.

For example, as noted, formal K-12 classroom education—particularly in underserved communities—was often cited as an area into which much corporate and foundation money, and more recently Department of Education money, was flowing. Several interviewees explicitly suggested that Smithsonian units should be chasing such funds. But it is far from clear that K-12 classroom education is an area of strength for many Smithsonian units.

An interviewee discussed the opposite problem—strategic priorities that cannot be pursued because of the absence of funding to support them:

It all goes back to funding. We can come up with really great ideas, but if an idea doesn't seem to have that money attached to it from the beginning, it often dies in the water.

Finally, at several units, the study team noted a kind of grant-seeking treadmill, as temporary staff covered by project-specific monies come to be regarded as permanent members of the education team. This leads to a continual scramble for funds to support these staff when those project-specific monies are lost:

People always want to give you money for a new initiative, but then you have all these initiatives in place without the staff to continue them. The only way to maintain funding for some of our staff positions has been to continuously start new

initiatives. You're always playing catch-up and spreading the money over more and more programs.

In sum, reliance on program-specific gifts, grants, and sponsorships for operational funding limits the flexibility with which resources can be deployed, creates uncertainty about the sustainability of staff positions and programs themselves, and sometimes drives programmatic decisions. An interviewee summed up these issues as follows:

> *What we run across all the time is that it is easier to get a grant for something new than to get grants to maintain what you're already doing. But when you have limited staff and resources, essentially you have to drop something to start something new. … I've had conversations with our development department about this, and fortunately they understand that we can't keep reinventing the wheel all the time to suit various foundations. We need to raise money and have resources for the things that we already have in place that we're working on. We can't just put a new program in place every year; we need to build on the programs.*

Two possible alternatives to project-specific funding are greater use of revenue-generating offerings, and a more strategic approach to fund raising that targets endowments or broad educational initiatives, rather than specific programs. These are discussed in the following sections.

Revenue-generating Opportunities

As noted, revenue-generating offerings are not a major source of funds for most units, including the museums. Some stakeholders argue passionately that, as a heavily Federally-supported organization, the Smithsonian is *obligated* to keep its education offerings free to users. However, a number of interviewees countered that, as a matter of economic necessity, the Smithsonian needs to explore possibilities for greater use of fee-based educational products and services. One of these individuals noted:

> *The Smithsonian [already] pursues a wide range of revenue-generating activities, most subsidized in various ways by the Castle. That alone should not disqualify a program, anymore than it undermines the Government Printing Office to charge reasonable user fees.*

Another interviewee, when queried about the ethics of a largely taxpayer-supported organization charging for its offerings, opined that it was acceptable if "there are scholarships or other ways for making them available" to all. Yet another suggested that eschewing revenue-generating offerings may become a luxury the Smithsonian cannot afford:

The Smithsonian is going to have to do more of that sort of [revenue-generating] thing, because in this economic climate, raising money will become more challenging. … It's arguably the worst economic environment since the Great Depression, and you have to be innovative about keeping the money coming in.

A senior manager offered this balanced view of the tension between the Smithsonian's public service responsibilities and its financial needs and interests:

We've got figure out what we have a responsibility to do without cost, … and where there are areas of opportunity to make money. …We ought to be going through that thought process. As a blanket proposition, I don't have any problem with charging for some of our [products]. But we need to figure out [which are the acceptable areas for this], set out our reasons and rationales for it, and have an understanding of the market, so we can make money without slapping up against our [basic mission]. It's like charging admission. No, we don't want to charge admission to everybody who walks through the door. But maybe it's okay for special events.

Several ideas for revenue-generating education products and services were discussed in the interviews or mentioned in discussion forums. Perhaps the most promising was the idea of ramping up offerings of fee-based courses, such as:

- ◊ Formal undergraduate or graduate courses in partnership with degree-conferring organizations;
- ◊ Professional development courses for teachers or professionals in areas such as conservation biology and collections management; and
- ◊ Online self-study courses for lifelong learners.

One interviewee noted:

If we created units that confer academic credit for professional development, schools will pay for that. If we start putting things together that give you a certificate in a particular area, people will pay for that. It doesn't change the fundamental mission of this organization, because if you look at our mission statement, we could easily have ended up as a university.

Several interviewees noted that some peer organizations, such as the American Museum of Natural History, already generate considerable revenue through fee-based courses.

The Smithsonian is already involved in this area through programs such as CHNDM's Masters program in the history of design; TSA's Masters program in the history of decorative arts; STRI's collaborative graduate program with McGill University; and NZP's training programs for conservation professionals and undergraduate program in conservation biology with GMU.[129] (These are all covered in Appendix 12, Collaboration.) Interviewees also singled out online education as an area with enormous market growth potential, although one person sounded a note of caution about entering into this area lightly:

> *The question is, can you give a quality experience in this sort of online environment? Of course, you can make a crude video of a scholar at a blackboard, string 25 of them together, and give the kids a task at the end. Slippery Rock is doing that now. But we're talking about the Smithsonian here! It would be nice if the quality of the experience were so exceptional that it would draw people into all the other things the Smithsonian has to offer.*

Other areas where there may be opportunities for increasing revenues through the expansion of revenue-generating education-related products and services include:

- *Materials to support formal curricular education*, possibly including integrated course curricula. Currently, NSRC raises parts of its revenues by charging school districts for various products and services related to its efforts to improve the K-12 science curriculum. This model could conceivably be expanded or replicated to embrace other disciplines.
- *Professional consulting*. SEEC raises funds to pay for scholarships by providing consulting services to school districts and other educational entities across the nation on the integration of object-based learning into the curriculum.
- *Miscellaneous product lines* such as educational self-study kits, games, books, adult education classes and programs, and so on. A number of Smithsonian units offer such lines already. For example:
  - SE offers educational toys and kits (although some interviewees expressed concerns about their educational value and quality); educational tours both for adults (through the Smithsonian Journeys program) and for school children (through the Smithsonian Student Travel partnership); Smithsonian-

129 However, these offerings are not necessarily conceived of as net revenue-generating vehicles per se. For example, an NZP interviewee involved with professional training noted:

> *If you look at the tuition we charge and compare that with what is offered on the private market, we're probably a third of what you would pay if you go to a commercial provider. That's intentional; we're not doing this to make money. We're doing it to put this [specialized expertise] out in the field and make it accessible.*

themed and other books, including a small number of textbooks and a major partnership with HarperCollins to produce trade titles for general readers; and media offerings such as *Smithsonian* magazine and the Smithsonian Channel.

» TSA offers a wide variety of fee-based adult-education courses, classes, and tours, as well as the Discovery Theater for children.

» FONZ offers a variety of fee-based educational offerings such as children's camps.

» Smithsonian Folkways Recordings functions as a self-financing unit, obtaining revenues from its musical catalogue through a variety of channels, such as licensing, CD sales, and music downloads.

Some of these markets are more promising than others. Tours, general-interest books, and cable television all offer considerable revenue-generating potential, while the potential for significantly augmenting revenue through products such as games and self-study kits is much less clear. Curricular materials for formal K-12 (or K-16) deserve a brief discussion, because some interviewees, reflecting on the experience of NSRC, thought this a logical area into which the Smithsonian might expand.

In truth, entry barriers to the market for curricular materials tend to be high, and the required investments in research, design, and marketing can be significant. It is not clear that the Smithsonian can (or should) compete with organizations such as educational publishers in niches where the latter already enjoy a strong market presence.[130] A recent attempt by SE to stick a toe into these waters—a series of science textbooks written by noted author Joy Hakim—is generally considered to have been a disappointment. NSRC has had some success in this area, but it has been in the market for nearly 25 years, and has had the benefit of working under the banner not only of the Smithsonian, but also NAS. While there has been some discussion of expanding or replicating the NSRC model in other disciplinary areas such as math and history, it is not clear how quickly, cheaply, or easily this could be done.

In sum, while a measure of wariness persists when it comes to using educational offerings to generate revenue, acceptance (albeit sometimes grudging) that this approach may have to play a larger role in the Institution's future appears to be spreading. However, the potential

130 Moreover, the Smithsonian could be at a competitive disadvantage because of ethical limits imposed by its basic scholarly and public-service character. For example, K-12 textbook publishers are often under pressure from interest groups in certain geographic markets to downplay potentially controversial subjects such as evolution, climate change, the treatment of American Indians, and the war in Vietnam. While a profit-oriented publisher may be free to make strategic compromises in the interest of maintaining sales in such markets, the Smithsonian would face great ethical obstacles to doing so.

for substantial increases in revenues from fee-based educational products and services remains uncertain.

Strategic Fund Raising

Another alternative to project-by-project fund raising would be to shift the fund-raising focus to a strategic approach aimed at securing more flexible programmatic funds for broad initiatives or purposes. Some of this is already going on at both the unit and central levels. For example, an interviewee at NMAH explained:

> *The idea is that we don't want to raise money just for maritime history or African-American programming or whatever. We're trying not to be so exhibition-based or subject-based. … Rather, we're trying to … find donors who don't care so much exactly what the subject matter is, but just want to support education.*

One form that such strategic fund raising has taken at several units is the creation of education endowments, which bring greater year-to-year sustainability, predictability, and flexibility to a unit's education budget.[131] As one interviewee put it, an endowment "gives you the unrestricted funds so that creative educators can do whatever they want." Several units have established endowments for education, in some cases named after the donors that made them possible.

One development staff interviewee suggested that the overall trend may be headed in the direction of more long-term strategic funding relationships, at least in corporate philanthropy:

> *The trend is toward fewer partners, but more strategically and deeply invested. … One-offs are becoming less common, because it's just as hard for a company to work with 50 nonprofit partners as it is for [us] to handle 50 corporate partners. So [donors] are saying, "Less is more; let's find five cornerstone nonprofits where we will increase what we are doing and stay in it for the long haul."*

However, other development staff cautioned that the potential for long-term partnerships with deep-pocketed philanthropy organizations, or for securing large sums for endowments or other strategic initiatives, is limited by the amount of front-end work that such fund raising requires, relative to standard program-based contributions:

131 The value of an endowment and the pay-outs from it can be deeply affected by economic conditions—as many organizations with endowments have discovered recently.

It can be done, but it's harder. I think where we can be most successful with that is in working with the people who are closest to us, who are totally committed to a [Smithsonian] museum and its programs, and who understand that an endowment is going to provide a great foundation so these education programs can thrive. It's possible, but it is harder. Those are big investments.

Another interviewee concurred:

I sometimes wonder whether people are really aware how much work it takes to get a donor to offer sustained funding. How much cultivating, how much legwork it is out there. It is possible to engage a group of donors over the long haul to support a program that has been going on for years. It happens, but it takes a lot of work.

A number of interviewees also held that strategic fund raising for education has been hamstrung by the lack of a pan-Institutional education plan or strategy to present to potential funders. This theme came up so often that it is worth quoting several variants of this point:

If we have a national campaign, I would hope that education would be a high priority. But we have to ask, what do we mean by that? What specific initiatives are we looking at? Does it mean digitizing the collections? Does it mean curriculum development? Does it mean a site on our campus for classroom instruction?

There is money out there for education, both Federal and private. I don't think the issue is the money. The issue is that we are not capable of articulating our ideas, connecting them, and selling them.

There is no reason why we couldn't be a $100 million operation here in education, but you can't raise money unless you have a plan.

The Smithsonian could have been a leader in education in many ways, but it never really defined what education meant here, and we never really worked together across the Institution on educational programming. So we just sort of ended up doing a lot of little things, and I think that's really too bad.

Framing the concept of what SI needs education funding for has not gone well. It's like we are trying to satisfy everyone's opinions at the same time, so you end up with a camel—a horse designed by a committee. There has to be a final vision upon which coherent documents are put together.

You can't have 19 museums and all these individual programs [moving in different directions], and [then try to] sell one thing to a foundation or a corporation.

Education has a lot of fund-raising potential that can generate support from sources we have not been able to tap because [the funders] didn't know what we were doing, and we didn't either.

In this connection, several development personnel expressed frustration with the Institution's inability to articulate a clear strategic vision for Smithsonian education that would open up wider funding possibilities:

We've met with [education] folks who said, "Why can't you raise money for education?" Well, for what? You need to define it. You need to have bullet points, or a plan, or something that you can take to a donor.

Some stressed the positive benefits of articulating such a vision:

If we can really define what education is at the Smithsonian, I think we could raise funds for it.

I hope we are able to get to a comprehensive education strategy. It's a matter of bringing together all of the major units that play in the area of education. If we come up with some overarching strategy that encompasses them all together in a smart fashion, we'll be ahead of the game.

Others stressed the hazards of failing to do so:

We've got to figure out what do we do well, how we articulate it, and why we choose those programs. … If we don't do that, nobody's going to give us money. They're not going to give us money just because they like the Smithsonian.

