LOCAL SCHOOLS EMBARK ON CARNEGIE STEM EXCELLENCE PATHWAY

PROCESS FOR ASSESSING AND CONTINUOUSLY IMPROVING STEM EDUCATION

PITTSBURGH, Oct. 9, 2014 — Teachers and administrators representing 13 school districts across the region met on Tuesday, Oct. 7, at Carnegie Science Center to embark on the Carnegie STEM Excellence Pathway to begin the process of improving their education practices in science, technology, engineering, and math (STEM). During the daylong session, they used the Pathway’s rubric to assess their own school’s, or district’s, current performance in six areas: teacher qualifications, curriculum, instructional practices, assessment and demonstration of skills, family engagement, and real-world connections.

Within each area are specific criteria – a total of 20 in the full rubric -- and descriptions of levels of performance. The criteria reflect Carnegie Science Center’s definition of quality STEM education: inquiry-based and project-based learning, involving teamwork and incorporating career awareness.

For example, one criterion under the real-world connections area is Career Awareness; in the rubric, the levels and descriptions are as follows:

- **Pre-Emerging**: There is no current action in this area.
- **Emerging**: Students are exposed to STEM speakers and may complete research to increase their awareness of a wide variety of STEM fields.
- **Progressing**: Students have access to STEM field trips or group visits to STEM workplaces with a chance to interview workers on their job responsibilities, training, and career path.
- **Advancing**: Students have multiple opportunities for individual internships or job shadowing in STEM-related fields and are supported in connecting the experience to STEM coursework.
- **Leading**: STEM coursework meets all previous criteria and consistently engages students in researching and preparing for long-term regional workforce opportunities. Special opportunities are available for girls and other groups underrepresented in STEM fields.

After self-assessment on each criterion, participants selected up to three areas to prioritize and then worked on a timeline and an action plan to address those goals.
Through periodic reassessment and repetition of this process, schools and districts can progress to higher levels of STEM education excellence. This cycle is beneficial to all regardless of their current STEM offerings.

“The Pathway fosters thinking about long-term, strategic goals with a focus on continuous growth,” explains Alana Kulesa, the Science Center’s director of Strategic Education Programs, who spearheads the development and implementation of the Pathway. “It helps identify the tenets of quality STEM education and then implement them. The Pathway is non-punitive. Instead, it’s envisioned as a long-term, goal-oriented, encouraging approach.”


“Our team was very productive and really had some great conversations that will lead to future meetings around the Pathway,” said Michael Ghilani, principal of Upper St. Clair High School.

“I’m very excited to work with Carnegie Science Center to improve our STEM programs,” said Andrew Haberberger, a teacher at Mt. Lebanon High School.

The Carnegie STEM Excellence Pathway has already attracted attention from outside the region. Kulesa has conducted a Pathway workshop in Kansas City, Mo., with the Kansas City STEM Alliance: 141 school personnel from 23 public school districts, 2 urban charter schools, and 1 urban private school. These educators represented a total of 461 schools including elementary, middle, and high school levels, with a total student enrollment of 247,485. Schools from Missouri and Kansas were represented, as well as urban, suburban, and rural districts. Kulesa also is conducting workshops for individual school districts in the region, including Shaler Area.

The Carnegie STEM Excellence Pathway is available online -- therefore accessible internationally -- through STEMisphere, an online directory created by Carnegie Science Center as a community service to provide a portal to educational STEM resources for students in pre-K through 12th grade, their families, and their teachers. To access the Pathway on STEMisphere, visit http://stemisphere.org/educators

In creating the STEM Excellence Pathway model, Carnegie Science Center staff worked with an esteemed Advisory of regional education experts and STEM supporters including: Allegheny Conference on Community Development; Arts Education Collaborative; ASSET STEM Education; Blackhawk School District; California University of Pennsylvania; Community College of Allegheny County; Duquesne University; Hampton Township School District; Intermediate Unit 1; Open Minds; South Fayette School District; the Environmental Charter School; Kiski Area Upper Elementary School; Mt. Lebanon School District; North Hills School District; Propel Charter School; South Fayette School District; Upper St. Clair School District; Yough School District, and Pittsburgh Schiller Middle School.
District; University of Pittsburgh; and Upper St. Clair School District. Funding was provided by The Heinz Endowments.

**About Carnegie Science Center**

Carnegie Science Center is dedicated to inspiring learning and curiosity by connecting science and technology with everyday life. By making science both relevant and fun, the Science Center's goal is to increase science literacy in the region and motivate young people to seek careers in science and technology. One of the four Carnegie Museums of Pittsburgh, the Science Center is Pittsburgh’s premier science exploration destination, reaching more than 700,000 people annually through its hands-on exhibits, camps, classes, and off-site education programs.

**About Carnegie Museums of Pittsburgh**

Founded by Andrew Carnegie in 1895, Carnegie Museums of Pittsburgh is a collection of four distinctive museums dedicated to exploration through art and science: Carnegie Museum of Art, Carnegie Museum of Natural History, Carnegie Science Center, and The Andy Warhol Museum. Annually, the museums reach more than 1.2 million people through exhibitions, educational programs, outreach activities, and special events.

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