



Exciting 2008-2009 Year for STPP by James J. Duderstadt, Co-Director, Science, Technology and Public Policy Program

We anticipate a quite exciting 2008-2009 Academic Year for the University's Science, Technology, and Public Policy Program. While most media attention has been focused on the final months of a long (and loud) presidential campaign, many are thinking ahead to the science and technology policy challenges that must be faced by a new administration. Included in this list of imperatives are the implications of an emerging global knowledge economy increasingly driven by technological innovation; the unsustainable nature of the nation's current carbon-based energy infrastructure; the impact of humankind on global climate change; and the accelerating pace of technological change—all within a context of profound demographic change, increased global connectivity, integration, and competition. There are also grow-

ing concerns about sustaining the nation's leadership in science and technology, e.g., from the media (Tom Friedman), the National Academies (Rising Above the Gathering Storm), the White House (the American Competitiveness Agenda), and Congress (the America COMPETES Act). Yet unfortunately there remains a serious policy vacuum that has allowed investment in federally sponsored research and to drop for the first time in 35 years.

Clearly there is an urgent need for key sectors of our society—business, government, scientist and engineers, physicians and attorneys, economists and public leaders—to develop a more sophisticated and strategic understanding of science and technology policy. Moreover, there is a similar

need for those responsible for policy development to gain a better understanding of the ways in which scientific discovery and technological innovation are shaping our world and how better policymaking in this arena can maximize social benefits and minimize risk. These, of course, are precisely the objectives of the University's Science, Technology, and Public Policy Program, located in the Gerald R. Ford School of Public Policy and involving faculty and students throughout the University.

The new STPP graduate certificate program is continuing to grow, with 18 students currently enrolled and its first four graduates this past year. The STPP postdoctoral fellowship program has also

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Making the Most of Genetic Testing by Shobita Parthasarathy, U of M Ford School of Public Policy and Co-Director, Science, Technology, and Public Policy Program

The field of genetic testing is at a crossroads. This arena of medicine, which helps us assess an individual's risk of contracting disease before symptoms are present, has great potential to improve preventive health care. Indeed, with the recent passage of the Genetic Information Nondiscrimination Act, meant to protect Americans against discrimination based on their genetic information when it comes to health insurance and employment, use of this technology is poised to increase dramatically. However, these tests

also create considerable uncertainties: they often generate unclear risk information that may lead to drastic and inappropriate medical choices. The best way to proceed with these technologies is to develop a national regulatory framework that would ensure their benefits while minimizing their risks.

Genetic testing for breast and ovarian cancer (known as BRCA testing), which was initially offered twelve years ago but continues to generate controversy today,

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For more information about the STPP Program, please check out our website!!!

www.stpp.fordschool.umich.edu

STPP Lecture Series—Fall 2008

The STPP lecture series is sponsored by the Herbert H. and Grace A. Dow Foundation
Events are held on Mondays, 4:00-5:30pm in the Betty Ford Classroom (1110 Weill Hall) at the Gerald R. Ford School of Public Policy

22 September 2008

“Bangalored! The Making of Asia’s Newest World City”

Michael Goldman

Associate Professor, Department of Sociology
 University of Minnesota

Commentary by Jonathan Levine, Professor and Chair of the
 University of Michigan Urban & Regional Planning Program

Co-sponsored by the University of Michigan School of Information

17 November 2008

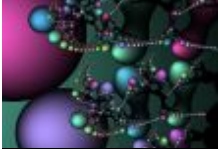
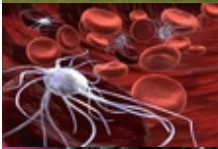
**“Beyond the Precautionary Principle in Progressive Politics:
 Toward the Social Regulation of Genetically Modified Organisms”**

Daniel Kleinman

Director of the Holtz Center for Science & Technology Studies
 Professor and Chair, Department of Rural Sociology
 University of Wisconsin-Madison

Commentary by Maria Carmen Lemos, Associate Professor
 University of Michigan School of Natural Resources and Environment

*Co-sponsored by the University of Michigan
 School of Natural Resources and Environment*



