

G. Brown Goode Smithsonian Education Lecture Series

The Smithsonian Center for Education and Museum Studies, in collaboration with the Science Education Department of the Harvard-Smithsonian Center for Astrophysics, established the G. Brown Goode Smithsonian Education Lecture Series in 2006. Through this series, named after the Smithsonian's earliest proponent of museums as educational institutions, Smithsonian and other museum staff can help keep abreast of emerging developments in education pertaining to many aspects of their work, from exhibit design to outreach in the schools.

A special presentation will begin the 2007 series:

How can cutting-edge advances in science be broadly taught in our nation's schools?

In this special G. Brown Goode Smithsonian Education Lecture, we will examine the process used by Project 2061, of the American Association for the Advancement of Science (AAAS), to help define scientific learning goals for all citizens in the United States, and look at how scientific ideas coming from new advances in science can find a place in the Nation's schools.

The lecture takes place on Thursday, May 31, 2007, 11:00 a.m. – 1:00 p.m. at the Harvard-Smithsonian Center for Astrophysics and will be web cast live, available at <http://www.cfa.harvard.edu/dvlwrap/live/live.ram>

Dr. Jo Ellen Roseman, Director, Project 2061, American Association for the Advancement of Science, will speak on:

“From Research Lab to Classroom: Can Cutting Edge Science Influence the Schools?”

Introduction by Dr. Charles Alcock, Director, Harvard-Smithsonian Center for Astrophysics (CfA)

For more than 20 years, Project 2061 of the American Association for the Advancement of Science (<http://www.project2061.org>) has focused its efforts on science literacy: establishing it as a goal for all citizens, defining what constitutes science literacy for high school graduates and progress toward it for K-12 students, and developing tools and materials that others can use to help all students achieve it. Their work has been informed by the structure of knowledge in scientific disciplines and by a growing body of research about how learners develop and apply science knowledge and what that implies for the organization of content and selection of instructional strategies and materials.

Project 2061's efforts have resulted in tools for clarifying the science knowledge and skills that all students need, and for promoting a standards-based approach to science curriculum, instruction, and assessment. The presentation will describe and illustrate Project 2061's standards-based approach, drawing examples from the topic “Matter and Energy Transformations” and highlighting the importance of these ideas for making

sense of everyday phenomena and confronting a range of societal problems, such as climate change.

Following Dr. Roseman's lecture, Dr. Philip Sadler and Dr. Matthew Schneps, Science Education Department, CfA, will moderate a discussion on ways to get cutting edge science research into the nation's schools with Dr. Avi Loeb, Theoretical Astrophysics Division, CfA; Dr. James Moran, Chair, Astronomy Dept, Harvard University; and Dr. Dimitar Sasselov, Director, Harvard Origins of Life Initiative.

The lecture will be web cast live, available at <http://www.cfa.harvard.edu/dvlwrap/live/live.ram> and then will be made available at <http://museumstudies.si.edu> for subsequent viewing.

The G. Brown Goode Smithsonian Education Lecture Series will then continue through 2007 with presentations on:

21st Century Skills in the Museum

The vast collections and resources of the Smithsonian Institution hold unparalleled content for education in 21st-century skills: how to access, analyze, interpret, and evaluate information and create new products based on this knowledge. In the world of education, these skills are sometimes termed *higher-order thinking*. In the world at large, they are increasingly termed *twenty-first-century skills*. Researchers from universities and museums will examine critical thinking, problem solving, collaboration, and other skills necessary for success in the 21st century and the roles that museums and informal learning environments can play in developing these skills in learners of all ages.

