Center for Nanotechnology Education and Utilization Monthly Bulletin – July 2004

**The CNEU Mission:**

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

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 K-12 education, into post-secondary education, and into industry applications.

**CNEU – Highlights of Upcoming Activities:**

**NNIN Research Experience for Undergraduates (REU) Program Convocation:** The NSF REU program for the entire nation-wide NNIN will hold its Convocation August 11-14 at Penn State. This Convocation program will culminate the summer research work of 72 select undergraduate students from the 13 partner NNIN institutions across the country.

**Nanotechnology Learning Tools Development Workshop for Educators:** A three-day workshop will be held August 25-27 at the CNEU facilities in University Park. This will be a “working” event where secondary level kits (learning tools) will be piloted and will be further developed by high school educators. The Pennsylvania Academic Standards for Science and Technology will be a guiding resource for workshop participants to complete these learning tool packages. These learning tools will then be offered to science teachers statewide to enhance, update, and reinforce their teaching of fundamental secondary science curricula. Interest in this event was excellent and participants who were selected to attend this workshop have been notified.

**Summer / Fall 2004 NMT Class:** The summer 2004 NMT session is now complete. 32 students successfully completed the semester. Congratulations to this crew for a job well done! The Fall 2004 semester will begin on August 31, with enrollment currently at 20 students.

**2004 Annual Fall NMT Conference:** The Annual Fall NMT Conference will be held October 7-8, 2004 at the Penn Stater Conference Center. The theme of the conference is Career and Educational Pathways. Industry perspectives, academic pathway models, and NMT alumni work and educational experiences will be highlighted. This promises to be a very valuable venue for industry representatives and prospective students to come together and to learn about the opportunities that the NMT program provides. For further information on this event, please contact Ms. Lisa Daub at 814-865-9635 or ldaub@engr.psu.edu.

**Nanofabrication Workshop for Educators:** Registration is now beginning for this November 10-12 three day workshop. Participants will learn about the growing applications of nanofabrication in many industries including the biotechnology, MEMs, optoelectronics, chemical and electronics industries. The fundamentals of nanofabrication processes and tools will be covered and practiced through hands-on processing labs in the class 10 clean rooms of the Penn State Nanofabrication Facility. For further information on the workshop please contact Bob Ehrmann at rke2@engr.psu.edu. To register for the workshop please contact Ms. Lisa Daub at 814-865-9635 or ldaub@engr.psu.edu.

**CNEU Program Highlights for June and July 2004**

**NSF National Center for Manufacturing Education in Nanofabrication Planning Meeting:** In 2003, the CNEU was awarded a planning grant by the NSF to study the feasibility of a National ATE Center on Micro- and Nanomanufacturing Education, focused on associate degree level technical education. To ensure participation in the planning process by private industry, community and technical colleges, universities, and other interested organizations and individuals, a series of fly-in meetings were held. All community and technical colleges, universities, private companies and others with interest were encouraged to attend a fly-in meeting. Three very successful fly-in meetings were held: Chicago, Illinois - April 13; Los Angeles, California - June 8; and Orlando, Florida – June 29. Representatives from 61 colleges/universities representing 23 states attended these meetings, in addition to several industry representatives. The majority of the attendees at these meetings expressed an interest in being included in ongoing efforts. Dissemination of the data attained at these meetings is presently ongoing and the final results will be published in September.

**Nanotech Camps:** Ten highly successful Nanotech Camps were held in June and July serving more than 150 high school students from across Pennsylvania. The last Nanotech camp of the year was an advanced camp experience (for second year participants) which incorporated some pilot high school learning modules. All of the camps were well received by the student participants and chaperone crews. Many thanks to those who volunteered their time to make these camps worthwhile for our youth. Special thanks are due to Andrew Greenberg of the Center for Nanoscale Science Penn State MRSEC who lent his time and the Materials Matter presentation to further enhance the camp experience. Planning for next year’s camps is underway. More details will follow in future newsletters and announcements.

**NMT Partnership Outreach Tours:** Since the release of the previous newsletter, the center has received visits by 116 people from 9 organizations (5 high schools, 2 community colleges, 1 university, and 1 professional organization).

**For Further Information on these Highlights or the NMT Partnership, contact:**

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