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Nanotechnology Education in America

Kevin Conley

Forsyth Technical Community College, USA

From its genesis with a grant from Wells Fargo in 2005, I had the pleasure of establishing and leading one of the foremost programs in Nanotechnology education in the United States at Forsyth Technical Community College in Winston-Salem, North Carolina. To prepare graduates for employment in a rapidly evolving technical economy, students were trained as generalists with emphasis placed on the pillars of biology, chemistry, physics, ethics, economics, and engineering.

Our laboratory featured a diverse suite of instrumentation for the characterization and fabrication of materials and structures at the nanoscale. Strong partnerships were nurtured at Wake Forest University and The Joint School of Nanoscience and Nanotechnology for training on advanced facilities. Our influence grew through sustained collaborations with equipment vendors, industrial partners, academic departments of various disciplines, as well as public and invited scientific presentations. Vibrant

interaction with local industry was promoted through industrial advisory board meetings featuring live student demonstrations of equipment functionality and their poster presentations of independent projects.

In the United States, the educational and economic spaces for nanotechnology exhibit unique qualities. Funding from government, corporate, and financial institutions play special roles. The focus on product delivery is paramount. Engaging small businesses and entrepreneurs continues to be a challenge. My talk will conclude with a vision for the future of nanotechnology education in America.

My research has included the development of ion-confinement chambers for Buckminsterfullerene with Richard Smalley at Rice University, the calculation of resonant frequencies of caged fullerenes at Michigan State University, and a Research Fellowship at the Technical University of Berlin.

Biography

Kevin Conley holds degrees in physics including a B.S. from University of Oklahoma, M.S. from Michigan State University, PhD from Wake Forest University, and has held Research Fellowships at Rice University and the Technical University of Berlin. Dr. Conley established the first two-year Nanotechnology Degree Program in the American South-east at Forsyth Technical Community College in Winston-Salem, North Carolina, USA in 2005. He has given invited talks on Nanotechnology Education at conferences in Boston MA, Houston TX, San Francisco CA, Portland OR, Albuquerque NM, and Durham NC. His research interests include the electric structure of insulators, numerical computation, and applications of fluorescence microscopy. He is the lead author of an upcoming problem solving handbook on applications of Nanotechnology.

kevinconley271828@gmail.com

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