Network Connections: Focus on Engineering

WINTER: February 7, 2013
LOCATION: Carnegie Science Center

7:30 AM to 8:00 AM Carnegie Science Center Lobby
8:00 AM to 9:00 AM OPENING KEYNOTE: “A Local Success Story of Engineering”

In previous years, video clips of the Carnegie Science Award winners have been featured to share the innovation occurring in SW PA. With the special focus on Engineering of this conference, come meet a winner in person. Henry Thorne, 2012 winner of the Carnegie Science Center Award for Entrepreneurs, will describe how his K-12 education enabled him to create award-winning innovation.

MORNING BREAKOUT SESSION: 9:15 AM to 12:00 Noon

A. Reducing Non-Point Source Pollution in Local Waterways (Part 2) 6-12 Science
This session provided by ALCOSAN continues to explore practical, hands-on classroom activities to introduce students to LID (Low Impact Development) techniques and connect concepts related to the academic standards for environment and ecology, science and technology and engineering education, and mathematics. Participants must have attended Part 1 at the October Network Connections. Participants will receive a lunch voucher at this session. See page 34.

B. Engineering Processes – Elementary K-6 Math & Science
Begin early to put the E back in STEM. Join ASSET and MSC facilitators for an interactive session exploring the connections at the elementary level between the engineering design process and the practices of the Mathematics Common Core and the emerging Next Generation Science Standards. See page 8.

C. Engineering Processes - Secondary 6-12 Math & Science
Put the E back in STEM with increasing depth. Join ASSET and MSC facilitators for an interactive session exploring the connections at the secondary level between the engineering design process and the practices of the Mathematics Common Core and the emerging Next Generation Science Standards. See page 8 for a related article.

D. Job Shadowing Panel K-12 Math & Science
What role do the Common Core Practices and NGSS play in preparing students for careers? How does seeing them in action in the workplace help educators provide students with effective learning experiences? K-12 educators, who are participating in a pilot program that takes them into three local corporations, will share their findings.

E. PDE Approach to Engineering Math & Science
How is Engineering approached by PDE? David Bauman, PDE Science Advisor, will share PDE’s approach to this key component of STEM.

F. How Can Administrators Recognize Effective Instruction in Science K-12 Science
What does effective teaching look like in the science classroom? When science content standards are effectively integrated with Science and Engineering Process standards, a student mind-engaging science environment is created. Student interest in and acquisition of science concepts dominate! See page 19.

G. Using High Level Tasks Effectively in Science K-12 Science
Engaging in the engineering design process requires the use of high level tasks. Through an active hands-on process, participants will investigate the characteristics that are essential for standards-based, challenging science tasks.

H. Using High Level Tasks Effectively in Math K-12 Mathematics
Engaging in the engineering design process requires the use of high level tasks. Through active engagement in the math, participants will investigate the characteristics that are essential for standards-based, challenging math tasks.
LUNCH & RESOURCE FAIR
12:00 Noon – 1:00 PM

Enjoy lunch on your own in CSC Café. Avoid lines by exploring the Resource Fair.

AFTERNOON KEYNOTE
1:00 pm – 2:00 PM

“How to Implement Common Core Opportunities to Strengthen Teaching and Learning”

Steve Leinwand

Steve Leinwand is a Principal Research Analyst at the American Institutes for Research (AIR) in Washington, D.C. and has over 30 years of leadership positions in mathematics education. His work at AIR has included technical assistance to the General Electric Foundation and to the Microsoft Math Partnership, involving work in Seattle, Louisville, Cincinnati, and Milwaukee. He has overseen the development of the Algebra Assessment for the ongoing High School Longitudinal Study and co-authored “What the United States Can Learn from Singapore’s World-Class Mathematics System (and what Singapore can learn from the United States).”

Before joining AIR in 2002, Leinwand spent 22 years as Mathematics Consultant with the Connecticut Department of Education where he was responsible for the development and oversight of statewide activities in K-12 mathematics education. Steve has served on the Mathematical Sciences Education Board during the development and publication of “Everybody Counts”, as president of the National Council of Supervisors of Mathematics, and on the NCTM Board of Directors where he helped to review NCTM’s “Principles and Standards for School Mathematics.”

RESOURCE FAIR
2:00 – 2:30 PM

Enjoy another chance to engage with the 15+ Resource Partners in the lobby of CSC.

INTERACT TIME
2:00 PM – 3:30 PM

Invitation to Effectively Reflect and Collaborate Time
This time is set aside for participants to share experiences and plan with district colleagues to strengthen math and science education in their districts. The team will collaboratively develop an action plan to disseminate relevant Network Connections information and experiences.