Exciting Year *(continued from page 1)*

been quite active, with the first two postdocs now moving on to attractive faculty positions (Dan Plafcan to the University of Virginia and Paul Erickson to Wesleyan University) and the arrival of a new postdoctoral fellow, Joy Rohde, arriving with a B.A. in Anthropology from the University of Chicago and a Ph.D. in History and Sociology of Science from the University of Pennsylvania and an interest in scientific advisory roles in national security policy. Dr. Rohde is accompanied her partner, Perrin Selcer, who will finish his Ph.D. in History and Sociology of Science at Penn while in residence at the Ford School

as a visiting scholar.

This will be a particularly active year with several new STPP courses offered throughout the university; see topics as wide-ranging as info tech policy, environmental policy, and general science and technology policy (a complete listing of the STPP Graduate Certificate Program Electives is available on page 6). Additionally, a new undergraduate course, PUBPOL 490: Science, Technology, and Public Policy will be taught by Homer Neal and James Duderstadt

in Winter Term. This course is designed for undergraduates at the upper division level.

We will also continue our successful STPP Lecture Series, inviting both scholars and policymakers from a variety of fields. As always, we will continue to emphasize STPP's interdisciplinary dimensions by asking University of Michigan scholars from complementary disciplines to offer commentaries (a list of Fall Semester events is provided on page 2).

Making the Most of Genetic Testing *(continued from page 1)*

illustrates many of the challenges associated with these technologies. This test analyzes the BRCA1 and 2 genes for mutations that are associated with increased risk of contracting breast and ovarian cancers. Observers have criticized the nationwide magazine, radio, and television advertising campaign launched by the provider of this technology. They worry that doctors' offices will be flooded with requests for a test that is only useful for a small fraction of individuals and that requires specialized counseling in order to be understood and used effectively. BRCA gene mutations explain only 5% of all breast cancers, for example, and the average lifetime risk of contracting cancer for an individual with a BRCA mutation can vary considerably, from 35-85% for breast cancer, and from 10-50% for ovarian cancer. Individualized risk information is not available. Furthermore, there is no "magic bullet" to eliminate cancer risks in BRCA "mutation-positive" individuals. Increased mammographic screening only detects cancers early, and both

chemoprevention and preventive surgery bring serious risks themselves.

Banning or limiting direct-to-consumer marketing might control demand, but it would only partially solve the problems that these products raise. First, a test could still be commercialized and commonly used as soon as it is technically feasible to do so, even before its utility for patients is clear. This makes results even more difficult to understand. When BRCA testing was first offered in 1996, for example, the average lifetime risk of contracting breast cancer for an individual with a BRCA mutation was thought to range from 56-85%. Today, as noted above, the average lifetime risk of contracting breast cancer for an individual with a BRCA gene mutation is reported as 35-85%. This change is quite significant—a woman might make a different decision about removal of her breasts and ovaries today than she might have made ten years ago.

Second, patients will still not be

guaranteed appropriate clinical care to help them interpret genetic test results. In many other countries, DNA testing, including BRCA gene analysis, must be coupled with specialized genetic counseling. This counseling provides patients with assistance in interpreting the complex risk information generated by genetic tests. In the US, however, no such counseling is required, and many physicians lack the advanced training in genetics and statistics needed to help patients develop an appropriate risk management program. This issue becomes critical because patients and their families are often particularly vulnerable at this time, overwhelmed by the burden of making such consequential decisions under intense emotional stress. Although scientific and medical organizations, government advisory committees, insurers, and patient advocates have developed recommendations to help physicians counsel patients, they differ significantly, muddying the picture further.

For genetic testing to provide the

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CALL FOR APPLICATIONS: STPP Postdoctoral Fellowship Program

The Science, Technology, and Public Policy (STPP) Program in the Ford School of Public Policy at the University of Michigan seeks to fill up to two postdoctoral fellow positions (each for two years in residence), starting Fall 2008. Fellows will be expected to perform research in some aspect of science and technology policy, teach courses in science and technology policy (one course in Year 1 and two courses in Year 2), help to organize a seminar series, and work with faculty to develop the STPP program. In addition to working with colleagues in STPP and the Ford School, fellows will find a wide range of programs at University of Michigan that provide opportunities for enrichment and collaboration, including leading programs in law, business, public health, medicine, engineering, the sciences, and science & technology studies. Applicants can learn more about the STPP Program through our website, <http://stpp.fordschool.umich.edu>.

