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NANOTECHNOLOGY WORKFORCE DEVELOPMENT AT THE PENNSYLVANIA STATE UNIVERSITY

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Abstract: The NSF ATE Nanotechnology Applications and Career Knowledge (NACK) Resource Center is hosted in the Center for Nanotechnology Education and Utilization (CNEU) at the Pennsylvania State University. NACK is focused on the continued development of a robust nationwide infrastructure for nanotechnology workforce development. The mission of NACK is to enable and sustain nanotechnology education at community colleges (CCs) across the country. The contributions of NACK include: building partnerships in nanotechnology education among research universities and CCs; assisting CCs in the development of education programs that give students a broad nanofabrication base; providing nanotechnology professional development of CC educators; developing nanotechnology education skill standards and stackable certificates; facilitating remote access to nanotechnology equipment. However, an important component of these developed programs is teaching students and educators sustainable nanotechnology whereby natural resources are preserved, and environmental, health, and safety awareness is emphasized. CNEU utilizes NACK's resources to reach out to African and Hispanic American students, women, and veterans and promote their engagement in nanotechnology. NACK's contributions are acknowledged in the National Academies *"Triennial Review of the National Nanotechnology Initiative (2016) Report"* [1], and the *"Report to the President and Congress on the 4th Assessment of the National Nanotechnology Initiative, 2012"* [2].

Bio: Dr. Awadelkarim's research and teaching interests are in nanoelectronics, nanoelectromechanical systems (NEMS), and related nanomaterials. He is the Vice President of the Commission for the Development of the UNESCO's Encyclopedia of Life Support Systems (UNESCO/EOLOSS) Theme on Nanoscience and Nanotechnologies, and a member of the Advisory Board for nano@stanford, the NSF National Nanotechnology Coordination Infrastructure Site at Stanford University. Dr. Awadelkarim was selected by the US National Academy of Sciences as a Jefferson Science Fellow and has worked as a Consultant and Senior Science Advisor at the United States Department of State during 2006 – 2011.