

Featured Topic Sessions 2 - Summaries

Tuesday, February 12, 2013

11:00 a.m. – 12:15 p.m.

Room:
Congressional A

Implementation and Diffusion of Innovation

Chris Dede, Timothy E. Wirth Professor in Learning Technologies, Harvard's Graduate School of Education

Jim Dearing, Senior Scientist, Kaiser Permanente, and Co-Director, Center for Health Education Dissemination & Implementation Research

Summary: Jim Dearing and Chris Dede present two frameworks for designing MSP models so that they achieve widespread use and impact. Jim Dearing shares eight fundamental components for knowledge diffusion; this framework has been widely adopted by the health care industry. Chris Dede discusses five dimensions for scaling up an innovation; this framework has been successfully applied in numerous settings. These dimensions and components can be applied to the Math Science Partnerships models as ways to increase the number of educators who implement these models and take them to scale. The session will present each of these frameworks and will be followed by interaction with attendees.

Room:
Congressional B

The Common Core: Implications for Mathematical Practice

Henry S. Kepner, Jr., Professor Emeritus, University of Wisconsin-Milwaukee

DeAnn Huinker, Professor, University of Wisconsin-Milwaukee

Al Cuoco, Distinguished Scholar/Advisor, Education Development Center

Summary: The session examines challenges, interpretations, and substantive recommendations to engage students in the Standards for Mathematical Practice. Presenters will present a focus on supporting teachers to bring the "practice of mathematics" into their K-12 teaching of mathematics. Building on the early work leading to the NCTM Standards and decades of work on clarifying habits of mind, we will examine share professional development examples from our work with teachers. Recommendations will be discussed for keeping the Standards for Mathematical Practice at the forefront of Common Core implementation and assessment.

Room:
Mount Vernon A

Dimensions of Teacher Leadership

Jodie Novak, Professor of Mathematics, University of Northern Colorado

Steve Ruthford, Einstein Fellow, NSF

Selena Strickland, Lincoln Middle School in San Angelo, TX

Felicia Martin, Prince George's County Public School

Summary: STEM teacher leadership takes many forms in many contexts. This session is organized around exploring those forms and contexts. We begin by introducing several definitions of teacher leadership to ground our discussion in common language and that illustrate the complexity of teacher leadership. Next, we identify four dimensions of teacher leadership: length of time as a teacher leader, amount of professional time committed to teacher leadership, level of formality of leadership, and the size of the audience. The majority of the session will be spent with the attendees learning from each in small groups through facilitated discussions of the unique challenges and successes associated with various combinations of these dimensions. We will conclude the session by analyzing the usefulness of characterizing STEM teacher leadership by these dimensions with questions like: Are there missing dimensions? Are these dimensions useful in analyzing types of teacher leadership? What are some good exemplars for various combinations of these dimensions? How might you use these in your work?

Room:
Mount Vernon B

Institutional Change and the Culture of Higher Education

Nancy Shapiro, Associate Vice Chancellor and Special Assistant to the Chancellor for P-20 Education, University System of Maryland
Jacqueline Huntoon, Dean of Graduate School, Professor of Geology, Michigan Technological University

Summary: A major goal of the Math Science Partnership program is the accomplishment of “institutional change” at core partner universities and schools. Institutional change requires transformation of the culture of an organization that is ideally supported by formal articulation of shared values and an aligned reward system. The culture of higher education is notoriously resistant to change, making it necessary to work toward goals in a systematic way over significant period of time. In this session the moderators will guide a discussion among participants regarding specific goals that should be pursued in order to ensure that universities become more supportive of and involved with pre-college education in the future. We will also explore actions that can be taken to begin to make progress toward those goals and share information about strategies that have been effective.

Room: 12/13/14

Data Management: Do It Right From the Outset, or Do It Again and Again

Wendy Smith, University of Nebraska-Lincoln,
John Sutton and Brandie Good, RMC Research Corporation

Summary: Mathematics and Science Partnership (MSP) and Research and Evaluation Technical Assistance (RETA) projects generate large amounts of data from multiple sources to enable the research and evaluation agendas to respond to questions and provide evidence. NSF proposals require a data management plan; it is very important to think through the data sources, collection, and analysis needs well in advance of collecting data, so that data management can be implemented from the outset, to minimize the number of changes that take place over time, ensuring the analyses are conducted on the correct data sets at the right times to provide solid evidence. We will share data management plan models, challenges, and solutions, to help "get it right from the outset."

Room: 8/9

Defining Standards for Professional Development for K-12 Teachers of Engineering

Cheryl Farmer, University of Texas at Austin, *Louis Nadelson*, Boise State University

Summary: The increasingly common integration of engineering into curricula and standards, including its anticipated role in the emerging Next Generation Science Standards, suggests that soon all elementary teachers and all secondary science teachers will be expected to teach engineering practices. With this increased emphasis on engineering comes the need to prepare and support a wide range of teachers, prompting the question: How do we ensure teachers are prepared to teach engineering and what should such preparation efforts look like? In this interactive session, participants will bring a variety of perspectives to bear on assessing the effectiveness of an emerging framework for engineering teacher development, the *Standards for Preparation and Professional Development for Teachers of Engineering*.