Applicants should be recent recipients of the doctoral degree, with demonstrated interest in science and technology policy. Areas of specialization and disciplinary approaches are open. These fellowships are made possible through a generous gift from The Herbert H. and Grace A. Dow Foundation. Salary is competitive and includes benefits. Modest funds will also be provided for moving, conference travel, and research. Awardees will be expected to be in residence in Ann Arbor, Michigan, for the time of their award and be an active colleague within UM.

Applications received by January 15, 2009, will be given first consideration, although we will continue to accept applications after that date. Please send application materials, which should include a CV, letter describing research and teaching interests, a statement outlining the proposed research project, teaching evaluations, and three letters of reference to:

STPP Fellow Search
Attn: Bonnie Roberts
Gerald R. Ford School of Public Policy
University of Michigan
735 S. State Street, 4204 Weill Hall
Ann Arbor, MI 48109-3091 USA
(734) 615-6942
fischerb@umich.edu

**APPLICATION
DEADLINE
for the
STPP Graduate
Certificate Program
Monday
October 15, 2008**

Genetic Testing *(continued from page 3)*

best possible benefit for the patient, we must develop a single approval process that will alleviate some of the burden now placed on physicians and patients. It should include review by an advisory committee (composed of geneticists, allied genetics professionals, specialists, molecular biologists, representatives of insurance companies, and patients) that would classify genetic testing as experimental until research has demonstrated its accuracy and utility. This process would ensure that all genetic tests improve clinical care and outcomes, and also provide a clear national standard for the prescription, referral, and use of each genetic test.

Those who oppose regulation emphasize the negative implications for an already overburdened FDA and a small genetic testing industry, and the absence of similar government involvement for other medical tests. Without a regulatory body, however, genetic testing may not have much of a future. In an environment of confusion and uncertainty about who should use genetic services, how results should be interpreted, and when testing might improve an individual's disease outlook, this field may not be able to establish a standardized place in everyday health care—effectively a waste of dynamic, relevant information. Creation of a federal approval process would help us understand the realistic promise of genetic medicine and determine what genetic testing technologies can and cannot tell us.



from STPP People

The Chilean Patagonia is an area of world-wide concern due to its pristine nature and its unique hydrology, ecology, and biogeography. It is also one of the world's last "unspoiled" areas. Recently, hydropower development has been proposed for this region, and there are many social and scientific questions regarding the legitimacy of these plans. On the one hand, the development of hydropower would be a cost-effective energy solution, since the power from these dams would add considerable capacity to Chile's electricity grid without requiring fuel imports. However, this development would undoubtedly come at a considerable price. The existing Patagonian flora and fauna have been little-studied, but some evidence may indicate – at an ecosystem-level – its potential in providing major global benefits to CO₂ reduction as well as other, more localized, ecosystem services. Currently, national policies of economic growth, primarily through mining, and goals of future energy production are facing off against a growing conservationist movement.

During the workshop, participants shared information on the various methods of their disciplines pertaining to water, and its management. They learned about the unique natural, social, economic, and political factors influencing the region. They also discussed how different multi-disciplinary approaches could be used towards assessing the costs and benefits of development schemes in Chilean Patagonia.

Shaw is currently working with the rest of the PASI 2008 participants in putting together a multi-disciplinary white-paper for the Chilean government and NGOs outlining the methodologies needed in assessing river development projects from multiple viewpoints. This report – expected to be completed before 2009 – will be written in both English and Spanish, drawing primarily upon examples from Chile and Patagonia to explain the different scientific, social, and economic concepts presented.

