



REPORT TO THE PRESIDENT AND CONGRESS ON THE FOURTH ASSESSMENT OF THE NATIONAL NANOTECHNOLOGY INITIATIVE

Executive Office of the President
President's Council of Advisors on
Science and Technology

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About the President's Council of Advisors on Science and Technology

The President's Council of Advisors on Science and Technology (PCAST) is an advisory group of the nation's leading scientists and engineers, appointed by the President to augment the science and technology advice available to him from inside the White House and from cabinet departments and other Federal agencies. PCAST is consulted about and often makes policy recommendations concerning the full range of issues where understandings from the domains of science, technology, and innovation bear potentially on the policy choices before the President.

For more information about PCAST, see www.whitehouse.gov/ostp/pcast.

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Workforce Development

With the support of the NSF's Advanced Technology Education (ATE) program, Penn State has developed a nation-wide partnership of research universities and community colleges that is bringing meaningful core-skills nanotechnology workforce education to technical and community colleges across the United States. This partnership, the NSF National Nanotechnology Applications and Career Knowledge (NACK) Network, fosters (1) resource sharing among community colleges and research



Courtesy: NACK Center

universities for nanotechnology workforce development, (2) the availability of course materials, for web or in-class use, covering a core-set of industry-recommended nanotechnology skills and (3) broad student preparation for careers in the wide spectrum of industries utilizing micro- or nanotechnology. NACK has created and offers continually updated, free-of-charge core-skills course lecture and lab materials, web-accessible equipment capability, and faculty development workshop curricula. Since the inception of the nationwide effort in 2008, NACK research university-community college partnership hubs have been set-up and are functioning in Puerto Rico, New York, Indiana, Minnesota, Texas, and Washington State. Others are underway and these are in addition to the hub comprised of 30 Pennsylvania schools and funded by the State of Pennsylvania since 1998. To-date, there have been over 800 graduates from the nanotechnology core-skill classes offered by the NACK hubs, 20,881 web downloads of NACK educational materials, and 957 educators who have completed professional development workshops. The Penn State nanotechnology workforce development programs began as a Pennsylvania-focused activity with the founding of Pennsylvania Nanofabrication Manufacturing Technology (NMT) Partnership funded by the State in 1998. In 2003 the additional component of an NSF ATE regional center for nanotechnology workforce education was added. In 2008 this NSF ATE activity evolved into the NACK Network nationwide workforce development partnership. By creating education pathways from high school to skilled manufacturing careers across the country, the NACK Network is working to train the U.S. nanotechnology manufacturing workforce.