A number of interviewees suggested that the best way to approach such a vision was not necessarily in terms of particular types of programs, but rather in terms of interdisciplinary educational themes that the Smithsonian is particularly well-positioned to address:

I would like to see the Smithsonian focus on a small number of big cross-cutting ideas. I'd pull together everything we do in areas such as cultural diversity or American history or biological diversity that cut across administrative structures. The question will be looking at educational standards and how they are structured, and which [of these cross-cutting ideas] would fit in nicely [with those standards].

Another interviewee had a very different view, suggesting that the Smithsonian should take active steps to engage funding organizations to find out exactly what they need that the Institution might offer:

> *It would be great to have a conference of the major foundations in the United States. … There are many foundations that are doing great work in education. Have them come to a summit at the Smithsonian to let us know what their studies have shown. They're the ones who know what is needed in education, because they have done the studies. … They often have the best grasp of what is really needed, because they give money to try out their ideas. Wouldn't it be great if we invited them here and had them tell us what teachers need, what families need?*

Economic Thinking

The study team saw little evidence that economic thinking—that is, the explicit consideration of how limited resources can be used most effectively to achieve explicit goals—is systematically incorporated into education planning, decision making, and programming at the Smithsonian.

There were some exceptions. In particular, staff at research centers that get relatively little budgetary support from their central administrations appear to be more disposed toward economic thinking, probably out of necessity. For example, in discussing the possibility of raising fees for onsite programs, education staff at one research center noted their concerns about the price elasticity of demand for these programs.[132] They discussed how they had essentially mothballed an offsite program that they liked very much, but that was not a cost-effective way of reaching target audiences. These judgments were made informally, and the interviewees certainly did not use economists' jargon to describe their thinking, but the reasoning was economic in character.

Staff at several units also described how they leverage project-specific external funding to set up templates or infrastructure that have application beyond the specific project for which they were created. For example, one educator noted:

> *We're partners with TSA on a Teaching American History grant in a school district in Michigan, and we're using part of the money from that grant to develop a historical character. … We're having an actor go out to Michigan and be part of*

132 "Price elasticity of demand" refers to the effect of a change in the price of a good or service on the quantity of that good or service that users wish to buy. For example, if a small increase in price causes a huge drop in quantity purchased, we would say that the price elasticity of demand is relatively high—consumers are very sensitive to price. Conversely, if a large increase in price causes only a small decline in quantity purchased, we would say the price elasticity of demand is relatively low.

the teacher training. That character, that costume, and that script that those funds paid for will end up on the floor of the museum. No more one-offs!

Further, some interviewees, at least in principle, acknowledged the case for centralization of some education-related support functions and infrastructure because of economies of scale.[133] Examples cited by interviewees included the infrastructure for electronic outreach such as videoconference distance learning, and the national marketing of Smithsonian educational resources. (Other functions that were mentioned as strong candidates for centralization are covered in Appendix 11, Structure and Organization.)

However, it was more typical for educators to demonstrate indifference, or even resistance, to economic reasoning. For instance, at the unit level, the study team is aware of several examples of paid staff spending hours in workshops or other "live" programs that serve only a handful of kids. Whether such programs are valuable to their audiences is not the issue; it is whether they are valuable enough to justify resource deployments that, on their face, appear very inefficient.[134] In general, as noted in Appendix 10, Management, a lack of cost-benefit and cost-effectiveness thinking appears to be a common shortcoming of educational management at many units. As one interviewee noted:

Part of the problem that I see at the SI is that there are a lot of one-offs and that people don't leverage what they are doing across a range of platforms and audiences.

The issue is even more pronounced at the Institutional level, where poor communication and information sharing across units are major sources of inefficiency, as multiple units "reinvent the wheel" with regard to lessons learned, new technological applications, and so on. For example, one unit director noted:

What I worry about is that every one of us tries to reinvent the wheel with limited resources and without having the expertise. I mentioned the lack of coordination. The worse thing that could happen is that every one of our museums tries to reach all of the schools locally and independently. That is what I fear is still happening.

133 "Economies of scale" refer to cases in which per-unit production costs tend to decline as output increases—that is, when it is cheaper to produce a lot in one location than to produce the same quantity spread across multiple locations. Economies of scale are typically associated with production processes that require large up-front investments in specialized skills and/or infrastructure. Thus, in the Smithsonian context, the existence of economies of scale in a particular area (say, marketing of educational resources nationally) would mean that a centralized capability in that area, shared among units, would be cheaper than having each unit establish its own capability.

134 "Efficiency" is used here in the classical economic sense: maximizing outputs (however defined) from a given set of inputs. While there may be circumstances in which small programs that demand extensive personal involvement from paid staff are appropriate, the study team would suggest that the case for such programs needs to be explicitly made, especially in the face of growing concerns about resource adequacy.

Beyond communication, there is an almost complete lack of mechanisms for directly sharing or temporarily redeploying resources (such as staff and technology) across units to promote efficiency in the use of these resources. Despite the occasional acknowledgement that centralizing or at least centrally coordinating certain functions would make economic sense, few steps have been taken in this direction—although progress is being made in some areas of IT, digitization, and the web.

The largely underdeveloped state of cross-unit communications and collaboration is an issue that transcends the educational area,[135] and is discussed in considerably more depth in Appendix 10, Management. It is mentioned here only to stress that poor communications and coordination across units have economic as well as programmatic consequences.

The lack of economic thinking noted by the study team has important implications for the perception of inadequate resources noted above. Fundamentally, if resources are not considered adequate to achieve given ends, only four general strategies are available:

- ◊ Increase resources (by actively pursuing creative, proactive strategies to boost funding);[136]
- ◊ Scale back goals (by cutting programs and functions to bring responsibilities into line with available resources);
- ◊ Use resources more efficiently (by sharing and leveraging resources across units, or exploring more cost-effective programmatic alternatives to meet existing goals); or
- ◊ Live with a constant sense of being overextended.

Implicitly or otherwise, most education offices and units have opted for the fourth strategy. There was scattered evidence of some units exploring the first strategy, although, as discussed, most are still pursuing a traditional project-by-project approach to fund raising. (In any case, the prospects for significantly increasing resources from either public or private sources in the medium term are clouded by the weak state of the economy.) There was very little evidence that most units were seriously exploring the second and third opions.

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135 For example, the OP&A overview report on exhibitions (Smithsonian Institution, Office of Policy and Analysis 2003) raised similar issues concerning cross-unit information sharing and resource coordination in exhibition development.

136 The chase after funds is increasingly accepted as a part of an educator's job, at least for higher-grade educators. However, as discussed in detail above, the project-based grant model has many flaws, and although educational managers recognize that this is the case, it is not clear that they are exploring other options sufficiently. For example, one interviewee at a science unit frankly admitted:

> *One of the things we haven't done is [aggressively seek external funding] from foundations and so forth. The greater awareness of the science deficit in this country, the awareness of global warming, the requirement to look at the world differently—all these play to the strengths of [this unit], and we ought to be out there writing proposals. … We're too passive. We just say, "Give us the money and we'll do a program."*

Discussion

The adequacy of funding for education staff and programming cannot be addressed in isolation from funding needs in other areas such as research, collections, exhibitions, facilities, and information technology. Interviewee claims that education is inadequately funded or short-changed relative to other areas may simply reflect an implicit judgment on the part of Smithsonian and unit leadership that other areas have higher priority.

Increased clarity is therefore required not only in terms of priorities within the area of education, but in terms of the relative priority of education as a whole versus competing claims on resources. Historically, Smithsonian leadership at all levels has been reluctant to explicitly prioritize functions, because of the inevitable push-back from staff and stakeholders with a commitment to functions assigned a low priority. However, the Smithsonian cannot be all things to all people, and arguably it is already past the point where it can pursue even its current level of activities at a uniformly high level of excellence. If financial concerns force difficult choices, it is far better for such choices to be made on the basis of explicit priorities than in an unsystematic way.

If Smithsonian leaders decide that education should be a significant priority at the Institution, the issue of resources will need to be addressed at the outset. Particular points warranting consideration are:

- ◊ Increasing the percentage of budgets allocated directly for educational programming (beyond exhibitions) and support services (such as IT);
- ◊ Increasing the level of fund-raising activity specifically dedicated to securing support for educational programs, initiatives, and goals;
- ◊ Taking measures to increase the efficiency with which resources to support educational functions are deployed across the Institution;
- ◊ Exploring possibilities for increasing revenues generated from education-related materials and services created by the Institution, particularly in the area of professional training and online education courses for various audiences;
- ◊ Raising or reallocating funds to establish a central endowment to support education programs that contribute to achieving strategic Smithsonian education priorities, and that is large enough to have an impact on units' activities.

More generally, subject to realistic short-term expectations for augmenting revenues and increasing the efficiency with which they are deployed, senior Smithsonian and unit-level leadership can be become more forthright about the need to set and enforce realistic priorities

within and across programmatic areas. They can also advocate for more systematic use of cost-effectiveness analysis, and economic thinking in general, in programmatic decision making.

Appendix 14: Human Resources

As discussed in several places throughout this report, not all staff who contribute to education programming are located in education departments, or are formally classified as educators by the Office of Human Resources (OHR). This makes it difficult to arrive at a definitive profile of Smithsonian educators—that is, staff whose *primary* work activities involve creating, administering, or supporting informal or formal learning programs for external audiences.[137] For the purposes of this project, the study team defined "educators" as those staff who met one or more of the following criteria:

- ◊ Were classified under the education job series (1700);
- ◊ Were part of unit education departments, where such departments were clearly identifiable;[138]
- ◊ Were identified by the units themselves as educators (in response to an OP&A questionnaire or in the interviews);
- ◊ Were judged by the study team to be programmatically involved with education on the basis of job titles shared with staff that fell into the first three categories.

In addition to the staff of education departments, this definition covers, for example, some programmatic personnel at units like TSA and CFCH, as well as some personnel in museum or science center web and new media divisions. The total number of full-time educators at the Smithsonian over the last six years, according to this definition, is shown in Figure 14-1, which indicates that the number of educators has remained roughly steady during this period at around 250.

Educators as defined above have, on average, lower job grades (mean of grade 10 versus mean of grade 11) and fewer years of service (mean of 10 years versus mean of 14 years) than other full-time Smithsonian employees.[139] They are also younger (a mean of 43 years old versus mean of 48 years old), more likely to be female (68 percent versus 45 percent), and less likely to be Federal employees (55 percent versus 78 percent).

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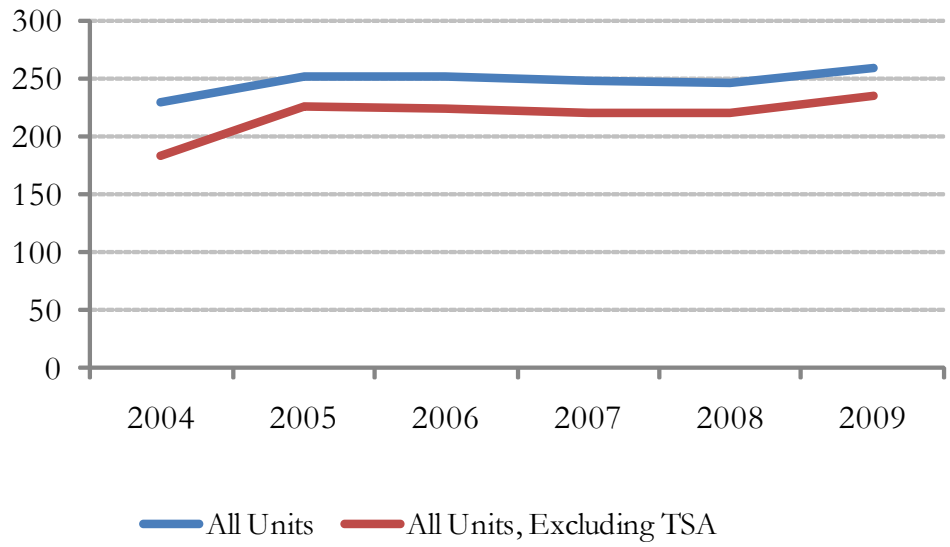
137 The study team did not attempt a systematic comparison of the size of Smithsonian unit education staff with those of other museums. However, it did learn that the American Museum of Natural History—considered a national leader in science museum education—has approximately 100 educators, compared with 20-30 at NMNH in recent years (using the study team definition of an educator).

138 This includes both core programmatic staff and administrative and technical support staff; the study team was not able to find a consistent way of excluding the latter personnel.

139 In making these calculations, employees of the Office of Protection Services and Office of Facilities Management and Reliability (in OFEO) were excluded, as a disproportionate number of lower-grade, non-programmatic employees (security guards and maintenance personnel) are concentrated in these units.