Shobita Parthasarathy (STPP faculty) was on leave last year, conducting research for her new project: a comparative study of the politics of patenting biotechnology in the United

States and Europe. She spent the academic year as a Policy Fellow at the Woodrow Wilson International Center for Scholars in Washington, DC, and then spent four months over the summer in Munich, Germany, as a Visiting Scholar at the Max Planck Institute for Intellectual Property, Competition, and Tax Law. Last year, she was also the recipient of a fellowship from the American Council of Learned Societies. The time away provided her with an opportunity to conduct interviews and archival research with players involved in patent policy debates in both the US and Europe. Shobita's research project is being funded by a Scholar's Award from the Science & Society Program at the National Science Foundation.

Dan Plafcan (STPP postdoctoral fellow) completed his postdoctoral fellowship with the Science, Technology, and Public Policy (STPP) Program in August. He has moved to Virginia where he is Assistant Professor in the Department of Science, Technology and Society at the University of Virginia. Dan is currently teaching "Introduction to Socio-Technical Analysis" to fourth-year engineers at the University of Virginia.

Kevin Reed (STPP Grad) was admitted into the STPP Graduate Certificate Program in March, 2008. He is a second year graduate student in the Atmospheric Science Ph.D. program in AOSS. He studies the development of tropical cyclones in the Atlantic Ocean, and the impact of climate change, and more specifically African dust, on this development. He uses regional and global climate models to develop techniques to better understand these interactions. Kevin is also very interested in the manner in which science policy is developed and implemented in the United States, mainly climate change policy. Upon graduation, Kevin is strongly considering a career in science policy.

Paul Erickson (STPP postdoctoral fellow) completed his postdoctoral fellowship with the Science, Technology, and Public Policy (STPP) Program in August. He has moved to Connecticut where he is Assistant Professor in the Department of History and Science in Society Program at Wesleyan University. He is currently teaching "U.S. Science and Technology Policy", and a survey of "Science in Western Culture, 1650-1900." Next spring he will be teaching "Science and the State" and "History of Ecology and Environmentalism."

Jacqueline Hayes (STPP Grad) was admitted into the STPP Graduate Certificate Program in March, 2008. She is pursuing a Master's in Public Health in Environmental Health Sciences. She has a particular interest in air quality and she aspires to become involved in environmental health policy analysis. Jacquelyn believes the Science, Technology, and Public Policy Certificate is a great complement to her MPH degree because this academic preparation will permit her to be an effective liaison between the scientific and policy communities. After gaining experience domestically, she hopes to apply her knowledge and experience at the international level, working for the United Nations Environment Programme or the WHO Public Health and Environment Programme.

Shaw Lacy (STPP Grad) Shaw recently attended the Pan-American Advanced Study Institute's (PASI's) 2008 international workshop "Human, Physical, and Natural Capital Investment in Patagonia: A Predictive Approach under the Sustainability Criterion" in Concepción, Chile Aug 10-20. Invited were faculty and doctoral students from a number of universities, as well as representatives from government agencies and tribal groups from the northwestern United States. Discipline experts included economists, hydrologists, aquatic ecologists, historians, cultural experts, ecosystem modelers, and remote sensing specialists.

Certificate Program in Science, Technology, and Public Policy (STPP)

Application Deadlines: February 15th and October 15th

CURRICULUM

The STPP certificate requires 15 credit hours of coursework, including three core courses and 2 electives of the student's choice. These courses can be taken in any order.

Core Courses

STPP Core Course 1—PubPol 650: Introduction to Science and Technology Policy Analysis (Offered in Winter; 3 credits)

STPP Core Course 2—PubPol 754: Research Seminar in Science, Technology, and Public Policy (Offered in Winter; students must enroll in 3 credit option)

STPP Core Course 3—PubPol 585: Political Environment of Policymaking (Offered in both Fall and Winter, Fall option focuses on science & technology policy examples; 3 credits)

Elective Courses

Information/Communication Technology

PUBPOL 720/SI 621 : Ethics, Values, and Information Dilemmas

SI 507/703 : Foundations of Information Analysis & Design

SI 510 : Special Topics: Data Security and Privacy: Legal, Policy and Enterprise Issues (Newly Listed)