The first lecture in our 21st Century Skills series will take place Thursday, June 28, 2:00 – 4:00 p.m. in the Ring Auditorium of the Hirshhorn Museum and Sculpture Garden and will be delivered by Dr. Carolyn Maher, Professor of Learning and Teaching, Rutgers University, and Director, Robert B. Davis Institute for Learning. Dr. Maher will speak on:

“Fostering Critical Thinking in Schools and Museums”

All children are born capable of “critical thinking.” But, all too often a person's capacities for critical thinking are underutilized, especially in contexts intended to encourage learning. Dr. Maher will present results from a remarkable long-term study, now in its 20th year, that follows a cohort of children as they grow from first grade through college and beyond, to trace how their abilities for critical thinking grow and evolve. Looking at an example drawn from children's thinking in mathematics, her study demonstrates that when a child's capacities for critical thinking are honored, even modest opportunities for learning can make a lasting impact, build self-esteem, and provide tools children can take with them to achieve productive careers.

The presentation, which includes video, will be followed by a panel discussion that will explore the parallels between critical thinking in contexts important to museums, and Professor Maher's research in mathematics, to investigate how the ideas presented might be built upon or not in museum contexts, fostering critical thinking among its visitors.

Rebecca Shulman Herz, Senior Education Manager at the Solomon R. Guggenheim Museum and guest editor of the Summer 2007 issue of the *Journal of Museum Education* will serve as discussant following Professor Maher's talk. Ms. Herz will speak about the impact of museum-based school programs on critical thinking skills: Why museums are creating and investigating programs that aim to develop critical thinking skills and what recent research is telling us about the effectiveness of these programs in teaching critical thinking skills in museums.

The lecture will be web cast live and then made available for viewing after the program date at <http://museumstudies.si.edu>

George Brown Goode

George Brown Goode (1851-1896), ichthyologist and museum administrator, received his B.S. degree from Wesleyan University in 1870. After a year of postgraduate study with Louis Agassiz at Harvard University, Goode returned to Wesleyan to direct the Judd Museum of Natural History.

In 1872, Goode met Spencer F. Baird, Assistant Secretary of the Smithsonian Institution and United States Fish Commissioner. He quickly became Baird's chief pupil and assistant. In 1873, Goode was appointed Assistant Curator in the United States National Museum (USNM), a position he retained until 1877 when his title was changed to Curator. In 1881, when the new USNM building was completed, Goode was promoted to Assistant Director. On January 12, 1887, Goode was appointed Assistant Secretary in charge of the USNM, and he remained the chief administrative officer of the museum until his death.

Goode's primary scientific interest was ichthyology, and he published both specialized and popular works on fish and fisheries. In addition to his duties at the USNM, Goode also served in various capacities for the United States Commission of Fish and Fisheries. After Baird's death in 1887, Goode assumed the position of Fish Commissioner until January 1888.

Goode was regarded as the premier American museum administrator of his era. In 1881, he issued Circular No. 1 of the National Museum which set forth a comprehensive scheme of organization for the museum. Goode was involved in designing and installing Smithsonian and Fish Commission exhibits at many of the international expositions held during the latter half of the nineteenth century. Goode was also a historian, bibliographer, and genealogist, and he published several papers on the history of American science.

Selected quotes on the purpose and function of museums from G. Brown Goode:

“The people’s museum should be much more than a house full of specimens in glass cases. It should be a house full of ideas. . . .”

Museum History and Museums of History, p. 306

“The museum cultivates the powers of observation, and the casual visitor even makes discoveries for himself, and, under the guidance of the labels, forms his own impression. In the library one studies the impressions of others.”

Museum History and Museums of History, p. 310

“The museum of the future must stand side by side with the library and the laboratory, as a part of the teaching equipment of the college and university, and in the great cities cooperate with the public library as one of the principal agencies for the enlightenment of the people.”

Museums of the Future, p. 332

“The museum...is the most powerful and useful auxiliary of all systems of teaching by means of object lessons.”

Museums of the Future, p. 322

“The museum likewise must, in order to perform its proper functions, contribute to the advancement of learning through the increase as well as through the diffusion of knowledge.”

Museums of the Future, p. 337

Quotes taken from:

Goode, George Brown, *The Origins of Natural Science in America*, edited by Sally Gregory Kohlstedt, Washington: Smithsonian Institution Press, 1991.