The Gateway Academy â€“ Innovative Education

Society of Manufacturing Engineers

The SME Education Foundation celebrates its 30th Anniversary with the expansion of its Gateway Academy in a partnership with Project Lead The Way.

DEARBORN, Mich., May 17, 2010 — The SME Education Foundation [1] and industry partner, Project Lead The Way (PLTW) [2] know that if you want to capture the attention of multi-tasking 6th – 8th grade students, your chances of reaching them are increased by offering a program such as their technology-based Gateway Academy. Its innovative and technically challenging curriculum has been designed to offer more than what this audience is currently experiencing.

These future global manufacturing leaders, boys and girls between the ages of 11 and 14, are conversant with the Internet, MP3's, Napsters and ITunes, cell phones, PlayStation high resolution 3-D video games and channel surfing. The Gateway Academy [3] program is geared to appeal to them with its hands-on, project-based courses where students have fun while applying the fundamentals STEM – science, technology, engineering and math, and learn to study and play hard to win while learning engineering concepts.

This year, as the SME Education Foundation celebrates its 30th Anniversary [4], the need for more industry responsive curriculum, initiated in 1997 under its then president, Eugene (Gene) Nelson, has evolved to include an aggressive expansion of the Gateway Academy.

Says Nelson, "In 1998, we began to meet the needs of industry by funding industry responsive curriculum. Today, we are continuing to build on that premise with the expansion of youth programs by funding technology-based curriculum and accelerating our efforts to reach these young people and their parents. It has become critically imperative they understand how seriously compromised they will be without a technology-based education."

The Gateway Academy accelerated learning program is taught by certified PLTW instructors to small groups of 20 students. They are able to work together in a fun, exciting environment using leading-edge technologies introducing them to disciplines including robotics, aeronautics and rocketry, eco-design, manufacturing and alternative energy. By late June, parents will have enrolled nearly 4,200 students for 214 sessions at 187 sites in 34 states across the country.

The structured curriculum, an "educational smorgasbord," provides teachers with specific materials. Included are activities such as ice breakers and team-building exercises which encourage students to get to know one another and practice leadership skills, a menu of individual and team projects to be completed during the camp; and problem-solving events designed to challenge the students by

developing their creative and problem-solving skills. Students are also introduced to a design process requiring them to derive a solution which then becomes a prototype for testing and evaluation at the end of the program.

The SME Education Foundation launched its youth program initiative in 1997 with $1.3 million in funding for Science, Technology, Engineering Preview Summer (STEPS) camps. In a partnership with Project Lead The Way, the program has evolved and expanded as the Gateway Academy. The re-written PLTW curriculum provides a systemic pathway for students and encourages their interest in pursuing PLTW engineering courses. These science, technology, engineering and math (STEM) courses begin in middle school and continue through senior year of high school.

The demand for jobs is great but with few workers skilled enough to be hired. Major companies have stepped up production and plans for expansion. In Michigan, General Electric [5] expanded its commitment of 1,100 new jobs over the next five years. According a news release issued May 4, GE Aviation is making a significant investment in aerospace technology in Michigan supporting the development of advanced jet engines and avionics systems. The information technologists and engineers to be hired will help GE develop innovative new software, processes and technologies to drive excellence in manufacturing for GE [6] and its customers. The workers at this facility will help bring innovation from the research lab to the manufacturing floor, and that helps keep manufacturing competitive.

The goal of the Gateway Academy is making sure that when describing their skills to potential employers to companies such as GE, Gateway students will be able to use descriptors such as adapted, assembled, built, conserved, debugged, designed, developed, engineered, fabricated, programmed, restored, standardized or utilized – and this is the short list.

As an example, if one of these computer literate young people aspires to a job in the field of computer engineering, they have to be prepared for a 10th grade curriculum that examines computer hardware and the control of external components from an engineering perspective. They have to know how to solve problems, and study the functions of key computer components, peripherals, logic gates, fundamental programming concepts, internal numbering and character representation systems, and operating systems and networks. It's time to get serious about a technical education and the SME Education Foundation and Project Lead The Way think the Gateway Academy is a good way to begin.

Project Lead The Way (PLTW), a national 5013c, not-for-profit educational program, prepares middle and high school students to be the most innovative and productive leaders in science, technology, engineering and mathematics (STEM). Through an engaging, hands-on curriculum, PLTW encourages the development of problem-solving skills, critical thinking, creative and innovative reasoning, and a love of learning. Visit www.pltw.org [7].

The SME Education Foundation is committed to inspiring, supporting and preparing the next generation of manufacturing engineers and technologists in the

advancement of manufacturing education. Created by the Society of Manufacturing Engineers in 1979, the SME Education Foundation has provided more than $29 million since 1980 in grants, scholarships and awards through its partnerships with corporations, organizations, foundations, and individual donors. Visit the SME Education Foundation at www.smeef.org [1]; www.CareerMe.org [8], and award-winning Web site, www.manufacturingiscool.com [9]

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