SI 532 : Digital Government I - Information Technology and Democratic Politics

SI 533 : Digital Government II - Information Technology and Democratic Administration

SI 550 : Seminar in Information Policy: Regulation & Politics (Newly Listed)

SI 579 : Government Information –Issues, Resources, and Policy (NEW)

SI 605 : Special Topics: The Development and Future of the Internet

SI 645 : Information Use in Communities (NEW)

SI 648/748 : InfoCulture: Theory and Method in the History and Sociology of Information Technology

SI 668 : Seminar in Information Policy: Regulation and Politics

SI 741 : Systems, Networks, and Webs

Biotechnology

***EPID 776** : Bioterrorism & Other Weapons of Mass Destruction

HMP 517 : Issues in Public Health Genetics

PUBPOL 759 : Genetics and Biotechnology Policy (not currently offered)

Automotive Technology

UP 572 : Transportation and Land Use Planning (not currently offered)

UP 671 : Public Policy and Transportation

Space Policy

AERO 583 : Management of Space Systems Design

AOSS 581/AERO 581 : Space Policy and Management

Environmental Policy

CAAS 596 : The History of Environmental Thought and Activism

ESENG 501 : Energy Science, Technology and Policy (Newly Listed)

NRE 558/CEE 587 : Water Resource Policy

NRE 559 : International Environmental Policy and Law

NRE 575/PUBPOL 500 : Thinking Analytically for Policy and Decisions (NEW)

PUBPOL 563/HMP 686 : Environmental Policy

PUBPOL 564 : Government Regulation of Industry and Environment

PUBPOL 653 : Global Environmental Governance (not currently offered)

PUBPOL 655 : Energy in World Politics (not currently offered)

***UP 532** : Sustainable Development: Resolving Economic & Environmental Conflicts (not currently offered)

General Health/Medicine Policy

ANTHRCUL 458/558 : Maternal/child Health, the Environment, & Pollution in Africa

ANTHRCUL 548 : Theory and Practice in Medical Anthropology

CAAS 443 : Pedagogy of Empowerment: Activism in Race, Gender, and Health

CAAS 483 : Gender Poverty, Medicine

EPIDEMIOLOGY 663 : Health, Evidence & Human Rights

HMP 615 : Introduction to Public Health Policy

HMP 618 : Tobacco From Seedling to Social Policy

HMP 625 : Health and Health Systems in the Developing World

HMP 653 : Law and Public Health

HMP 684 : The Politics of Health Care Policy

HMP 685 : The Politics of Health Policy

HMP 693 : Mental Health Policy in the United States

***HMP 695** : Public Health Policy Issues in Women's Health Informational Law (not currently offered)

SOC 475 : Introduction to Medical Sociology (not currently offered)

SOC 575 : Sociology of Health and Aging

WOMENSTD 400 : Women's Reproductive Health (not currently offered)

General Science/Technology Policy

ANTHRCUL 625 : Anthropological Approaches to Property and Property Rights

***ChemE 597** : Regulatory Issues for Scientists, Engineers and Managers

CSIB 647 : Strategy for Technology Commercialization

HISTORY 619 : Knowledge/Power/Practice in Science, Technology, & Medicine

HISTORY 629 : Technology and Nature in Africa

HISTORY 796 : Knowledge and Practice

IOE 438 : Occupational Safety Management

IOE 522 : Theories of Administration

PUBPOL 564 : Government Regulation of Industry and Environment

PUBPOL 654 : Science, Technology, and International Affairs (not currently offered)

PUBPOL 757 : National Science Policy (not currently offered)

For more information, please see our website:

www.stpp.fordschool.umich.edu

STPP Steering Committee

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Shobita Parthasarathy, Ford School of Public Policy (Co-Director)

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Carl P. Simon, Ford School of Public Policy

Arvids Ziedonis, Ross School of Business



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The Joan and Sanford Weill Hall: the new home of the Gerald R. Ford School of Public Policy (and STPP)

STPP STAFF

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(Co-Director)

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