

Gerald R. Ford School of Public Policy
University of Michigan
Ann Arbor

A New Program in Science, Technology, and Public Policy

The Gerald R. Ford School of Public Policy at the University of Michigan has launched a university-wide educational and research program in science, technology, and public policy. Scientific and technological developments are playing increasingly central roles in contemporary societies, and are consequently becoming more frequent topics of political and policy discussion. The questions facing our nation are both serious and complex, e.g.:

- What level and type of public and private investment is necessary in the production of new knowledge (research and innovation), human capital (particularly scientists, engineers, and other professionals), infrastructure (institutions, laboratories, networks), and policies (tax, intellectual property) to achieve economic prosperity, national security, and social well-being in an increasingly competitive global, knowledge economy?
- How can the nation meet its energy needs in the face of the increasing constraints on fossil fuel production and utilization? What is the role for non-carbon technologies such as nuclear energy, solar power, and hydrogen-based sources?
- What will be the impact of technologies that increase in power at an exponential pace such as information technology, biotechnology, and nanotechnology?
- What policies should guide research and applications in biomedical research in controversial areas such as stem cells, cloning, and global pandemics?
- How should the nation address the growing concerns about science, mathematics, and engineering education?
- How can the knowledge produced through research on university campuses propagate more freely and effectively into the marketplace to serve society?

In response to increasing demand for experts in the politics and processes of science and technology policymaking as well as a need for sustained intellectual engagement on these issues, the Ford School's new Science, Technology, and Public Policy program aims to develop both educational and research initiatives in this area. This program will encompass two primary questions. First, it will explore "science and technology for policy": how science and technology are used to develop public policy in a broad array of domains such as national security, public health, economic competitiveness, and environmental sustainability. Second, it will examine

“policy for science and technology”: how policies are developed to promote beneficial scientific and technological development at the international, national, state, and local levels, such as the allocation of research funding and regulation of new research and technologies. As one of the world’s leading research universities, typically ranked among the top three in the nation in research activity across an unusually broad range of disciplines, the University of Michigan has both an important opportunity and significant obligation to influence policy development in science and technology.

The first phase of this effort is underway with the creation of a graduate certificate program in science, technology, and public policy, which augments existing PhD and masters degree programs across the university. This program is geared toward two main graduate student audiences: students in science-based fields (including those in the sciences and engineering as well as in cross-cutting fields such as medicine, and public health), and professional school students (including public policy as well as law, business, natural resources, etc.). A science and technology policy option is also being developed for students enrolled in the Masters of Public Policy programs of the Ford School.

In the coming years, Michigan intends to launch a university-wide PhD program in science, technology, and public policy, while expanding its instructional program with initiatives to teach undergraduates, postdoctoral fellows, and mid-career professionals about the politics and processes of science and technology policymaking. All of these programs will help students both understand the world of science and technology policymaking as well as provide them with tools for science and technology policy analysis.

The science, technology, and public policy program will also stimulate and support multidisciplinary research activities involving faculty and students across the university through research seminars, website portals, and research projects. These activities will cover general issues related to science and technology policymaking and take advantage of faculty interests and expertise in energy research, biomedical sciences, emerging technologies (info-bio-nano), economic competitiveness, national security, environmental sustainability, technology transfer, and national research policy issues.

Senior faculty leadership for this new program has been provided by former UM President James Duderstadt who is highly active in national science and technology policy activities, serving as past chair of the National Science Board and as a member of the Committee on Science, Engineering, and Public Policy of the National Academies and in policy roles with various federal agencies including the National Science Foundation, the Department of Energy, the Department of Education, and the Department of Defense. The Ford School has recently hired a new younger faculty member, Shobita Parthasarathy, who is trained in science and technology policy with a particular focus on biomedical science policy. Other faculty with science and technology policy interests from around campus have been involved in the planning process to put this initiative together and are involved in teaching and in leadership for the program.

Although the initial core funding for this new program has been provided by the Provost's office and the Ford School, an active campaign has been launched to seek private and government support for both operations and endowment. Thus far grants have been received from the National Science Foundation and the Dow Foundation for early efforts of the program, and fund-raising for the program has been included as a priority in the ongoing Campaign for Michigan with a goal of raising \$20 million for endowment and \$10 million in operating grants for student and faculty support.