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Research, Ethics, and Society: Discussion Guide

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Description

The Research, Ethics, and Society Cases provide starting points for discussion of the outcomes of new knowledge and innovation for society and the ethical obligations of researchers to society. A foundation text, accessible through CITI, explains why researchers have social responsibilities and outlines ways researchers can act in the public's interests. This Discussion Guide summarizes that foundation text. Collectively the cases explore several themes in this broad area.

Body

Why do researchers have social responsibilities?

The cases present situations in which scientists, engineers, and the knowledge and innovations resulting from their work are tangled up in questions of public interests. While the cases neither definite social responsibility nor provide an account of why such responsibilities exist, they open up such questions.

Researchers, the public, and ethicists all agree researchers have social responsibilities, although the groups state and explain these moral obligations in different ways. Codes of Ethics and Codes of Conduct developed by professional societies emphasize obligations to protect and enhance the public's interests. Similarly, the public expects researchers to act in its interests — from spending public research funds wisely to anticipating outcomes of research and innovation. Following an ethical analyses of John Simon, Charles Powers, and Jon Gunnemann, computer engineer and Jesuit Michael McFarland argues that researchers' professional knowledge and skills place them in a unique position to help the public and thus create an obligation for them to do so. Engineering ethicists Mike Martin and Roland Schinzinger argue that, when researchers create new knowledge or technologies, they cannot predict all of the social outcomes and some outcomes may be negative. In this sense, science and engineering become an experiment on society and the risks associated with new knowledge or innovation create researchers' responsibilities to society.

How can researchers act on social responsibilities?

Focused on daily routine, science and engineering students and practitioners may wonder how to take action on social responsibilities. The cases illustrate several ways.

Martin and Schinzinger argue engineers should address social responsibilities by treating innovation as an experiment on society, remaining engaged in assuring public safety, and working with users to assess and address risks created by innovation. The ongoing innovation surrounding automobile air bags provides an exemplar of this kind of engagement.

Other researchers have worked in the public interest by using their skills as public employees or undertaking policy relevant research. This approach to acting on social responsibility has myriad ethical dimensions when the public employment or advising involves police or military work. When, how, and whether to work on military projects has long been an area of ethical deliberation for physicists and engineers. The bioterrorism and Human Terrain System cases raise these issues for life and social scientists.

While *pro bono* work has a respected tradition in law and medicine, engineers have recently become more engaged in these activities. The Engineers Without Borders case explores this approach to acting on social responsibilities.

Political advocacy is as controversial as military work in the sciences and engineering. Yet, in an increasingly technological world, the expertise of researchers is needed in this area too. The Union of Concerned Scientists case shows some of the ways advocacy groups get involved, including educating the public.

Social responsibility and systems

Understanding the dynamics of knowledge and technological systems enables researchers to engage their social responsibilities. While technologies are frequently thought of as objects — light bulbs, wind turbines, hair dryers — they more often function in systems. For a light bulb to be of any use, there must also be generators that make electricity, power lines that deliver it, companies that make appliances, organizations that run distribution networks, etc.

The Clinical Research case illustrates the many points at which researchers can intervene in technological systems. When Bernadine Healy, NIH's former director, and Florence Haseltine, former director of the Center for Population Research at NIH, joined efforts in the 1990s to make clinical research more useful for women, children, and minorities they tackled the clinical research system from many directions — changing NIH policy and programs, building an advocacy organization, and publishing in a variety of outlets to explain issues to the medical profession and the public.

Whether one lauds or lambasts the Green Revolution — the introduction of technology and research-based agriculture to developing nations in the 1950s and 1960s — it exemplifies the systems nature of contemporary science and technology. A network of technologies, knowledge, individuals, and social institutions — new crops, new growing practices, training for farmers and agricultural scientists, philanthropic organizations, and political agendas — made up the Green Revolution and Norman Borlaug, a key figure in the changes, effectively engaged multiple points of this system in pursuit of social outcomes.

A précis of Byron Newberry's analysis of communication failures among engineers working on New Orleans's Hurricane Protection System — the failed technological system that underlay catastrophic flooding during Hurricane Katrina — likewise highlights the systems nature of technology and how understanding it can provide options for acting in the public interest.

Social responsibility across cultures

Acting in the public's interests can be difficult for researchers who are members of the community they seek to serve. When researchers try to develop positive outcomes for other cultures, these difficulties are compounded. Who are the publics involved? What is in their best interests? Further, with science and technology becoming increasingly global enterprises, these issues continue to grow in complexity. Three of the cases — Engineers Without Borders, Green Revolution, and Human Terrain System — illustrate the developed and developing worlds mutually engaged in science and engineering endeavors. They raise questions of ethics and social responsibility in cross-cultural contexts.

Notes

Our project team and advisory board read many drafts and provided important insights.

Project team: Heather Canary, Joseph Herkert, Jameson Wetmore, Ira Bennett, and Jason Borenstein.

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