Figure 14-1: Full-Time Smithsonian Educators, 2003-2009[a]

Source: OP&A calculation, based on Office of Human Resources data for pay period 2 of each year.



a. Series that omits TSA included because transfer of the Smithsonian Journeys program from TSA to SE during this period resulted in a relatively large swing in the designated education staff in the latter.

Note that the OP&A definition of an educator excludes staff who spend some part of their work time on education activities, but whose *primary* work places them in another programmatic area. For example, a scientist, curator, or collections manager who spends some part of her time working with fellows or professional trainees would not qualify as an educator using the study team's criteria. As discussed at several points in this report, many staff who would not be considered "educators" either by their own reckoning or according to the OP&A definition contribute substantially to the development and delivery of education programs. This explains how some units that have no designated educators at all—such as the Smithsonian Institution Libraries and Horticulture Services Division—are nonetheless able to create education programming.

Adequacy of Staff Numbers

Many interviewees suggested that the overall number of educational staff is inadequate:

> *We just need more people. We've added 140 docents this year. It's hard to keep up with everything that's going on.*

We are so short staffed. For the amount of programs that we should be doing, we would need 10 more people here.

The consequences of too few staff relative to the workload can be seen in:

◊ Difficulty meeting the needs of audiences:

Generally, [this museum has] at least 5 million visitors a year, and 10-12 education staff. That's a real challenge to provide programming.

◊ Difficulty managing projects:

We have some very good people, but they're overloaded. We only have two people on our web—one a technician and the other a content person. So one of the things we're doing now is trying to edit our own website to make sure that it stays reasonably current. That's a very difficult task.

◊ Inability to pursue new ideas or promising opportunities:

If we had at least one extra staff, [our onsite programs for children] could be translated and offered through the web, so that the schools and families that cannot come [to the museum physically] can download them and use them in the schools or in other programs.

Institution-wide there's too much to do and not enough of us to do it. As piles grow, things get lost. So even if it's well-meaning and you want to do things, you can't. You can't possibly keep up with what they want us to do.

We frequently have that problem here: there's a fabulous idea, and we may even have a little bit of funding for it, but there's not a human being with a workload that would allow one more thing.

We don't have enough staff to do enough public programs, and to hit all the various target audiences we would really like to get. We have to limit what we're doing, because we just don't have enough staff to do it. And that's getting harder every year.

◊ Low morale:

People are very unhappy and overworked. I think the main problem is that the programs keep growing and growing, and the staff is a little bit overwhelmed, to say the least. Terribly overwhelmed.

> *It isn't mathematically possible. … That's why a lot of people leave. And of course, when people leave, [you have to pick up their work]. I am more than happy to do [that], because I care deeply for my colleagues—it's a wonderful team—but then [you can't even do your own work]. So it's that sort of thing.*
>
> *I have no time whatsoever. And I don't work eight hours per day—I work ten, I work weekends.*

Because a large part of educational expenditures at the Smithsonian go to staff compensation, this issue overlaps substantially with the issue of the overall adequacy of funding for education, discussed in Appendix 13, Financial Resources.

Professional Backgrounds

The backgrounds, skills, and experience of Smithsonian educators are highly variable. They include former teachers, content-area specialists, individuals with museum studies backgrounds, and individuals with technical skills (writing, IT skills, video production, and so on) needed for education programming. Some are generalists who had no formal training or experience in education or related areas before coming to the Smithsonian. A small number have backgrounds in education or museum administration, although, as discussed in Appendix 10, Management, formal training and extensive experience in management are not common among Smithsonian educators.

There was no consensus among interviewees about the ideal qualifications for a Smithsonian educator. While some suggested that a background in classroom education was desirable, others thought that such training and experience are actually detrimental, in that they instill a conservative and outdated approach mainly suited to serving visiting school groups. Likewise, while some interviewees thought subject-area expertise was desirable, one interviewee at an art museum pointed out a downside of specialist training:

> *I actually came out of studio art, and … I kind of fell into this job. [The rest of the] staff members are either from art history master's or museum studies master's programs—which is great, because I need that knowledge that I don't have it. … It's also tough though, too, because if people have been too academic—if they've come through a master's program in art history—you have to re-teach them how to write for the public, because they want to write like they write their dissertation, and that doesn't work.*

Some interviewees mentioned particular skill sets that their education staff or unit were missing:

> *Things that I cannot do that I really want to do are things like curriculum development. I don't have any writers on staff.*
>
> *We need at least one other specialist, and it would be absolutely wonderful to have a dedicated administrator who would take care of supplies and that sort of thing.*
>
> *I don't have a staff member dedicated to online development, and my director and the Institution are all pushing toward … [reaching] national audiences.*

Educator Roles

There is no consistent pan-Institutional definition of educators' roles, as discussed in Appendix 5, What is Smithsonian Education? There has been a historical tendency to pigeonhole Smithsonian educators as the staff who serve schools and children, because that has been (and remains) a large part of what education department staff do at many units. But many educators resist that definition, preferring to think of their role as specialists in audiences and learning.

When queried about how the expertise of educators differs (or should differ) from that of other programmatic professionals at their units, interviewees most frequently mentioned two areas:

- ◊ Expertise in curricular standards and requirements for schools; and
- ◊ Expertise in audiences, learning styles, and accessibility.

Not surprisingly, those who stressed the former tended to implicitly or explicitly equate "education" with programs for schools, teachers, and young people, while those who stressed the latter tended to favor a broader definition of education.

In terms of day-to-day work responsibilities, educators undertake a broad range activities in areas such as program management, teaching, writing, research, administration, community outreach, and even web design. One interviewee described the range of his work activities:

> *I took on some of things [previously done by a colleague who left], including newsletters and website maintenance. Also, I'm doing some grant writing for educational programs [and] general networking within the community—locally, statewide, and nationally—trying to increase our presence at all levels. [I also do]*

teacher workshops, and I'm working a bit more with the researchers themselves, trying to promote their research efforts. So I do a little bit of everything.

Professional Development

When Smithsonian educators need skills that they do not have—even basic skills associated with the educational role at their units—typically they acquire them informally on the job. For example, they may ask questions of their colleagues, or research what external organizations do. One interviewee noted that, while motivated individuals can certainly pick up working skills this way, raising the status and profile of Smithsonian education may require more emphasis on hiring individuals with better formal preparation for the task:

I am not a trained educator. I am trained by experience, which is in some ways probably better. But if SI wants to become a leader in museum education … then it needs to have people who are trained. … I don't think that they are here. This is not to put down these people, because they are very dedicated and very passionate. … But we are not trained.

In general, professional development of educators is a low priority throughout the Smithsonian, and this was a frequent concern for interviewees:

There are some wonderful employees on staff who have not been given the opportunity to take classes, attend conferences, or even go to a lecture when they want to.

Few programs are offered internally (some examples of what is available are described below), time and funds for training are scarce, and staff often have to cover the costs of education conferences and the like themselves:

I'm not saying send us to Hawaii for professional development, but I think [there could be things] that we can do in D.C. We are always told that we don't have the funds for it.

Some interviewees indicated a specific need for training in changing educational technologies:

Allow people the opportunity to keep up with technology. [A senior unit manager] was wonderful in allowing me to take some classes in web development, and it helped a lot. I don't think others in the education department have been given those opportunities.

Another emerging issue is the mismatch between existing educator skills and the demands of the future. Your typical museum education specialist does not necessarily have skills in website development, curricular development, online educational games, etc., but these are becoming more important. You have to get those specialized skills somewhere, whether from new staff or contractors or training current staff.

I don't think I've ever gone to a training [course] at the Institution. If you offered web design, I think a lot of educators would take advantage of that.

Others wanted to address more fundamental, philosophical questions about the role of museum educators:

I would love to see professional development for my staff. I'd love to have facilitated conversation with my staff about what learning is, what museum education is, what do we do? … It would be great to have a menu of professional development workshops to send people to where they can hash some of these things out.

The professional training opportunities that are available to educators at the Smithsonian—for example, OHR courses in general management and work skills—are not specifically geared toward the needs of education staff. And a number of education heads with whom the study team spoke were unhappy that the units have to pay to send their staff to Smithsonian courses:

I've been on a bit of a warpath about the whole training thing at the Smithsonian. I'm incensed when they [announce]: "Here's training for new supervisors to learn how to do performance plans, and that'll be $100, thank you very much." This is something they need in their job, just like if you put in a new financial system or whatever. I don't expect to pay for folks to be trained; we don't have that money.

What's frustrating is that when my staff does want to do some kind of training … there is a dollar amount involved. … [It] would be nice to let staff take some [free] training courses, just because [the Smithsonian wants] to develop staff as people and as professionals … But I can't do that. I don't have the funds. And that's tough.

SCEMS has provided professional training opportunities more oriented toward educators through formal online courses in the Teaching for Understanding model and, more informally, through its Goode Lecture Series. The Educators' Exchange can also be seen as

offering grassroots professional development. However, one interviewee described the latter two as interesting but not particularly relevant to her day-to-day concerns:

> *Things like the Goode Lectures and the Educators' Exchange are nice, and it's even better that they're webcast, since a lot of the time we can't get down there. … But I have a hard time knowing how to relate them to what I do. They are often focused on some really esoteric idea that's way out there.*

Interviewees at off-Mall units were particularly unhappy about the professional training situation, because distance made it difficult for them to participate:

> *If there was training we could participate in, that would be very helpful for us. We do see announcements about workshops over PRISM that would be helpful for us, but we can't take advantage of them. So if there were a way to do distance education for us in terms of professional development, that would be very helpful.*

Although on balance professional training and development seemed to be underdeveloped across the Institution, the amount of training available to staff differed greatly among units. Interviewees fortunate enough to be at units where professional development received greater attention were usually very positive about it:

> *We've done some professional development with evaluation with things that are currently changing in education theory. I think some of the other educators haven't had backgrounds in evaluation or some of those other things, and so they definitely are always looking for professional development. It's always good to stay current, if you're out of school for too long.*

It is also important to note that many Smithsonian educators use their own time and initiative to keep up with developments in their fields.

Docents

The permanent employees engaged in education are complemented by a large number of docents, who typically conduct onsite tours.[140] Most interviewees indicated that the docent program is a win-win proposition, with the museum gaining valuable staff and the docents themselves enjoying a wide variety of tangible and intangible benefits. As one interviewee put it:

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140 The units refer to their docents in different ways: NZP prefers "exhibit interpreters," FSG "gallery teachers," and HMSG "interpretive guides." In addition to docents, other personnel support the education function, such as other volunteers who assist with special events, interns, and, at some units, intermittent staff, such as the college- and high school-aged "Explainers" at NASM.

It is such a neat experience for the people who join our [docent] program. I think they have a lot of motivations, whether it's for social reasons or they love [the subject matter] or whatever it is. But they stay in the program because they become teachers and they really get excited about that.

Number of Docents

Quantitative data on the number of docents by unit are provided in Tables 14-2 and 14-3. Docents and other volunteers typically assume much of the responsibility for actual floor work with visitors, and staff invest considerable time in training, scheduling, and managing these personnel. (Because of the required investment of staff time in initial training, docents are generally required to commit to at least one year of service after training.

Recruitment and Training

Most Smithsonian museums appear to rely heavily on their website and word of mouth to attract new docents. At times, as for instance during the closings of the Reynolds Center and NMAH, some units have intensified their efforts to recruit docents. Prior to its recent re-opening, SAAM explored a number of non-traditional sources to recruit a new class of docents, including community newspapers and websites such as Craigslist. This outreach was necessary because the museum lost a large number of volunteers during its long closing. One result has been a corps of docents that is more diverse than usual for Smithsonian units, with more men and more young people.

Docents are managed by the unit at which they work, and the requirements and rigor of each docent program vary from unit to unit. Docent coordinators at the various museums create training programs and handle the scheduling and evaluation of docents. Docent training covers both content and presentation skills and lasts for the duration of the docents' time at a unit. In addition to initial training, docents typically must attend various training sessions throughout their service, such as curator walk-throughs of new exhibits, refresher courses to stay current, and sessions on engaging visitors in the museum.

Table 14-2: Number of Docents, by Unit, FY 2003-2008

Museum	FY03	FY04	FY05	FY06	FY07	FY08
ACM	14	21	19	13	18	15
CHNDM	15	12	22	14	19	13
FSG	68	81	54	64	91	95
HMSG	93	112	110	84	69	60
NASM	260[a]	315[a]	343[a]	314[a]	292[a]	352
NMAfA	37	30		51	33	32
NMAH	200	322	217	186	165[b]	144[b]
NMNH	405	207	153	229	206[a]	388[c]
Insect Zoo			62	60		
NPG	26		20	39	28	24
NPM	47	23	18	24	20	29
SAAM	38	62	46	72	54	104
SERC	21	20	27	27		
Castle	15	14	10	12	14	14
Total	**1,240**	**1,119**	**1,101**	**1,189**	**1,009**	**1,270**

Source: Data from the Visitor Information and Associates' Reception Center (VIARC) Institution-wide volunteer survey.

a. Includes Stephen F. Udvar-Hazy Center (National Air and Space Museum).

b. Includes *Treasures of American History* at the National Air and Space Museum.

c. Includes general docent program, Discovery Room, Insect Zoo, and Naturalist Center.

