Center for Nanotechnology Education and Utilization Bulletin – September & October 2005

The Pennsylvania State Center for Nanotechnology Education and Utilization (CNEU) is the home of the Pennsylvania Nanofabrication Manufacturing Technology (NMT) Partnership, and the NSF Advanced Technology Education (ATE) Center for Nanofabrication Manufacturing Education. It is also the Penn State home of the NSF National Nanotechnology Infrastructure Network (NNIN), the national NSF nanotechnology resource for enabling academic and industry R&D.

The CNEU Mission:

The CNEU is dedicated to research, development, and education across all aspects of micro- and nanotechnology. The Center resources are focused on addressing the incorporation of nanotechnology into secondary education, into post-secondary education, and into industry applications.

CNEU – Highlights of Upcoming Activities:

Nanotechnology in the Secondary Classroom Workshop: The Nanotechnology in the Secondary Classroom Workshop is a new offering, which will be held November 14-16, 2005 at the CNEU facilities. The intended audience for this workshop is Pennsylvania secondary science educators. Workshop participants will be introduced to nanotechnology concepts and explore how selected topics can be introduced into the secondary classroom while still using current curriculum. Please contact Ms. Tina Crosson at 814-863-2955 or tcrosson@engr.psu.edu to register, or for further information.

Nanotechnology Education Modules - DVD Distribution: A Nanotechnology Education Module DVD is in the final production stages and will be distributed in early November throughout the NMT Partnership. The DVD is intended to be used by NMT Partner institutions for introductory and orientation course work. The DVD presently contains 4 modules which focus on what nanotechnology is, the impact it has on today's world of industrial products and services, how nanotechnology influences multiple scientific disciplines, how current advancements in nanotechnology will be influencing our lives in the future, and highlights career and educational opportunities available through the NMT Partnership. For more information, please contact Ms. Phi-Oanh Pham at 814-865-6962 or popham@engr.psu.edu.

CNEU Website Updates: Coming soon - Video testimonials of NMT capstone semester graduates, web-based CNEU Bulletin, streaming video of Nanotechnology Education Module highlights, NMT partner educational pathways guide, NanoPACE animation.

CNEU Program Highlights for September & October 2005

NMT Partnership Career Fair: An NMT Partnership Career Fair was held on September 22, 2005. Representatives from Nanohorizons, Plextronics, RJ Lee Group, Seagate, and Veco were featured at this fair. Each company presented an overview of their organization, its’ mission, and how it is tied to nanotechnology to an audience of 43 prospective, current, and former NMT students. A large number of resumes were submitted to the represented companies for employment consideration and substantial time was allotted for student and company representative networking. As part of the day, an Industry Panel Q&A Roundtable Discussion Session was held. Career Fair attendees had the chance to ask the industry representatives about their views of how nanotechnology is influencing their company and how trained nanotechnologists fit into their organizations. This session was filmed and is presently being edited to become part of the Nanotechnology Training DVD.

Hands-On Nanofabrication Workshop for Educators: This three-day workshop was held October 5-7 with nineteen educators in attendance. The participants learned about the growing applications of nanotechnology in many industries including the biotechnology, MEMs, optoelectronics, chemical and electronics industries. The basics of nanofabrication processes and tools were covered and practiced through a combination of classroom lectures and hands-on processing labs in the class 10 clean rooms of the Penn State Nanofabrication Facility. The next workshop in this continuing series will be held Spring 2006.

Advanced Technological Education (ATE) Conference: The ATE 2005 Conference was held in Washington, D.C., October 5-7, 2005. The Center exhibited at this event and Paul Hallacher was one of the presenters at an ATE Roundtable Session. The topic was "Developing Nanofabrication Technician Education Programs."

NSF K-12 & Informal Nanoscale Science and Engineering Education Workshop: Center personnel attended this workshop held in Arlington, Virginia October 19-20, 2005. NSF sponsored nanoscale education entities from across the country were invited to attend this workshop. The purpose of the workshop was to benchmark best practices, share knowledge, and identify collaboration opportunities.

Nano App Summit in Cleveland: The Nano App Summit was held in Cleveland, Ohio on October 17-19, 2005. Bill Mahoney presented 3 sessions of “nanofabrication techniques” at the Summit to 50 people from industry and education as part of the Summit’s “Nanotechnology University.”

CNEU Educational Cleanroom Update: The CNEU Educational Cleanroom construction has officially begun. This “work in progress” room has been populated with education size nanofabrication and nanocharacterization tools, and is being utilized for the capstone student laboratories, workshops, outreach opportunities, and remote tool access. The modular cleanroom enclosure is in the procurement stage. The new cleanroom is located in the MRI Building and is targeted to be fully operational during the first quarter of 2006.

Pennsylvania NMT Partnership PSA Update: The 30 second television PSA featuring Governor Ed Rendell’s endorsement of the Pennsylvania NMT Partnership education programs was distributed to 60 television stations across the state. It is presently being aired regularly on 6 of these stations. The Partnership has also produced 30 and 60 second radio PSAs which were distributed in October to 210 radio stations across the state.

CNEU Outreach: In addition to the activities above during this bulletin period, the center also received 60 visitors representing 6 organizations.

For Further Information on these Highlights or on the NMT Partnership in general, please contact:

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