

Interdisciplinary Education in the Societal Implications of Nanotechnology at the University of South Carolina

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Through their Nanoscale Interdisciplinary Research Team [NIRT] program, the NSF has supported a large project at the University of South Carolina to investigate the societal and ethical implications of nanotechnology. Several components to the grant are aimed at enhancing undergraduate and graduate education with respect to the ethical and societal implications of nanotechnology. These include:

1. **Courses:** Several undergraduate and graduate courses have been developed or are in the planning. During Spring 2003, Davis Baird (Philosophy) and Cathy Murphy (Chemistry) co-taught an Honors College course on the foundations of inquiry in science. During Fall 2003, George Khushf (Center for Bioethics) is teaching an Honors College course, “Enhancing Humans” focusing on the NSF “NBIC [nano/bio/info/cog sci]” push for enhancing humans. This coming Spring 2004 both an undergraduate “nano course”—taught by Ed Munn (Philosophy)—and a graduate “nano course”—taught by Otávio Bueno (Philosophy) will be on offer.
2. **Undergraduate Research:** Another component of the grant focuses on bringing both undergraduates and graduate students into the research being pursued by the faculty members on the grant. Undergraduates participate in two ways, by working with an individual member of the project team, and by coming together as an undergraduate group twice a month to share with each other their activities and discoveries. At this point nine undergraduates are working with faculty from Biology, Anthropology, Art, Philosophy and English.
3. **Graduate Research:** The graduate student component to the grant has not yet quite geared yet. Several graduate students are working with individual professors or another attached to the grant. However, we hope to attract graduate students who are specifically interested in this interdisciplinary approach to nanotechnology, to work together and in an integrated way on the project as a whole. In addition, we have an NSF “Integrative Graduate Education Research and Traineeship” [IGERT] grant in preparation. The basic idea for this approach to graduate education is to bring graduate student humanists, social scientists, scientists and engineers together over their common interest in the nanoscale. While each will continue to pursue an “ordinary” discipline-based PhD, they will in addition work together, through common courses, colloquia experiences and research partnering, to jointly develop a broader appreciation of the nanoscale.
4. **NanoCulture Lecture series:** We are organizing roughly 12 seminars a year aimed at broad interdisciplinary audience—including graduate and undergraduate students.

All of these initiatives and others will be discussed in greater detail in my paper.