Table 14-3: Docent Hours Served, by Unit, FY 2003-2008

Museum	FY03	FY04	FY05	FY06	FY07	FY08
ACM	400	1,208	1,405	1,296	2,240	2,288
CHNDM	1,180	1,084	1,077	692	445	546
FSG	9,900	9,435	7,869	7,676	12,353	9,465
HMSG	3,203	3,498	3,073	1,313	2,910	2,880
NASM	22,214	36,010	39,163	45,796	39,966	40,612[a]
NMAfA	2,830	2,383		4,940	3,948	2,879
NMAH	13,540	11,528	8,798	9,506	2,476	1,680[b]
NMNH	19,105	16,173	16,302	19,357	19,236	19,871[a]
Insect Zoo			3,151	5,511		
NPG	550			5,906	4,704	2,592
NPM	1,115	820	560	902	1,317	815
SAAM	4,064	5,586	4,084	6,000	8,242	11,098
Castle	395	292	625	1,236	84	279
SERC		2,446	261	287		
Total	**80,512**	**90,463**	**86,368**	**110,412**	**98,124**	**95,005**

Source: Data from the Visitor Information and Associates' Reception Center (VIARC) Institution-wide volunteer survey.

a. Includes Stephen F. Udvar-Hazy Center (National Air and Space Museum).

b. Includes *Treasures of American History* at the National Air and Space Museum.

c. Includes general docent program, Discovery Room, Insect Zoo, and Naturalist Center.

Roles

Historically, docents have supported informal learning mainly by leading highlights tours for visitors, generally on a walk-in basis; such tours usually provide ample opportunity for questions and answers. In addition, docents at most units conduct pre-scheduled tours for school groups and special tours for other groups upon request. In addition to tours, docents at several museums staff discovery carts and discovery centers, and may also conduct outreach to local senior centers, juvenile detention centers, community centers, and libraries.

Some museums are exploring new roles for docents. For example, feedback from HMSG visitors indicated that the traditional one-hour docent tours were too long and that offering them only twice a day meant that they were not available to many visitors. Docents now give impromptu 30-minute highlights tours of the museum's permanent collection, while a new group of employees—paid gallery interpreters, who generally are undergraduate or graduate students in fields such as art history, education, and studio arts—give tours of special exhibitions and and engage with visitors. An HMSG interviewee described the change:

> *This is a big shift in the docent program. We're now focusing the docents primarily on the collection and history of the Hirshhorn, and then the interpretive guides, usually students, focus primarily on the exhibitions. You can walk up to them and ask them a question, start a dialogue. … The idea is there's all kinds of ways you can learn about a museum now, not just taking a docent tour.*

NMAI employs native American cultural interpreters to lead its tours and staff the hands-on learning stations. Native cultural interpreters are able to add to the museum experience by providing first-hand accounts of artistic traditions and cultural values.

NMAH recently eliminated scheduled tours for school groups, and instead is posting docents at specific locations throughout the museum. Training a docent for a particular gallery or room requires less time than training her or him for a comprehensive tour of the whole museum or even an entire exhibition, and allows the docent to acquire in-depth knowledge of the relevant material. Eliminating school tours also frees docents to spend time with visitors who have the greatest interest in learning, whether school children or otherwise. Similarly, NZP has been training its docents to serve in one particular exhibit area so that they can become very knowledgeable about the care, conservation, and natural history of a particular species. NMNH is currently reassessing its use of docents as well.

At SAAM, in addition to traditional tours, the docents are presenters of videoconference distance learning programs, typically doing five to seven sessions a week. Unlike some other new technologies, distance-learning presentations do not require learning new technologies

or information. The program has been so popular that the docent coordinator is recruiting a corps of docents to work exclusively as videoconference presenters.

NASM uses high-school students in need of community service hours for graduation to staff discovery centers, training them to work with the objects on the carts. Many visitors have noted that younger patrons are better able to engage with someone closer to them in age than traditional docents tend to be.

Effectiveness

Generally, docents are not subject-matter experts, but with training and time, they become well-versed in the content for which they are responsible. Interviewees indicated that their units' docents generally receive high marks for their ability to translate specialized subject-matter knowledge into language that visitors can easily comprehend, and are able to answer most questions that visitors pose.

Docents are also valuable because they provide visitors the chance to talk to someone in the museum. Visitor research by OP&A and others suggests that personal interaction with museum staff is correlated with a positive museum experience, and in many cases, the staff to whom visitors have the greatest access are docents. As one interviewee said:

> *[The docent program] has huge benefits for our visitors; if visitors end up talking to a volunteer, [they will often have a long conservation,] and that ends up being the highlight of their visit, almost always.*

However, interviewees indicated that a common complaint among visitors is that docents spend too much time lecturing and not enough time engaging visitors in conversation. This was a particular problem in interactions with younger generations, for whom the ability to interact is particularly desirable. For example, one interviewee noted:

> *[Docents] are excellent for adult highlights tours. But for the childrens' tours, I have my concern that they only know how to lecture.*

Several interviewees thought that the tendency to lecture stems from the fact that many docents are retirees, some of whom have a harder time relating to younger audiences. In addition, it is difficult for some to re-think their traditional role as a lecturer. To address these issues, some Smithsonian museums have been making a greater effort to recruit younger docents, bring in younger (often part-time) staff to perform docent-like tasks with greater interactivity, and provide visitor service training to docents (often along with other staff in public-contact roles) that emphasizes two-way communication.

Few interviewees thought there would be much benefit to further centralization of the docent program, because the programs and expectations vary so much from unit to unit. However, interviewees saw possible support roles for the central Smithsonian. For example, while content-area training obviously was best conducted at the unit level, other areas of training that apply to all docents might be most effectively handled at the central level—perhaps even through webcast or videoconference training sessions. Areas include visitor services and relevant educational concepts such as object-based learning and visitor-centered experiences. Providing these types of training centrally or collaboratively could reduce duplication of effort and lighten the burden of training on the units. The central Smithsonian might also play a larger role in marketing efforts to attract a high-quality, diverse docent corps across the Institution.

Curators and Researchers as Educators

Interviewees indicated that curators, scientists, and researchers at the Smithsonian have a variety of attitudes toward educational functions, ranging from complete indifference to enthusiastic participation. A number of units, however, are now requiring that curators and researchers spend a certain amount of time on education activities for general or school audiences. One implication of this policy, according to an interviewee, is:

> *What we don't want to do is hire some scholar who's been buried in the ivory tower somewhere and plunk them in an office here and never have them go on the floor. We don't have the resources to afford that anymore. You want people who bring that skill and interest to the public dimension.*

However, interviewees sounded a note of caution about this approach. Staff with little interest, experience, or training in public engagement may not engage well with visitors, and compelling them to do so can be a negative experience for both parties. And, as noted, curators and scientists need to get credit for time spent away from their main work if they are to have any practical incentive to rebalance their efforts:

> *Scientists need to be given more credit for working on exhibits and educational programs. … [But I don't think it should] be mandatory, because some of them just don't have any talent, or interest, or time to do that.*

Discussion

Education is increasingly a field with many sub-specialities, particularly in informal learning, that require academic training as well as relevant work experience. Audience sub-specialization, for example, is often desirable. A person with college-level teaching experience

may not know how to work effectively with kindergarten children. Specialized skills in ancillary areas such as technology and evaluation are also increasingly important.

The lack of clarity about educators' role and the specific expertise they need to bring to the table may explain some of the tendency, seen at many units, to regard them as less professionally accomplished and worthy of respect than other professionals. For the most part, neither the central administration nor the units have done an adequate job of defining the qualifications or roles of educators, which in turn makes it difficult to staff the education function with appropriate personnel or provide appropriate training for existing personnel. At many Smithsonian units, educators are seen as curricular, subject-area, or K-12 generalists who can learn needed skills informally on the job. Managers generally have not had the required training or experience for that role. As the Smithsonian moves to strengthen its educational offerings and target audiences with greater focus, it will need to approach hiring and professional development for education staff in a more systematic and focused way.

With respect to the claim that education is understaffed, there is no question that the workload is often excessive. However, whether the reason is a shortage of numbers or weak management, the study team cannot say. There appears to be an unwillingness at all levels, discussed elsewhere, to assess which education programs offer the best value and to cut those that do not. Having the right staff might bring gains in efficiency, as would greater pan-Institutional leveraging of limited resources. Thus, the study team believes that the perceived shortage of staff is attributable in part to a failure to design an education function that is consistent with the number of staff actually available, and to define the right skills that need to be secured through hiring of new staff or training of existing staff. To the extent that units assign greater priority to education, however, they will need to look carefully at the level of staff needed to meet education goals and ensure adequate staffing.

Assurance of adequate staffing is also complicated by the absence of good data on who is involved with education across the units and how much time they spend on it.

Appendix 15: Space and Facilities

Adequate facilities are of fundamental importance to the success of museum programming. Specific facilities requirements depend on a museum's educational mission and the details of its programming and are likely to evolve over time.

Interviewees generally perceived the Smithsonian's education function as having fared less well than curatorial and other functions in the "space race." As one person put it:

> *I'm sure every museum would say this, but when we design spaces, the first thing to get cut is education space. … We recognize we are not the first in line.*

Another interviewee concurred, adding:

> *When the [NMNH] Geology Hall, which opened in 1996, was originally planned, there were to be two spaces specifically for educational activities. The budget started getting tight, so that's the first thing that they eliminated.*

Assessing the overall state of facilities across the Institution, an interviewee noted:

> *Space for educational programming is a problem in some museums. New museums are usually designed to have about one third of their space dedicated to programming; if you were to average over SI, it wouldn't be anywhere close to that.*

Constraints

Programming Space

The situation with educational space varies from unit to unit, although on balance, it is a concern for many educators.

There are some bright spots. For example, NMNH's Discovery Room and NMAH's Spark Lab (previously known as the Hands-On Science Center) are popular hands-on family learning spaces that interviewees indicated have been at the forefront of museum practice in this area, and FSG's ImagineAsia space is well-suited to the needs of its family audiences. UHC, which was designed in part with educational programs and audiences in mind, includes classroom education space that is useful for visiting school groups. Several units such as NMAH, NMNH, NMAI, and NASM have plans to build out education space in the near future, in some cases to a very substantial extent. As part of the partnership between

GMU and NZP (discussed in Appendix 12, Collaboration), large investments are currently being made to upgrade the education infrastructure at the NZP's CRC.

At many units, however, interviewees pointed to space limitations that affect their current programming, create chronic logistical headaches, and constrain future growth. Examples include the following:

◊ NZP and FONZ operate a wide variety of fee-based educational programs, including children's camps, professional training programs, formal courses for undergraduate and graduate students, and classroom-based programs for students and adult learners. Interviewees indicated that facilities limitations—mainly in terms of space, but also in terms of other types of infrastructure—are a major factor limiting the growth of revenue from such programs:

> *We don't have space. We are maxed out on classrooms. We are maxed out everywhere. … We could build out 10 camp sessions a week, absolutely. But do we have ten classrooms? No. We have more like six—and one of those is really a hallway.*
>
> *[The classrooms] are oversubscribed. We could do probably ten times what we do now, but we just don't have the space. We're really tight on space here.*

◊ Space came up repeatedly in talks with TSA interviewees as a major problem for that unit:

> *Everybody [else] has an auditorium. We have nothing except for these classrooms down here [in the Ripley Center], and [they are] also open to the rest of the Institution. It makes it very difficult to find space to be able to do what we need to do.*

A good deal of TSA programming must be scheduled in the facilities of Smithsonian museums. In accessing these facilities, TSA faces inconsistent fee structures and access terms. Some units charge substantial sums for intra-Smithsonian rentals, while others (such as NMNH, with respect to its Baird Auditorium) charge only a token fee. As a TSA interviewee noted:

> *It's very inconsistent, and it varies terrifically from museum to museum, because there's no centralization. Each one has been able to set its own fee structure, so it's kind of crazy. But we are dealing with it all the time.*

Even in best-case scenarios, interviewees at TSA indicated that they are sometimes limited by the shortcomings of the available space itself:

> *The Smithsonian's auditorium space is pathetic. Baird is the biggest, and it only seats about 550.*

An interviewee pointed to TSA's recent Pompeii program as an example of a program that had to limit participation to a level far below demand because of space limitations. Another complaint was that audiovisual equipment can be outdated and can operate inconsistently.

