NEEDS ADDRESSED: To better understand the dimensions of ethics and policy learning in undergraduates, NanoSTEP will investigate whether the inclusion of nanotechnology-related societal, ethical, environmental, and economic issues at multiple levels in the curriculum can promote earlier student interest in and greater sensitivity to the social complexities of engineering innovation. Another area that deserves critical examination is the relationship between emerging technologies and underserved populations, with respect to the potential for environmental and social justice problems and deficiencies in access to opportunities for research and education.

OBJECTIVE 1: Module on nanotechnology for first-year required course
FOCUS: environmental and ethical issues and case studies
WORKSHOP HELD JANUARY 2012
MODULE INTRODUCED MARCH 2012

OBJECTIVE 2: Module on nanotechnology for second-year required course
FOCUS: social and economic issues for nation and world
WORKSHOP TO BE INTRODUCED AUGUST 2012
MODULE TO BE INTRODUCED IN FALL 2012

OBJECTIVE 3: Introduce nanotechnology issues into select upper-level elective courses
ONGOING BEGINNING IN 2012

Approach/Methods

1) Faculty Workshops
Involving all faculty in learning about nanotechnology and planning the curriculum to be implemented builds consistency and buy-in for teaching new units on nanotechnology to all students in core courses.

2) Curricular Modules
The modules developed by faculty will be institutionalized into all sections of the core courses and will focus on social, ethical, economic, and environmental (S3E) impacts.

3) Student Engagement
We’re interested in studying student attitudes about emerging technologies and their S3E impacts. We’ll conduct pre- and post-tests for large groups of students and in-depth interviews with small groups of volunteer participants.