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The NACK Network: A Research University/Community College Partnership for Manufacturing Workforce Development

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The Nanotechnology Applications and Career Knowledge (NACK) NSF ATE national center is a working, productive nanotechnology workforce development network involving research universities and community and technical colleges across the US. The objectives of this partnership are (1) enhanced national coordination of the development, availability, and dissemination of high quality micro-nanofabrication workforce educational resources, programs and activities and (2) enhanced growth of the US nanotechnology manufacturing workforce. The NACK approach includes developing and supporting resource sharing among community colleges and research universities; providing course materials which deliver a core-set of industry-recommended nanotechnology skills; stressing broad student preparation for careers in any industry utilizing micro- or nanotechnology; and the development of economically viable, quality nanotechnology education across the U.S. NACK continually strives to further develop its alliance of community college/university resource-sharing hubs and is also working toward the addition of virtual hubs to insure its ability to reach out to every corner of the US. To support this network and all U.S. community college nanotechnology education efforts, NACK offers continually up-dated and free-of-charge core-skills course lecture and lab materials, recruiting materials, retention and completion approaches, web-accessible equipment capability, and faculty development workshop curricula at its web site www.nano4me.org. In addition NACK is working to develop and disseminate an assessment rubric for its core-skill course power-point and videoed lecture and lab materials, and is teaming with industry to have its core-skills “institutionalized” into industry standards.

The NACK partnering/resource-sharing approach is a model for all aspects of science and technology education. NACK Network materials, practices and services, ready-available at www.nano4me.org, have strengthened secondary and community college nanotechnology manufacturing workforce development, in particular, and STEM education, in general, as survey results demonstrate.