- ◊ Central outreach units such as SCEMS, SLC, APAP, and NSRC have no public programming space of their own. Thus, anything they do with a public programming component must be done in collaboration with other units, or held in borrowed or rented public space at the Smithsonian or elsewhere. This may or may not involve considerable expense—a SCEMS interviewee complained about having to pay $7,000 for auditorium space at a Smithsonian museum.
- ◊ SERC is a popular field trip destination for area schools and has made important inroads with the home-schooling community as well. But while its educational building is bright, attractive, and new, it is not large enough to handle the audiences that interviewees believe SERC is capable of attracting. While much of SERC's education programming takes place outdoors, interviewees indicated that they cannot schedule more visitors at any given time than the indoor facility can accommodate, because inclement weather may force activities indoors. The educational facility is also physically removed from the rest of the SERC campus, which may exacerbate the professional distance between researchers and educators (discussed in Appendix 8, Organizational Culture).
- ◊ Most units reported a lack of dedicated classroom or other off-floor programming space for visiting school groups. For instance, the successful classroom-based programming conducted at NASM's UHC cannot be duplicated at NASM's Mall building, which lacks adequate classroom and support facilities.

One pervasive concern was the inability of current infrastructure and facilities to support education program growth. While the precise directions of such growth are difficult to predict, it is not difficult to imagine how growth in variety of areas could be constrained by such factors. For example, ramping up collaborative efforts with D.C. public schools or expanding teacher professional development offerings would probably require more space for onsite instruction of students and teachers. Making distance learning a larger part of the

menu of Smithsonian educational offerings would require more widespread access to facilities with high-quality technological infrastructure for hosting videoconferencing and other live programming.

Some museums have tried to get around a lack of programming space by such approaches as learning carts that are taken onto the museum floor to create impromptu education space almost anywhere. The carts typically feature an informal, often interactive discussion of a topic by a docent (or occasionally a staff member), complemented with touchable objects. Some interviewees favored carts and similar on-floor offerings over classroom- or auditorium-based museum learning experiences, arguing that they make far better use of the unique informal learning strengths to be found in a museum environment, particularly object-based learning. Learning carts are in use at a number of Smithsonian units. For example, history learning carts are an important part of the educational program at NMAH, and SAAM has been experimenting with carts to make the art museum experience more family-friendly. They are widely used at the science units.

Support Space

Less obvious but equally important is behind-the-scenes space to support programming. Office and work space for education staff and docents, meeting and conference rooms, and places to store education materials and supplies all tend to be in short supply across the Institution.

Although the needs of education staff for adequate office space and support infrastructure are little different from those of other Institution employees, the education enterprise relies more heavily on volunteer labor, primarily in the form of docents, than most other programmatic functions do. And docents and other education volunteers need safe places to store their belongings, somewhere to prep for and rest from their time on the floor, internet connections for research and fact-checking, and so on. One example of a well-planned space to support such volunteers is the docents' lounge in the Reynolds Center, which NPG and SAAM docents share. The lounge is in fact a library and work area where docents can research and prepare their tours and other programs. One interviewee enthused:

> *It's wonderful that [the docents] have this spot here. It has their library; it has books; it has vertical files on particular artists; and it has computer access so they can look in [The Museum System catalogue] or the web.*

A shortage of storage space is a problem at many units. Lack of space for storing materials for specific uses and events can result in additional costs and lost staff time. In one instance discussed by an interviewee, equipment needed on a routine basis had to be placed in "deep"

storage when not in immediate use, because the limited space in regular department facilities had to be used for operational purposes. This meant a lot of packing and unpacking on a regular basis, and a lot of wasted time.

Accessibility

The accessibility of space to learners is also critical. It must be easy to find and free of undue barriers.

Museum and gallery design today must meet the requirements of the Americans with Disabilities Act (ADA) and other accepted best practices. However, many Smithsonian facilities predate ADA requirements, and pose obstacles to some individuals with disabilities. More generally, several interviewees indicated that accessibility to learners of all descriptions needs to be a consideration when planning the exhibitions and programs that go into a space. As stated by one educator:

> *I would say accessibility and dealing with different learners with disabilities [is] an area that needs to be thought about in terms of education, and needs to be dealt with.*

Security considerations can pose access problems, too. For example, NASM has a classroom-sized briefing room that could be used part-time for educational purposes, but it lies in a secure part of the building, which makes it difficult for the public to access.

Amenities and General Condition

In addition to the more obvious aspects of facilities infrastructure such as lighting, power, phone and computer lines, HVAC, way finding, and audio-visual capabilities, more mundane facilities components are also important for program success. These "little things" can have consequences, because teachers and the general public have many choices when it comes to informal educational options—especially in a city such as Washington, D.C. Among the little things are:

- ◊ *The general condition of facilities.* Many Smithsonian buildings are old and in need of costly maintenance and renovation. Facilities in a poor state of repair affect onsite educational programming indirectly by giving the learning experience a negative look and feel. In a few cases, the effects may be more direct; for instance, GGHC staff worry about doing programs in the rotunda because if it rains, the roof leaks.
- ◊ *Inadequate student lunch facilities.* One educator noted:

The Smithsonian is not a friendly and welcoming environment for many visitors. For example, there is no place to have a bag lunch. Kids come and have to sit on the floor. It's not very welcoming.

◊ *Inadequate space to store belongings during visits.* At many Smithsonian museums, both school groups and general visitors must contend with a lack of secure facilities for storing coats, backpacks, umbrellas, and other personal belongings.

Conflicts with Special Events

The use of unit facilities to raise money by co-hosting private events is a financial necessity for many Smithsonian units, and such revenue generation is typically considered a higher priority than educational programming. Conflicts between education programming and special events fund-raising opportunities can take several forms.

Because requests for special events space are sometimes made on short notice, museums typically want to keep their after-hours calendar as clear as possible for as long as possible. This means that educators often cannot secure space for after-hours programming until a few weeks prior to the proposed program date—which may in some cases be too late for preparation and promotion. At NASM, for example, the evening calendar is generally held open for special events requests until three weeks out (with the exception of high-profile, externally-sponsored education events). Another issue is that many special events co-hosts want exclusive use of a facility, and the set-up for an event may cut into afternoon access to part of a unit.

Coordination

Several units are currently planning to create major public education facilities of their own. At two of the largest Smithsonian museums, plans for such facilities are proceeding apace. NMAH is planning to build an education facility as part of continuing renovation of public space. A senior NMAH interviewee related:

In our master plan, we have an education wing designated for development on the first floor. In my wildest dreams, I would love to build a whole new west wing that could be devoted to education, and create a National History Center. It seems like NMAH would be a logical place for that.

Although the details of this education center are yet to be filled in, NMAH interviewees had great ambitions for it:

> *We don't know what that's going to be yet. We want that to be the Hands-On History Room for the 21st century. When the Hands-On History Room opened, it was a revolutionary thing for history museums; you already had them at natural history museums, but no one knew how to use them in history museums. … The question is, what do we do now? We want to get our planning grant, then sit down, think, bring in people from the outside, and decide whether in this day and age [the education center] should be a room, or satellite components that are all over the building, or what.*

NMNH is planning a 10,000-square-foot education facility, combining the present Discovery Room with the Naturalist Center (currently located in Leesburg, Virginia):

> *We are starting right now on testing of the design for a learning center. We decided to devote a large area—about 10,000 square feet—to a facility devoted only to education. The idea is to bring back most of the Naturalist Center, exactly in the same form. It is very large, but the idea is to replicate a … space where we can use collections to work with school children to learn how to ask and answer questions and to focus on science education.*

Interviewees at NMAI indicated that leadership there is interested in creating a permanent family learning space. And NASM is working on a gallery in collaboration with NASA that may have some type of a built-in educational broadcast capability.

As in many of the other areas discussed so far, units tend to go their own ways in space and infrastructure planning. Thus, they are potentially missing opportunities to leverage resources—if not in terms of actually sharing space, then at least in terms of coordinating plans and communications that would allow them to share lessons learned and avoid unnecessary duplication of efforts. To the study team's knowledge, there has been no coordination among units pursuing major education facilities initiatives.

A number of interviewees discussed the possibility of using the mothballed AIB as a central educational facility for the Smithsonian, with features such as:

- ◊ Adequate and well-equipped space for classrooms, workshops, labs, auditoriums, and experimental venues;
- ◊ A studio/broadcast center, and additional technological infrastructure to support functions such as videoconference distance learning, electronic field trips, and internet-based programming; and

- ◊ A teacher resource center where visiting teachers can get materials and information, offer feedback on current Smithsonian educational offerings, and provide ideas for new types of offerings and support.

A central facility would be available for use by all units and would showcase pan-Institutional themes and efforts. It would offer a Mall presence to off-Mall units, as well as provide central units such as TSA and the outreach units with programmatic space that they currently lack. It would provide smaller units that lack the resources to invest in major educational infrastructure on their own (either physical or technological) with access to such infrastructure.

One interviewee also discussed how the transformation of AIB into an education center could jump-start some of the pan-Institutional collaboration on education that is currently missing:

> *I think it would be interesting if AIB was turned into an educational center. You could have [TSA and] SCEMS located there, and we could all work together. It could be the educational hub of the Smithsonian, which would be really great. It's bringing things alive … [bringing] the culture, the idea, the [object] alive through performance, education, lectures, seminars, films, concerts. If you had a hub—a performing arts center and educational hub for the Smithsonian—then people could come in and see it as a destination. … Right now when you come to the Smithsonian you have to find everything [on your own]. We could make this all-encompassing and work together on it.*

Discussion

While the picture on educational programming and support space and facilities is mixed across the Institution and has some bright spots, there is concern over the sufficiency of space and technology for current purposes, let alone accommodating growth and new directions in programming. While many individual units have recognized a need to upgrade their own education facilities, there has been little consultation among them to identify where cross-unit leveraging of facilities might be beneficial.

In some areas such as auditorium space and facilities for distance learning, many units—especially smaller ones—would clearly benefit from pan-Institutional facilities. Likewise, off-Mall units could benefit from physical space on the Mall for showcasing their public and educational programming.

The study team believes the use of AIB as a central Smithsonian educational facility is worth exploring as a means of increasing and upgrading educational space for all units.

Appendix 16: Technology

In the context of education, technology has many meanings. In this report, the study team has limited its focus to two dimensions: digital media accessed through the internet (primarily websites and products made available on the web), and other miscellaneous technologies (both digital and analog) tied to the Institution's education function.

I. Internet Technology

Throughout the interviews, respondents referred to the importance of the web in supporting and enabling education. As one interviewee put it:

> *I believe the web is the answer, particularly for the future, and we need to keep getting better and better at it if we are going to stay in the game.*

While there was strong support among interviewees for use of the web in education, the discussion was complicated by the various ways that the word "education" is used. As noted elsewhere in this report, there are those for whom the term primarily refers to offerings for schools and children.[141] At the other end of the spectrum are those who use the word "education" to refer to everything the Smithsonian does in the public arena.

In the case of the web, the distinction between narrow and broad definitions of education is particularly significant. Since the web is a relatively new phenomenon at the Smithsonian, it has not yet secured a clear place within the organizational structure. Some units have given their public affairs office authority over the web, presumably because it is seen as a public information instrument. In others, web specialists report to education managers. In yet other units, web specialists are seen as technical support, and report to administrative officers. These formal reporting structures affect what is done in terms of web content, and how it is done.

In practice, most units treat the web as an adjunct to other activities, in a way that resembles publications. The educational purpose of a website thus typically takes on the educational aim of the program with which it is associated, and each website is considered the responsibility of the department or project team that created the underlying program. For example, an exhibition team builds or commissions a website for its exhibition; an education department creates a website for students or teachers; a research department creates

141 In some cases, these associations are relatively loose (for example, when program content is loosely aligned with formal learning standards after the fact), and in other cases they are close (for example, online training courses for teachers).

a website to display its research; a unit creates a web-based store to provide income; and so on. Because the costs of these web activities are often buried within another program's budget, it is impossible to determine how much is currently being spent on the web across the Smithsonian. The only web costs assigned to education are those that originate within education departments.

Educational Aims of the Web

The educational aims of Smithsonian websites can be divided into four categories on the basis of how users are expected to approach the web material: access, engage, change, and respond.

Access

Web offerings in this category anticipate that users will browse or search, find what they want, and use it in a way that will provide them with some benefit, educational or otherwise. Photos of collection objects, information on hours and programs, data of various kinds, and materials for download are all examples of this type.

Successful access websites offer ease of search and navigation and comprehensiveness of offerings. According to interviewees, many Smithsonian websites are deficient in both these areas.

