WebWise 2011

Science, Technology, Engineering and Math (STEM) in Education, Learning, and Research

March 9-11, 2011
Renaissance Harborplace, Baltimore, MD

Pre-Conferences, March 9

Pre-conference #1 – *Sponsored by: The MacArthur Foundation*

9:00 am – 4:30 pm   Libraries and Museums Engaging Youth in STEM Learning

Moderators: **Mary Stansbury**, University of Denver Library and Information Science Program

Sarah Chicone, Johns Hopkins University Museum Studies Program

Whitney Stein, Chicago Public Library

Speaker: **Milton Chen**, George Lucas Foundation and Edutopia

Panelists: **Lydia Beall**, Museum of Science

Barry Fishman, University of Michigan

Susan Guevara, U.C. Berkeley, Lawrence Hall of Science

Elizabeth Lonsdorf, Lincoln Park Zoo

Ellen Middaugh, Mills College

Rob Ross, Paleontological Research Institution and its Museum of the Earth

Marsha Semmel, IMLS

President Obama has launched an "Educate to Innovate" campaign to improve the participation and performance of America's students in science, technology, engineering, and mathematics (STEM). This campaign includes not only efforts sponsored by the Federal Government but also those promoted by leading companies, foundations, non-profits, and science and engineering societies. Libraries and museums are leading partners in this national effort, making significant contributions to both formal education and informal learning in the STEM disciplines. A significant trend in library- and museum-sponsored informal learning, especially in STEM-related fields, has been the support of social constructivist activities where youth learn through group investigation and creation. This day-long pre-conference will explore some current research in this area and provide a few, key examples of projects that seek to build STEM knowledge through doing. Participants should expect to take part in their own active learning.

A boxed lunch will be provided for those participating in a full day of pre-conference activities.

Pre-conference #2

9:00 am – 12:30 pm   Thinking Like a Lawyer, While Opening Doors, Access, and Minds

Speakers: **Nancy Weiss**, IMLS

Sayeed Choudhury, JHU Digital Research and Curation Center

Melissa Levine, University of Michigan Library

Mary Minow, LibraryLaw.com

Hope O'Keeffe, Library of Congress

Arabella Yip, IMLS

As users engage with museum, library, and archive collections, they are creating new resources and materials themselves. This half-day pre-conference will address the types of legal issues that may arise when libraries, museums, and archives move beyond their traditional services and support on-line and on-site creativity and innovation. The speakers will discuss legal strategies in connection with user-generated content, social media, and online collections.

Pre-conference #3

1:00 pm – 4:30 pm   Helping Researchers Manage Their Data: Constructing Data Curation Profiles

Moderator: **Joyce Ray**, IMLS

Speaker: **D. Scott Brandt**, Associate Dean of Research, Purdue University Libraries, Distributed Data Curation Center

The needs of researchers and data producers are changing radically because of the disruptive effects of technology on research and its dissemination. In 2007, IMLS supported a research project conducted by Purdue University in partnership with the University of Illinois Urbana Champaign to investigate which researchers are willing to share data, when, with whom, and under what conditions, with a goal of developing data management services to those disciplines most open to sharing data for reuse. The team documented data/metadata workflows, developed a template for constructing profiles on data management needs and practices for a range of disciplines and a matrix to compare parameters across disciplines, and identified system requirements for managing data in a repository. In 2010, IMLS made a continuing education award to Purdue for a series of workshops to help libraries and other institutions involved in managing research data become more effective data curators. This half-day workshop will provide an overview of the project's research findings, recommendations and freely available tools.

6:30 pm – 8:30 pm   RECEPTION – Baltimore National Aquarium
                     Sponsored by: The MacArthur Foundation

CONFERENCE DAY ONE

March 10, 2011

8:00 am — Registration

9:00 am – 9:30 am — Welcome
Susan Hildreth, Director, IMLS

9:30 am – 10:15 am — Keynote Presentation
Dr. Joshua M. Greenberg, Program Director, Digital Information
Technology and Dissemination of Knowledge, Alfred P. Sloan Foundation

10:15 am – 11:00 am — Break and Project Demonstrations

California Academy of Sciences – San Francisco, CA
Connecting Content: A Collaboration to Link Field Notes to Specimens and Published Literature

Chicago Public Library and Digital Youth Network – Chicago, IL
YOUmedia: Creating a 21st-Century Library

Cornell University's Macaulay Library – Ithaca, NY
The NPR/NGS Radio Expeditions Sound Collection

Ernst Mayr Library of the Museum of Comparative Zoology, Harvard College – Cambridge, MA
Retooling Special Collections Digitization in the Age of Mass Scanning

Missouri Botanical Garden – St. Louis, MO
Digitizing Engelmann's Legacy

National Building Museum – Washington, DC
Information Technology and Online Services Initiative

University of California, Berkeley Lawrence Hall of Science – Berkeley, CA
Check Out Science!

