

**Symposium on Undergraduate Nano-Education:  
"Addressing the Challenges of Nanoscale Science & Engineering Education"**

**Presentation:** Use of Real World Nanotechnology Applications: Teaching nanoscale concepts and integrating information from traditional sciences into a unified teaching module.

Deb Newberry, Dakota County Technical College, Nano-Link Regional Center

**Presenter Biography:** Trained in nuclear physics, Deb spent 23 years in the corporate world performing radiation analysis on satellite systems and serving in executive management. In 2001 she left the corporate world and began consulting in nanotechnology. As a nanotechnology consultant she has supported large established companies, start-up firms, multiple educational institutions and various state agencies.

Ms. Newberry co-authored the book *The Next Big Thing is Really Small: How Nanotechnology will Impact the Future of Business* which was released in 2003.

She is the Director of the NanoScience Program at Dakota County Technical College and in that role has created and taught 8 nanoscience courses to support the AAS NanoScience Technologist Degree program. She also leads and teaches educational programs in nanoscience for high school teachers and students.

In September, Dakota County Technical College received a 4 year grant from the National Science Foundation for Nano-Link, a Regional Center for Nanotechnology Education. Ms. Newberry is the Principal Investigator for the grant and the Director of the Nano-Link Center.

**Abstract:**

Exposing students to real, product applications of nanotechnology can be a viable vehicle for introducing or expanding understanding of nano concepts. Not only can the application be used to discuss the scientific method and trade-offs which must be considered in the development of a new product, but it can be used as a practical example of the integration of concepts from physics, chemistry, biology and engineering and practice of critical thinking skills. Examples used in the DCTC curriculum will be provided for participants to use in their own courses or programs.