Because each Smithsonian unit has different offerings presented in different ways, it can be very difficult for the user to find what he or she is looking for among the Institution's collective online content. Units' individual identities, which they strive to preserve in the online environment, pose an obstacle to those who want easy access. As one interviewee noted:

> *My feeling is the people from the outside for the most part have no earthly idea and* don't care *that the Smithsonian is made up of 19 museums [and numerous other divisions]. … And they find it strange, I think, that they can't quite get what they want from one place. Most people, truly, just want what they want; and if you point them in the right direction and help them [find it], they're fine.*

This problem has been recognized for some time, and efforts are underway to create a central search system that would mitigate these access difficulties. For example, the Cross Catalog Searching Center (http://siris-collections.si.edu/search/) currently has two million records from multiple Smithsonian units. The problem of comprehensiveness is also well-known, and is being addressed through the current OCIO digitization initiative.

A particularly interesting example of an access site is the *Encyclopedia of Life* (www.eol.org), on which the Smithsonian is partnering with natural history museums and research institutes internationally. This site aims to present information on all known living species for both the general public and specialized users. A study of the site's early audiences highlighted the difficulty of designing a site that could successfully serve both searchers and browsers (Goldman, et al. 2008).[142]

Even if the problems of access are resolved, however, is access itself sufficient? Some staff think the primary consideration should be making accessible as much as possible of the Smithsonian's collections and other resources, as quickly as possible. Others, however, argue that there should be educational aims beyond simply making resources easily available. One interviewee discussed this issue in these words:

> *We've got this amazing collection. And the world is going digital, so everybody wants to look at things online and gain accessibility. But what do we want people to* ***learn****? What are the learning outcomes that we [want to] see? Because we could end up with just a huge wodge of material—just this glob. We could just become this supermarket of artifacts and culture. We've got to really think carefully, as an Institution, about what learning outcomes we want people to have from seeing our collections online. We've got to curate those learning experiences. And I don't think we've yet started that debate.*

Engage

Many Smithsonian websites are inspired by exhibitions, and are meant to provide educational experiences in a way that is similar to exhibitions—that is, through random interactions between users and content, including images, texts, or videos. A recent example is the website for the new *Sant Ocean Hall* (http://ocean.si.edu/ocean_hall/explore_ocean_hall.html). In one remarkable case—the most literal version of an online exhibition—the newly opened SLC Latino Virtual Museum presents a virtual space through which the user's avatar can move and interact in the same way that a visitor would move in a real-world museum.

In a few Smithsonian websites, as in a few Smithsonian exhibitions, the presentation is rich with interactives. An example is inventionatplay.org, the website for the Lemelson Center's *Invention at Play* exhibition, which includes several games, activities, and pop-up features that invite interaction.

For some interviewees, particularly those who stressed the onsite encounter with real objects as the foundation of the Institution's educational strength, there is some tension between the

142 Accessed at http://eol.org/files/pdfs/docs/EOL_ILI_Final_Report.pdf, May 5, 2009.

idea of experiencing the Smithsonian through the web and experiencing it in person. As one interviewee remarked:

> *What does [an authentic object] do? It validates the existence of something historical. It is the most visceral form of validation of an historical event or an historical fact or the existence of something. That is the bottom line, and you go up from there. When we go virtual, you can say that at a certain level we are transmitting and making accessible information about that object. But what are we promoting? We are promoting an increasing unwillingness to experience [the object] yourself.*

Change

Purposively instructional Smithsonian websites are designed to influence visitors' thinking, often by telling a comprehensive story in a linear way, not unlike a lecture class. An example is the NMAI *Native Words, Native Warriors* site on American Indian military code talkers in World War II (http://www.nmai.si.edu/education/codetalkers/). Other examples are the lesson plans and resources provided through the Smithsonian education portal, http://www.smithsonianeducation.org/educators/.

More generally, a web experience itself can be designed to be transformative. As one educator said:

> *There are millions of kids and millions of teachers and millions of families who want to see some of our stuff—who would be transformed by [seeing] some of our stuff. So our job is to help them get to it, understand it, and take from it what they can.*

Respond

As Smithsonian museums have begun to explore the possibilities of Web 2.0, they have offered users the opportunity to talk to them in various ways. There are 20 Smithsonian blogs, for example, currently listed on the main Smithsonian portal site. The most striking use of visitor feedback at the Institution as of this writing was *Ghosts of a Chance*,(http://ghostsofachance.com), an Alternate Reality Game hosted by SAAM, in which the input of users was a critical component in the activity.

Although the Smithsonian has a number of blogs, very few comments are recorded on most of them. Indeed, the user may have the sense that Smithsonian blog writers are not addressing a real public; in general, they have an institutional rather than personal feel.

This may be due to the insistence in many units that blogs be reviewed and approved by administrators. As one interviewee observed:

> *We're struggling to keep [the blog] from being a public relations mouthpiece. We're trying to keep it personal and not promotional. … [But] it is reviewed; in that sense, it's not like a typical blog. It is reviewed and approved by a committee before it goes up.*

Facebook has been an effective way for some units to interact with web users:

> *[On our museum's Facebook page there are] also two separate "walls" at the bottom where people can write reviews or ask questions. There are monitors, so if people ask questions, we respond to them. People get really excited when there's a two-way dialogue with something they see as being so unreachable—the Smithsonian is answering your Facebook message. That's a very personal experience.*

Most of the Smithsonian's interactive activities are educational in a broad sense—even those not produced by education or curatorial staff. (Indeed, the science blog produced by *Smithsonian* magazine, http://blogs.smithsonianmag.com/science/, is arguably one of the most educational Smithsonian blogs.)

It should also be noted that the movement to Web 2.0 platforms presents a generational challenge at some units. As one interviewee said:

> *Upper administration tends to be older, and they haven't had the experience with Web 2.0 programming. They just don't know that Facebook is how [people of my generation] interact on a daily basis, and that it's where people 25 and younger are getting the majority of their information. If you haven't used those programs, you don't understand what they are, how they work, and why they are valuable. So it was impossible to get buy-in from my upper administration [for Web 2.0 initiatives], because they were just like, "I don't know what this is. Why would we do that?"*

It is clear that the current Secretary is very committed to moving ahead with Web 2.0. As part of the strategic planning initiative, in January 2009 the Institution hosted a two-day conference, "Smithsonian 2.0: A Gathering to Re-Imagine the Smithsonian in the Digital Age." More than 30 creative leaders from the web, digital, and new media worlds met with a core group of Smithsonian staff to look at the Institution's vision, challenges, and current level of achievement in the web and new media, and to identify how to move the Smithsonian forward toward a "Smithsonian 2.0."

Reach and Effectiveness

The online portfolio of the Smithsonian includes 150 public websites and 50 internal sites. The variety within Smithsonian web offerings is amazingly broad, which might itself be a problem for some visitors. As noted above, there are obstacles for users as they attempt to find their way through this thicket of diverse offerings. The wide array of topics, approaches, paths, museums, and websites suggests a fractal diversity that diverts user attention.

Reach

The status of the Smithsonian's web profile as a whole seems disproportionately small when compared to the power of the Institution's name and the breadth of its offerings. The Smithsonian domain (that is, all Smithsonian website addresses that end in si.edu) currently ranks around 7,000 according to alexa.com.[143] Using alexa.com information regarding related links (as determined by their data mining and classification of users' movements), it is possible to divide si.edu users into three major categories: art users, science users, and reference users.

- ◊ Art users also visit websites such as the National Gallery of Art (nga.gov), Metropolitan Museum of Art (metmuseum.org), Museum of Modern Art (moma.org) and Los Angeles County Museum of Art (lacma.org).
- ◊ Science users also visit sites such as the Exploratorium (exploratorium.org), National Geographic (nationalgeographic.com), U.S. Geological Survey (usgs.gov), American Museum of Natural History (amnh.org), and London's Natural History Museum (nhm.ac.uk).
- ◊ Reference users also visit the Library of Congress (loc.gov).

Comparative data for these sites are shown in Table 16-1.

While the Smithsonian website is used more heavily than those of any individual art or science museum (such as the Metropolitan Museum of Art or the Exploratorium), it is used much less than the websites of the Library of Congress or National Geographic. The pattern of usage as reflected in these related links and in the alexa.com demographics for si.edu

143 Millions of users have installed Alexa Internet toolbars on their computers, and the company has one of the largest web crawls and regularly processes massive amounts of data. Comparative information drawn from this research is available at alexa.com. According to alexa.com, 20 percent of those using si.edu also use prism.si.edu, suggesting that in-house use is a major factor in the si.edu traffic ranking. All alexa.com data in this appendix are as accessed on May 3, 2009.

suggests that it is primarily used as a museum site by the same types of people who frequent museums as visitors.[144]

Table 16-1: Comparative Data for Selected Websites

Source: alexa.com.

Domain address	Traffic Ranking[a]	Avg. time (minutes)	Number of sites linking in[b]
si.edu	7,000[c]	3	7,000
metmuseum.org	19,000	3	8,000
moma.org	26,000	2	8,000
nga.gov	50,000	2	5,000
lacma.org	101,000	4	2,000
nationalgeographic.com	1,000	3	20,000
usgs.gov	3,000	3	6,000
exploratorium.org	25,000	2	7,000
amnh.org	39,000	2	4,000
nhm.ac.uk	45,000	3	4,000
loc.gov	3,000	3	21,000

a. Traffic rankings and number of sites linking in have been rounded to the nearest thousand. Traffic rankings are calculated using a combination of average daily visitors and page views over the past three months. (For example, the site with the highest combination of visitors and views is ranked number one.)
b. The number of other sites linking to this site. Multiple links from the same site are counted only once.
c. Two years ago the alexa.com ranking for si.edu was 4,000. Other sites in this table also had higher rankings in early 2006: metmuseum.org was 9,000; exploratorium.org was 17,000; nga.gov was 24,000. This probably reflects the general proliferation of websites. However, the Smithsonian's slippage might also be influenced by the fact that the annual count of visitors to si.edu declined for the first time in 2008 (by 6 percent compared to the previous year).

All of the websites in Table 16-1 qualify as educational according to most definitions, although none is specifically directed toward schools. Websites that are aimed at teachers and K-12 students are numerous, and include sites sponsored by publishers (for example, scholastic.com), educational organization sites (for example, eduref.org), and commercial sites (for example, edhelper.com). To serve teachers and K-12 students, SCEMS has been building a central education portal for the Institution (smithsonianeducation.org)—a web page containing descriptions of and links to a wide variety of Smithsonian educational programming and materials. It features a search function that allows browsing by specific state standards of learning and other parameters. The portal is designed to be a "one-stop shopping" site where teachers can easily find and acquire a wide variety of educational

144 According to alexa.com, si.edu users are more likely to be ages 35-64, female, and college-educated, when compared to internet users as a whole.

resources. However, as yet this portal website is much less visited than other major education websites. (See Table 16-2 for some examples and details.)[145]

Table 16-2: Comparative Data for Selected K-12 Websites

Source: alexa.com.

Domain address	Traffic ranking	Avg. time (minutes)	Number of sites linking in
smithsonianeducation.org	326,000	1	1,000
scholastic.com	5,000	5	6,000
edhelper.com	8,000	3	2,000
abcteach.com	13,000	4	2,000
educationworld.com	26,000	3	4,000
eduref.org	34,000	1	2,000
teachers.net	40,000	2	1,000

Effectiveness

The educational effectiveness of Smithsonian websites has not yet been established. Overall, the quality of presentation is variable, ranging from cutting edge to "orphaned" sites that are not kept current. Some use dynamic, contemporary design; others are staid and dated. (The central portal has not been redesigned since 2002.) Web offerings across units are inconsistent in content, features, and approach. As one interviewee said:

> *It should be easy to use. … If you came to the Smithsonian website, I would like to see some sort of a presentation that is easy to figure out. … [For example,] if you want to know about natural history, there would be a hot link that would get you there; and when you get to the natural history webpage, it should look a lot like the Smithsonian [home page] in terms of functionality, although not necessarily in terms of content. … So I don't have to relearn every time I go to another site—"Okay, how did this guy put this together?" … If it's not user-friendly and it doesn't help me go where I want to go and easily find my answer, then I don't think it's good enough.*

ForeSee Results, a firm specializing in online customer satisfaction measurement, is currently surveying users of Smithsonian websites under a contract with OCIO to determine users' satisfaction, characteristics, and interests, as well as their opinions on the usability of the sites

145 According to SCEMS, Smithsonian education resources increasingly are being integrated directly into school district and state websites and accessed via these sites, rather than via the Smithsonian's own portal.

and the usefulness of the information they present. This is an important first step toward improving the educational effectiveness of the Smithsonian's websites.