11:00 am – 12:15 pm — *Session #1*: Perfecting STEM Partnerships: Libraries, Museums & Formal Education

Moderator: **Mary Stansbury**, University of Denver

Panelists: **Marcia Mardis**, Florida State University

Suzie Allard, University of Tennessee

Kwasi Asare, U.S. Department of Education

Museums and libraries have become key providers of opportunities to develop 21st century skills in collaboration with formal education partners. The STEM disciplines and professions need people who have a global perspective, self-directed learners, creative and comfortable with a wide array of rapidly changing information technologies. The IMLS has provided a number of opportunities and venues to develop community, university, and school partnerships to provide 21st century skills with a STEM focus. Several IMLS funded projects have created innovative and engaging spaces, content, and experiences for students at all levels to learn about STEM concepts and techniques. Preparing library and museum professionals to work in these environments will also be discussed.

12:15 pm – 1:30 pm   Lunch and Roundtable Discussions

1:30 pm – 2:45 pm   *Session #2*: STEM and the Participatory Web: Everyone's Invited!

Moderator: **Erika Shugart**, Koshland Science Center at the NAS

Panelists: **Seth Cooper**, University of Washington

Bridget Butler, Echo Lake Aquarium and Science Center

Jeff Grabill, Michigan State University *and* **Kirsten Ellenbogen,** Science Museum of Minnesota

Social media, Web 2.0, user-generated content -- it seems that every organization wants their users to participate on their web site. Unfortunately, these attempts are often nothing more than glorified marketing campaigns. In this session we will examine several projects that are generating meaningful audience participation and learn lessons from their attempts.

2:45 pm – 3:30 pm   Break and Project Demonstrations

Chicago Public Library and Digital Youth Network – Chicago, IL
YOUmedia: Creating a 21st-Century Library

Florida State University and the Tallahassee Museum – Tallahassee, FL
Habitat Tracker

The National Aquarium – Baltimore, MD
"Wings in the Water" Exhibit Interactive Stations

University of Arizona, School of Information Resources and Library Science – Tucson, AZ
Improving Student Learning of Advanced Digital Technologies in an Online Laboratory: A Research Approach

University of California, Lawrence Berkeley National Laboratory – Berkeley, CA (Year: 2009)
Advancing Optical Scanning of Mechanical Sound Carriers: Connecting to Collections and Collaboration

University of North Carolina at Chapel Hill, School of Information and Library Science – Chapel Hill, NC
Helping Interdisciplinary Vocabulary Engineering (HIVE)

Walters Art Museum – Baltimore, MD
Integrating the Arts: China

3:30 pm – 4:45 pm   ***Session #3***: Tapping Into Science: Promoting Collections for Use in Teaching, Learning and Research

Moderator: **Ken Wiggin**, Connecticut State Library

Panelists: **Kaye Howe**, National Science Digital Library

             Kenning Arlitsch, University of Utah

             Rebecca Morin, California Academy of Sciences

Libraries and museums play an important role in supporting teaching, learning and research in the area of STEM. This panel will discuss how museums and libraries can create digital collections to provide greater access to their primary and secondary source collections.

4:45 pm   Adjourn for the day

CONFERENCE DAY TWO

Friday, March 11, 2011

8:45 am – 9:30 am   Keynote Presentation
Dr. Francine Berman, Vice President for Research and Professor of Computer Science, Rensselaer Polytechnic Institute

9:30 am – 9:45 am   Break

9:45 – 11:00 am   *Session #4*: STEM, Arts and Humanities: Intersections and Inspiration

Moderator: **Tom Scheinfeldt**, Center for History and New Media, George Mason University

Panelists: **Chris Wildrick**, Syracuse University School of Art & Design

Fred Gibbs, Center for History and New Media, George Mason University

Michael Benson, Kinetikon Pictures

Thirty years of science and technology studies have exposed the STEM disciplines not as disembodied fonts on knowledge, but as deeply social and cultural processes. Just as society at large is influenced by the insights and inventions of scientists and engineers, those insights and inventions are shaped by the influence of culture. In recent years, museum and library professionals and scientists alike have come to embrace the complex symbiotic relationship between science and culture to the benefit of both groups' work. This panel will highlight examples of crossover projects that have brought librarians, museum professionals, humanists, artists, scientists, and engineers together to explore the productive tensions between science, technology, society, and culture.

11:00 am – 12:15 pm *Session #5*: Reuse and Recycle: Tools and Services for Managing, Preserving, and Presenting Data for Sharing

Moderator: **Greg Colati**, University of Denver

Panelists: **Sayeed Choudhury**, JHU Digital Research and Curation Center

Leah Melber, Lincoln Park Zoo

Aaron Presnall, Jefferson Institute

Data of all types and in all disciplines is being created in large and small collections and projects. This data needs stewardship, management, and curation over time so that these resources can be used to verify original conclusions and support new research and knowledge creation. Increasingly, data from multiple institutions and disciplines is being combined and visualized in ways never intended by the original creators. This session looks at how we can create environments that support data management, curation, and reuse so that resources can be maintained, exchanged, and made useful in a variety of ways.

12:15 pm   Farewell and adjourn