

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

**Presentation:** "Interdisciplinary Research and Education: A Universities Quest to Unite for the Future of Nanotechnology"

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**Presenter Biography:**

Heather Herd is a graduate student in the Department of Biomedical Engineering and Nano Institute of Utah at The University of Utah. Her dissertation work focuses on creating silica nano scale drug delivery systems for the treatment of primary and metastatic adenocarcinomas. She is the graduate student chair for the Nano Institute of Utah and serves on the board for the NanoUtah 2009 conference committee. Through these roles she facilitates educational nanotechnology outreach events, for the general public, as well as, high school, middle school and undergraduate students. She is actively involved in organizing and recruiting graduate students to assist in The U's developing interdisciplinary research collaborations. Additionally, she has served as a teaching assistant and will aide in the development of both undergraduate and graduate nanotechnology educational programs.

**Abstract:**

The Nano Institute of Utah at the University of Utah ('The U') endeavors to create an interdisciplinary research and educational environment to drive innovation and development in nanotechnology. The institute serves as an organizing catalyst facilitating the interaction of a multitude of differing disciplines. Its' investigators have effectively maintained sustained multi-departmental and multi-institutional partnerships, demonstrated by funded grants and collaborative manuscripts. These forged professional interdisciplinary interactions have also initiated multi-departmental nanotechnology and nanoscience courses at the undergraduate, graduate and professional levels. Currently, The U has three developed courses each run by multiple faculty members from a variety of different departments (Engineering, Pharmaceutics, Biology, Chemistry, etc.). The courses are also cross listed across a multitude of different disciplines, eliciting a varied background within the course's student population. Similar to a professional collaborative research environment, the variations in faculty and student expertise within these courses are utilized to the full advantage by educing team building exercises to stimulate varied approaches and ideas. These team efforts are further integrated into educational outreach programs, assisting in the educational advancement of nanotechnology within the broader Utah community. Seminars, symposiums and general public education events, including nanoUtah and NanoDays, demonstrate the success of the institutes' ability to engage trainees and young scientist in the dissemination of their findings and knowledge of nanotechnology, to other disciplines, as well as, the community. As The U develops more defined training programs, such as submitted IGERT and NIH training grant proposals, they will face the challenge of further unifying these interdisciplinary collaborations and programs to produce competitive educational and work-force training programs.