Web Management

According to an interviewee familiar with the issue, Smithsonian websites are administered by about 150 full- and part-time web masters and web specialists across the units, including five at OCIO. The positioning of these staff members within their units varies widely. In some cases they report to the director through an associate director for public programs, in others through an associate director for operations, and in others through an associate director for communications. Their area is variously identified as "new media," "media and electronic outreach," "web services," and so on. Their responsibilities in addition to the web can include exhibition interactives, exhibition videos, digital signage, and handhelds to be used in galleries.

As is obvious from this variety of organizational arrangements, there is no consensus, either across or within units, about how to conceptualize the web's role. It is usually understood as an extension of existing frameworks. Thus, different people see it as a publication medium, a public affairs medium, a collections access medium, an extension of exhibition activities, a distribution system for educational materials, and a distinctive medium of its own, requiring unique approaches and offering unique opportunities. In some units, web-related personnel are regarded as primarily technical support specialists; in others, they manage content and presentation much like exhibitions personnel. As the importance of the web grows, administrative conflicts over its control may intensify. This is more than a turf issue, because, in the absence of a broader strategy, the character of websites tends to reflect the priorities of their parent administrative unit.

Overall, the Smithsonian appears to be making only a modest investment in its internet presence. For example, under items budgeted as "education" (excluding collection and exhibition websites) in the ERP system, less than 2 percent of all expenditures are for web activities. There is a strong sense among many at the Smithsonian that the current level of resources is inadequate for a major web presence, as the following exchange illustrates.

> Interviewer: *If the Secretary were to walk into your office right now and say "What should I do," what would you say?*
>
> Interviewee: *Devote more resources to electronic media. I think that's where we're lacking.*

In addition, the Smithsonian has given relatively little attention to the web's potential as a marketing tool; this is certainly true in comparison with competitors such as National Geographic. For example, the web is underutilized for development outreach, and the failure to better integrate si.edu and gosmithsonian.com (the central information site for Smithsonian visitors) is a missed opportunity to more effectively serve the public.

There is a fundamental lack of consensus on how the Institution should move forward to realize the full educational potential of the web. The attitude toward emerging online opportunities varies among units. Some approach them in a spirit of experimentation; others display hesitation and resistance. However, all accept that the internet has become the key to maintaining and expanding the Smithsonian's national and international presence. Some interviewees noted that if the Smithsonian does not keep up with developments in the online world, it risks becoming obsolete:

> *In general, museums are going to become less and less relevant to future generations. … The virtual world is overtaking the [physical] experience; we have to be more a part of that than we are. How many museums have their entire collection online at the Smithsonian? Are there any? … We should be leaders not only in providing all of that raw material, but in creating packages, stories, and experiences [for different audiences] who want more than just the raw material—a teaching experience, a learning experience.*

Despite the obvious importance of the web to its future, it was not until recently that the Institution had a coordinated strategy for the internet. In 2009, OCIO issued its "Smithsonian Web and New Media Strategy, Version 1.0."[146] It talks about an updated digital experience, a new learning model that helps people with their "lifelong learning journeys," and the creation of a "Smithsonian Commons" dedicated to stimulating learning, creation, and innovation through open access to Smithsonian research, collections and communities.

Challenges

The promise of new technologies is accompanied by new challenges that go beyond those associated with traditional "live" programming and printed materials. As noted above, the lack of an agreed-upon definition of what education is at the Smithsonian, and what the role of the web should be within the context of that definition, is an important issue. Are only the websites produced by education departments or aimed at children and teachers "educational"? Do education staff have a role to play in the creation of websites that primarily focus on collections or research? Just as each unit and individual tends to have a

146 Available at http://smithsonian-webstrategy.wikispaces.com.

different understanding of "education" at the Smithsonian (some broad, some narrow, and some in-between), so too are these varying viewpoints reflected in the many approaches to the Smithsonian web.

Another special challenge with websites, as with all digital media, is the need to keep them maintained and up-to-date. Technology is continuously changing, and effort is required just to maintain the status quo, let alone advance. New standards and new platforms require upgrades; equipment needs to be regularly replaced; content and links need to be kept current.

If the Smithsonian opts to move in the direction of providing freely accessible data and images that users can apply to their own purposes, it will increasingly encounter legal issues with respect to ownership and reproduction rights. Real participation in Web 2.0 platforms—which involves accepting and posting comments, responding to users, and engaging in dialogue—will certainly require additional staff, even though commercial infrastructures to organize and simplify the task are now available.

The shift to Web 2.0 is also a challenge for those who believe that allowing user input weakens the authority of the Institution. As one interviewee put it:

> *We are still an authority, but people are afraid that they will lose their authoritative [status] because they allow their visitors input.*

While there is likely to be a continuing need for outside experts to contribute to the creation of Smithsonian websites, there are larger questions of who should be involved in guiding this process. Those experienced in website development appreciate that this medium requires its own approach. In addition to platform experts, teams constructing education websites should include content experts, educators experienced with the online learning environment, designers with web usability experience, and web project specialists who know how to manage projects of this kind.

Considerably more attention also needs to be given to web audiences that are not being well-served at present. Chief among these is children. As one interviewee said:

> *We're trying to reach out to children through our educational materials, and next we have to go to the web and figure out how we're going to connect to children through the web.*

More generally there is a need to conduct more studies of web users. Who are they? How do they differ from in-person visitors? How are they using Smithsonian websites? How do they benefit from such use?

It is widely understood that experimentation will also be a critical element, if the Smithsonian is to realize the full educational potential of the web. Many interviewees are eager for that opportunity. As one of them put it:

> *One of the reasons why I wanted to join the Smithsonian is that I like this mission statement that we are here for the increase and diffusion of knowledge. That is a good place to start. … The way that encapsulates not only our responsibility to this generation, but also to future generations, is quite unique. There is a very difficult challenge inherent in that as well. Increase knowledge—for whom? About what? And how? I think of the kinds of challenges that the scientists at the Smithsonian must face, where quite often you are doing research, and you are not really sure why. … A courage is required, and a sort of a faith. There has to be a tolerance and enthusiasm for pure research, and a tolerance of risk. To increase and diffuse knowledge and to adapt our methods to changing times, we are going to have to try stuff, at least half of which isn't going to work. There has got to be support, both moral and financial, for doing that.*

II. Other Education Technologies

Websites are not the only technology important for the delivery of Smithsonian programs or the collaborative work necessary to create them. Other technologies are used to deliver education programs, contribute to learning in exhibitions, and support Smithsonian outreach.

Education Program Delivery

Television Broadcasting

Recent technological advances have made educational TV broadcasting easier and cheaper than ever before. However, expensive technical infrastructure is typically necessary; creating enough educational programming to fill a broadcast schedule takes time; the competition for viewers is fierce; and broadcasting to a large audience requires a broadcast channel, a satellite channel, or cable system access. The Smithsonian's major foray into this realm has been

through the Smithsonian Channel partnership (discussed in Appendix 6, Audiences and Programs).

Electronic Field Trips

One type of outreach programming that has become popular is the electronic field trip, a real-time broadcast from a museum (or other learning organization) that is broadcast via satellite, the internet, or both. As with any broadcast-style offerings, electronic field trips are expensive to produce, requiring a skilled technical team, a broadcast truck, costly equipment, satellite time, on-screen talent, and a distribution network. Since the Smithsonian does not at present have the required infrastructure, it has relied on partners—for example, Ball State University and the Fairfax County, Virginia Public Schools system (see Appendix 12, Collaboration, and Appendix 6, Audiences and Programs).

Videoconference Distance Learning

Some Smithsonian units are also using videoconferencing technology to conduct distance learning programs that deliver interactive programs to one or a few classrooms at a time. Videoconferencing technology is not new, but only recently has it become inexpensive enough to make videoconference-based education programming practical for Smithsonian units.

Some units experimented with videoconferencing a few years ago using proprietary systems such as Polycom. The quality was high, but the technology was expensive at both the sending and receiving ends. Because of the high cost, not many schools adopted it, making the potential audience small and generally excluding schools in traditionally underserved areas. Since then, internet-based videoconferencing capabilities have been created with much lower initial and operating costs. Schools bought in fairly early, because they have important administrative and other non-classroom needs for which videoconferencing can help, and many schools now have videoconferencing capability.

The biggest drawback of videoconferencing is the relatively small size of potential audiences—at least in comparison with broadcast programming. This, however, is the trade-off required to allow personalized interaction with remote audiences. Most videoconferencing equipment can in fact transmit to more than one receiving location (usually four), but distance learning instructors generally find that keeping everyone engaged becomes difficult very quickly when working with more than one classroom or audience.

Videoconference distance-learning programs often include a pre- or post-lesson conference to ensure the technology is working correctly and to set up or follow up with the learning

message. Good distance learning programs also typically have supporting websites through which ancillary materials, background information, resource links, and more can be distributed. Videoconferences can be archived and replayed. School administrators also like videoconferencing because it eliminates the risks and costs associated with the alternative of physically sending teachers and students to offsite locations.

At the Smithsonian, SAAM and NASM have ongoing distance learning programs that are offered at no charge to the receiving school;[147] SERC offers such programming on a fee basis ($150 per session); and other units are experimenting with it. Because of the high level of interactivity, such programming is relatively time- and labor-intensive. Even "off the shelf" offerings that are conducted routinely require at least one staff person for the duration. Thus, a distance-learning program with even modest reach typically must rely on docents or other volunteers, rather than paid staff, as the primary teaching cadre. Neither SAAM nor NASM is marketing its distance learning opportunities aggressively, because they already have all the audiences they can comfortably handle.

Videoconferencing can also be used to support educational activities other than distance learning classes per se. For example, a teacher professional development workshop could use a videoconference program to check on the progress of past participants.

Technology in Exhibitions

The use of technology in museum exhibitions can be highly effective in engaging the attention of visitors, particularly younger ones. As discussed elsewhere in this report, many interviewees discussed how younger audiences are increasingly interested in technology and disinterested in objects per se. Even a cursory observation of many a Smithsonian exhibition typically reveals young visitors who would prefer interacting with a box with a screen and buttons to contemplating the stunning objects surrounding them.

Exhibition technology does not have to be cutting-edge to be engaging. Examples of effective older technologies include the seismometers in NMNH's *Mineral Hall,* the supplementary audio offerings in NMAH's *Price of Freedom* and *America on the Move* exhibitions, and the flight control mechanism exhibit in NASM's *America by Air* gallery. More cutting-edge uses of technology can be seen in the *Science on a Sphere* global oceans system exhibit at the NMNH *Sant Ocean Hall,* QuickTime virtual reality kiosks at UHC, immersive *Lelawi Theater* at NMAI, and use in the art museums of flat-screen video displays that offer cultural or historical context to the artworks.

147 Free videoconference distance-learning programming is rare. Other organizations typically charge a fee.

Technology can also be used to mitigate accessibility issues faced by some Smithsonian visitors, as noted by one interviewee involved in exhibition design:

> *There are also technologies … to make [exhibits] more accessible, like providing sound spots that have audio description. We're looking at the potential of using radio frequency tags where someone who is blind would have a receiver and would be able to get information about an object based on the radio frequency tag.*

Other advantages of exhibition-based technology are that it can allow for more visitor choice in exploring objects and information of interest, and can create a more interactive visitor experience—an area that the Smithsonian is just starting to explore with various pilot projects of cell phone, podcast, low-power broadcast, and other audio supplements.

Behind-the-Scenes Technology

Effective and efficient collaboration is becoming increasingly important in the creation of educational programming, and is likely to become more so as the Smithsonian expands its interdisciplinary educational offerings and draws more heavily on its units outside the Washington, D.C. area. Long-distance exchanges of ideas and data require appropriate communications and other technological infrastructure to facilitate necessary interactions, in addition to the full range of conventional technology tools common to modern offices. A case in point is the recent adoption of SharePoint software at the Institution, which has greatly enhanced the ability of units to work together on targeted projects.

III. Discussion

The web is an absolutely critical vehicle for the Smithsonian's educational mission, and its importance is certain to increase in the future. Smithsonian websites are powerful tools for learning, but there is no consistent appreciation across the Institution for the unique potential of the web medium. The current state resembles the situation early in the history of exhibitions, when displays were treated as public extensions of existing methods of research or publication, rather than as distinctive media requiring a customized, team-based approach. Realization of the potential of the web will require a more sophisticated understanding of online audiences than most units currently possess. Organizationally, web functions have generally been shoehorned into existing administrative structures, often without consideration of how they might be effectively integrated with other functions.

Although web efforts across the Smithsonian demonstrate much grassroots creativity, ingenuity, and resourcefulness, they are fragmented and less collectively effective than they

might be with greater coordination and leveraging of resources. New technologies are a prime area for collaboration across units and for sharing information and lessons learned.

