MEDIA ALERT

A live, web-based press briefing will be held at 10 am CST 2/23/09. Please contact Jim Janisse at janisse@fvtc.edu to arrange an audio connection and log on to http://breeze.fvtc.edu/mdfp/ for access to the event. No registration is necessary.

Midwest Colleges gain federal grant

to integrate FAB LABS into teaching programs

A consortium of three Midwest colleges will develop educational programs in conjunction with their digital fabrication laboratories (FAB LAB) thanks to a collaborative grant from the National Science Foundation.

The $670,000 grant is aimed at integrating digital fabrication technology into science/technical education programs. The federal grant allows FAB LAB professionals at Fox Valley Technical College, Appleton; the University of Wisconsin—Stout; and Century Community and Technical College, White Bear Lake, Minnesota to expand existing FAB LABs and enhance programming. A major goal of the project is to research and enhance STEM abilities (science, technology, engineering, math) in undergraduate and high school students throughout the districts served by the colleges.

This is the first time Midwest FAB LABs have received a collaborative grant of this nature in the US. It is also the first time a grant of this size has been awarded from the National Science Foundation directed at implementing FAB LAB programming according to the model established by Massachusetts Institute of Technology (MIT). The group has formed a Midwest Digital Fabrication Partnership (MDFP) which will integrate Digital Fabrication capabilities based at the MIT Center for Bits and Atoms into student learning experiences at undergraduate levels of higher education. Experts in Mechanical Design, Applied Engineering Technology,

Manufacturing Technologies, Information Technology, and Electrical-Electronics have identified selected courses in their respective programs to integrate into hands-on learning activities in FAB LABs.

The FAB LAB is a unique innovation that provides inventors and students the tools and techniques to rapidly translate an idea to reality. FAB LABs provide off-the-shelf industrial-grade fabrication and electronics tools with open source software to create a product prototype or personal product fabrication. The FAB LAB concept was created by MIT and links users in America with FAB LAB inventors and students world-wide via web video access to Norway, South Africa, India, Barcelona and other locations.

“Every one of our institutions exists in a global market,” said Dr. Susan May, president of Fox Valley Technical College. “This grant will allow us to find more creative ways to ignite technical curiosity in students by directly linking math and science classes to hands-on outcomes in product fabrication.”

The teams will use the grant money to expand FAB LAB capabilities and create programming that encourages students to explore careers in technical fields and increase competency in technical skills. The teams will create a methodology to study student’s experience in the FAB LABS and document applied learning, attitudes and outcomes. Research from this trial period will be applied to future curriculum and integrate FAB LABS into classroom experiences. “We want to find those ‘STEM moments of truth’ where students disengage from math and science experience and find out how our FAB LABs can help rekindle interest,” said Jim Janisse FVTC FAB LAB Development Manager.

“According to our initial research, digital fabrication laboratories are effective in engaging students because they can see product ideas come to life when they create product prototypes,” said Scott Simonsen, Century College.

According to the Government Accountability Office, while college enrollment is growing, the number of students graduating with STEM degrees is declining. At UW-Stout, the Science Technology and Engineering Preview for Girls program has been in operation for more than a decade. Today, a girl participating in the program is nine times more likely to become an engineer or technologist than her peers. “This grant will allow us to develop similar opportunities available to K-12 students while integrating FAB LABs into the programming,” said Randy Hulke, director of the Stout Technology Transfer Institute at UW-Stout.

“Many students have negative experiences through their learning years,” Janisse said. “It could be an individual teacher or the way a course is taught, so we want to find out what

those triggers are and provide students and educators with options in applied technology through the FAB LAB experience."

The three colleges have been working with the MIT FAB LAB to create effective educational programming models for three years. In that time, the FVTC FAB LAB has developed a program that integrates proof of concept prototyping with the entrepreneur training center at the college, the Venture Center. FVTC is the first FAB LAB in the world to fully integrate an entrepreneurial focus into its model. Organizers from MIT are reviewing the FVTC model in hopes of integrating it into other FAB LABs world wide.

"Our activity tracking with entrepreneurs and inventors to date is giving us a glimpse of the long-term impact we're having on economic development and the potential impact for future students," said Jerry Eyler, Dean of Manufacturing at FVTC.

The grant will be administered over three years. For more information, please visit www.venturecenterwi.net/fvtc-fab-lab/ , www.uwstout.edu, www.century.edu, and www.mfln.org. For more information on the MIT FAB LAB concept, please visit http://fab.cba.mit.edu.

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