There is little consistency in the look, feel, features, content, and quality of sites across the Institution. Although this allows for variety, it also threatens to create confusion for users, who would be well-served by user-friendly portals that provide centralized access to scattered web-based materials on specific topics (Lincoln) or themes (climate change), or that serve specific audiences (teachers). The central Smithsonian education portal being developed by SCEMS benefits teachers in this way.

Given common needs and the existence of economies of scale, development of web infrastructure is best handled centrally, in collaboration with the units. This would also address a problem mentioned by a number of interviewees: an over-reliance on external contractors in the development of web-based resources, which limits the development of internal capabilities. Centralized web support can also perform a valuable service for the units by keeping them up-to-date on technology applications for educational purposes.

Non-web technologies will also play an increasingly important role in educational programming, engagement, and learning in the museum environment. The units will need to address acquisition, application, and use of these technologies in a systematic manner so that the necessary resources can be allocated, where possible, collaboratively. The public increasingly expects the integration of interactive media in exhibitions; this requires new ways of thinking for exhibition teams, as well as additional resources to maintain and upgrade these media over time.

Appendix 17: Staff Responses from the Strategic Planning Survey

As part of the Smithsonian's Strategic Planning Initiative, OP&A administered an online survey to Institution employees, which about 20 percent of the staff completed.[148] Although the scope of the survey was broad, many responses discussed educational programs and activities, as well as the Institution's educational function more generally. These responses are the subject of this Appendix.

I. The Smithsonian's Educational Role

The strategic planning survey indicated that many staff members have a reverent attitude toward the Institution. They referred to it as "beloved," "revered," "trusted," "respected," "prestigious," "reliable," "comprehensive," "objective," and "credible." They called the Smithsonian the "greatest museum district in the world" and "the benchmark for museums." These perceptions of the Smithsonian were applied to the Institution's education function and to other functions—for example, one respondent observed that the Smithsonian is "the model for excellence in museum education, premiere quality exhibitions, and an array of public programs."

This perception of the Smithsonian as a leader and icon led many to suggest that the Smithsonian is, or should be, at the forefront in the education field, for example by:

- … *[shaping] what a museum is and does, and how it educates people in every sense of the word;*
- … *[being] a leader in innovative educational programs, both onsite and via the Internet;* and
- … *[taking] its incredible national reputation and [using] it to develop innovative, far-reaching, and creative educational experiences.*
- Some respondents also suggested that the Smithsonian has an opportunity to integrate itself into current efforts in educational policy reform, and to lead the nation in education research.

148 Because respondents were self-selected, the results cannot be interpreted as the views of a representatitive sample of staff.

Other respondents talked in a more general sense about how the Smithsonian might influence the understanding of what education means to the public. For example, one respondent said:

> *[The Smithsonian could] set the tone for what it means to be an educated person—not someone with a degree, but someone who knows how to use the resources around them, think critically, ask questions, express themselves, and contribute to the rich tapestry of voices, scientific discoveries, historical interpretations, and artistic expressions and reflections in our nation. I think the Smithsonian can bring the idea of a learned citizen to an entirely new level.*

Another respondent said the Smithsonian embodies the ideal of lifelong learning:

> *Learning is not something that happens in a classroom with a book—it's a lifelong process [that] makes our lives fuller, richer, and better.*

Others talked about inspiration as the core of education at the Institution, noting that it is a "place of learning and inspiration," and has a role in "inspiring young people in our society to learn about our country and nature." One respondent summed it up in these words:

> *The Smithsonian can assist people in learning more about the world around them, about what it means to be an American … in ways that may surprise, delight, encourage, and provoke further thinking and understanding.*

Educational Strengths and Weaknesses

Strengths

A number of respondents talked about what they saw at the Institution's strengths in education. These included:

- ◊ Collections and object-based learning;
- ◊ Expertise in a wide range of subjects;
- ◊ Exhibitions;
- ◊ Innovative programming, such as hands-on learning centers and the Insect Zoo;
- ◊ Finding connections between education and research;
- ◊ Finding connections across a range of subject areas; and
- ◊ Telling the American story.

Weaknesses

Respondents also brought up some areas of weakness in the Institution's educational function. Some respondents suggested that educational programming suffers from fragmentation, insufficient resources, and lack of vision. One person noted that the Institution's education programs were "not cohesive" and "seem disconnected." Another suggested that the Institution had "no resources to provide world-class educational programming." Yet another noted a mutually reinforcing lack of ambition on the part of Smithsonian educators and visitors:

> *It appears that we have come to expect, even want, people to visit our museum to see what they already know, rather than to learn about something they don't know.*

Some respondents also noted a disconnect between research and education at the Smithsonian:

> *I believe one of its greatest weaknesses is that the Institution so far has not connected its greatest assets—its scholarship and research—with its larger public, the everyday museum visitor.*

Another comment was that the Smithsonian's dual mission of "increasing" and "diffusing" knowledge creates an ongoing competition for resources between education and research, to the detriment of both.

Looking to the Future

Survey respondents were asked to look towards the future and speculate on what the Smithsonian would look like if it continues to follow its current path, as well as more and less favorable paths.

Current Trajectory

In the educational area, some respondents saw a bright future on the current path. One noted that "the Smithsonian has made significant advances in the educational area, and hopefully that trajectory will continue."

Others thought the Institution's educational function was proceeding along a less promising path. One respondent suggested this was because the Institution is "not in touch with the educational needs of the nation."

Best-Case Scenarios

When asked about best-scenario futures, some respondents discussed how they hoped to see the Institution become a national leader and focal point for education, particularly on critical policy issues:

> *An informed citizenry is crucial to the survival of any great nation, and the Smithsonian plays an important part in achieving this objective.*
>
> *[The Smithsonian should] participate in a meaningful way in educating the public to facilitate the important changes that this country needs to make to face the future.*
>
> *[The Smithsonian could be] a vibrant center of learning that leverages the artifacts, but also serves as a conduit for generating knowledge, cultivating the interest and knowledge level of the public (youth in particular) in various manners, and acts as a community (even national) focal point of learning.*
>
> *[The Smithsonian should be] a leader in non-traditional learning, [which] impresses on the world that when one goes to a museum, one can experience something cool and exciting.*
>
> *Our society requires creative and critical thinkers. The Smithsonian is specially situated to foster curiosity and stimulate imaginations.*

Worst-Case Scenarios

Turning to difficult future scenarios, respondents worried about fewer programs, diminishing appeal to schools and young people, and reduced educational effectiveness. One respondent suggested:

> *The most serious problem will be [the Smithsonian's] reduced ability to respond to the need to disseminate information about the changing natural and cultural environment in which we live.*

Schools and Formal Education

Some respondents thought the Smithsonian should be more deeply involved in formal education through teacher development, alignment of education offerings with curricular standards, and credit- or degree-granting programs. One respondent suggested the Smithsonian could offer "symposiums for K-12 [science teachers] … and classes on how to

combat 'science phobia' in schools and politicians." Others wanted to see "more students awarded school and university credits for history studies at SI" and "more school outreach with lesson plans that specifically address state curricula." One respondent suggested that the Institution needs to "understand what school districts and universities seek, and be a partner in the delivery of these resources." Another noted:

> *We need to [become] more instrumental in the educational systems, both local and state. The Smithsonian needs to be more encouraged to do more outreach and establish better relations with the formal education community, providing more support to the underprivileged communities and programs.*

Outreach

Quite a few respondents discussed educational outreach as a central challenge and opportunity for the Institution. One asserted:

> *[The Smithsonian has a responsibility to] create exhibitions and programs that resonate beyond Washington, and to set the standard for museum education and outreach.*

In this connection, some respondents singled out SITES for praise.

However, there were concerns that educational outreach efforts fell short on the whole. A number of respondents argued that outreach was too concentrated in the Washington, D.C. area. Another thought that the success of the Institution in its education and outreach functions fell far short of its success in the research area:

> *Truly effective outreach and education [are not] happening on an Institution-wide scale. The "increase of knowledge" is great, but the "dissemination" is just not good enough.*

Another noted that to raise the bar, the Institution needs "increased focus on education and outreach, with enough staffing and funding to make these programs meaningful."

A number of interviewees suggested that the Smithsonian needs to do a better job of connecting with underserved communities in the surrounding region and beyond:

> *I strongly believe that the Institution should reach out to more minority communities so that they can share in this nation's rich history.*

[The Institution should] offer more programs for the children of Southeast Washington and Prince George's County that would expose these students to art, photography, etc.

Other respondents talked about the need to focus more attention and resources on international outreach. And one staff member suggested that the goal should be "the Smithsonian in every home in the United States," with the help of web technologies.

II. Other Subjects

Technology

Most respondents who addressed the issue of technology saw the Smithsonian as behind the curve with respect to the internet and other technologies. A number argued that the Institution needs to both expand and upgrade its web presence. One respondent noted, "Online education and outreach are getting better, but it's hard to see how we will ever be ahead of the curve."

Looking toward the future, several respondents suggested that they would like to see the Smithsonian become a leader in "e-outreach," expand its presence across the globe through technology, and digitize more collections to make them freely accessible online. As one noted:

The Institution has the opportunity to expand its "reach" across the globe through modern technology and should strive to do so at every turn. We must make the Institution more relevant to today's youth and encourage interest in scientific education, research, and experimentation through any means possible. Continued distribution of our vast storehouse of knowledge through media and the web is a must.

A number of respondents also noted onsite technology held out great promise for engaging visitors, and Smithsonian museums should have more of it. For example, respondents noted that "interactive programs and exhibits appeal to younger audiences," that "programs and activities that are hands-on and interactive create lasting memories for visitors," and that audio tours via cell phones create a more rewarding educational experience for visitors.

Exhibitions

Exhibitions are a significant vehicle for learning, and many respondents were positive about the Smithsonian's capacity to produce engaging exhibitions.

However, some criticisms of Smithsonian exhibitions were also voiced. The most common complaint seemed to be a lack of responsiveness to audience needs and interests. Other criticisms included:

- ◊ Lack of experiential, interactive, and immersive aspects;
- ◊ "Dumbing down" of content;
- ◊ Failure to address current events; and
- ◊ Unwillingness to tackle controversial topics.

A major question for some respondents was how much the Institution should be concerned about entertaining its visitors. One respondent asked:

> *What is the right amount of "Disneyfication" that will allow us to interest the public without losing academic credibility?*

Structure and Organization

Respondents noted some problems with organizational structure that have implications for education, mostly concerning the decentralized nature of the Smithsonian. One was the inconsistency that comes with decentralization:

> *Some museums and programs will be ahead of the curve in terms of technology, exhibits, museum education, and fund raising. Other museums and programs will be behind and unable to catch up and be relevant.*

One person discussed the inefficiencies that come from units working largely independently of each other:

> *The Smithsonian is … trying to be everything to all people. All units feel compelled to provide education, outreach, and programming at all levels, from pre-school to university to adult education, and we often duplicate efforts or don't have the budget to do things well.*

Leadership

As noted in Appendix 9, Leadership, many staff are hopeful that Secretary Clough will raise the profile of the Smithsonian as an educational organization. This was reflected in many respondents' comments:

> *Dr. Clough has the vision, the passion, the scholarship, and the leadership skills to help us chart the right course for the future.*

> *The new SI Secretary has a track record of putting education, the public, and the Institution first.*

Some respondents also suggested that Smithsonian leadership needs to focus more clearly on larger strategies and objectives for facing the challenges of the 21st century. According to one interviewee, this includes answering the question, "what role does the Smithsonian have in educating the average child and adult to be better citizens?"

Collaboration

Many respondents discussed certain types of partnerships that they would like the Smithsonian to form with external organizations. While some people were concerned exclusively with research partnerships, others discussed collaborations in education. For example, one respondent wrote about the possibility of partnering with other organizations in specific subject areas to tackle problems such as renewable energy and climate change. Others discussed partnering with specific types of educational organization such as colleges and universities, community groups, public schools, Federal organizations, nonprofits, and international organizations.

Financial Resources

A point mentioned by several interviewees was the trend toward increasing dependence on private and corporate contributions to support programming. Some suggested that the Smithsonian needs to work to become more attractive to external funders, and that a greater focus on supporting STEM education could be an important strategy for connecting with funders:

> *The need for more public interest and education in math and science is known to be a serious problem. This will be essential to the future funding of the Institution.*

Many respondents mentioned the free admission policy that prevails at most Smithsonian museums, which the vast majority saw as a positive thing, because it affirms the Smithsonian's status as a resource for all. Few respondents seemed to think that charging admission to Smithsonian museums was a sound strategy for raising resources.

Space and Facilities

A number of respondents wanted to see some sort of education center for the Institution that, as one put it, would provide a physical space to "merge education with social interaction [and] encourage collective experiences." Several interviewees suggested that the Arts and Industries Building could be converted into such as space.