

# **Science, Policy & Social Inequity**

## **Saguaro Lake Ranch, Arizona**

### **May 21-23, 2006**

### **Workshop Summary**

**Sponsored by  
the W.K. Kellogg Foundation  
and the Consortium for Science, Policy & Outcomes,  
Arizona State University**

#### Dan Sarewitz Charge for the Workshop

There are lots of ways to frame inequity, and one of the main goals of the workshop is to explore the richness of the subject. For the workshop, “Science” is meant to be inclusive: technoscience, knowledge production, and innovation processes, “Policy” roots us in human actions and decisions, and we will be focusing on social as opposed to economic inequity.

#### Questions:

1. Is there a coherent issue here?
2. Are there new problems emerging? Or are they the same old problems?
3. Are there new perspectives emerging from our research?
4. Is there a potential future research agenda for a group?
5. Policy Agenda?
6. What is the role of academics?

Papers written by workshop participants were synthesized and presented by “cross pollinators,” and then discussed by the group. Abstracts of all the papers, and drafts of many of the papers, are available at <http://www.cspo.org/outreach/events/inequityworkshoppapers.htm>.

#### **Session 1: Magnificent Hummingbirds**

Maria Carmen Lemos – “Equity in Forecasting Climate: Can Science Save the Poor?”  
Peter Healey – “ResIST – Researching Inequality through Science and Technology”  
Gregg Zachary – “African Traditions Meet the Digital World”

#### Cross Pollinator: Netra Chhetri

A common thread in all three papers is the unequal distribution of knowledge and lack of social and political institutions to create more equitable situations. Healey’s paper summarizes ResIST and highlights this theme, Zachary’s paper explains how a lack of policies has led to a widening gap in IT access in West Africa, and Lemos’ paper shows how the decision-making process can create inequitable distribution of climate forecast information.

### Questions:

1. As academics, what is our competitive advantage and how can we be involved in finding solutions and addressing policy makers and private industry?
2. How can this lead to more equitable distribution?
3. What challenges need to be addressed?

### Discussion Summary:

The distinguishing factor of climate forecasting is that it is mostly useless and was a technology that was created without end users in mind. Where forecasting is useful, there are issues of access and the ability to use it – even though Brazilian farmers may have the information, they may have little or no capacity to respond to this information. While in some cases forecasting may help, as when banks do not lend money for seeds during droughts, in a sense protecting farmers (and themselves) from a poor investment, it may also shift the blame to farmers for not responding to information and could replace local knowledge which may be just as good if not better than the sometimes inaccurate climate forecasting technology.

There are a number of actions that can and should be taken to deal with these types of inequitable situations. The first, and arguably most important, is to find ways to engage with the private sector and with NGOs. The multinational corporation is the most dynamic and critical actor in developing nations and in the U.S., and its main drive is economic, with little thought given to broader inequity issues (e.g. U.S. pharmaceutical companies and race-based medicine). Although engaging with the private sector is difficult, it is not impossible. Social scientists can deliberately look for ways to include corporations in their work as well as ways to defend the importance of equity to corporations. In addition, social scientists can “get out from behind their desks” and serve as academic consultants to corporations (Broad).

Another important intervention for social scientists is to “get the stories out there.” For example, social scientists can highlight the “massively wrong” situation of climate forecasting in which a technology was created without an actual use and is actually potentially harmful (Woodhouse). Furthermore, social scientists have the advantage of possessing a fundamental respect for science along with the ability to “pull the rug out from under it” by working to change conventional frameworks such as the idea that science always produces a social good (Hirsch). Social scientists can also highlight “common sense,” practical, and useful solutions such as mosquito nets, and even cell phones as opposed to complex technological fixes like climate forecasting (Broad). Finally, social scientists can deliberately work to find applications for their research in the real world.

In all of these cases social scientists have the responsibility to ensure that these stories are heard, and one of the simplest ways of achieving this is writing in a way that is widely accessible – “a charge for this workshop that few followed” (Broad). Another method is partnering with agencies from within, as opposed to just publishing in academic journals.

## **Session II: Vermillion Flycatchers**

Simon Cole – “How Much Justice Can Technology Afford? The Impact of Scientific and Technological Developments on Equal (Criminal) Justice”

Gregor Wolbring – “Which Inequality Matters?”

Dorothy Roberts – “Is Race-Based Medicine Good for Us? African-American Perspectives on Race, Biotechnology, and Equality”

Michael Montoya – “Genetic Admixture, Diabetes and Mexicana/o Ethnicity”

### **Cross Pollinator: Jason Robert**

The four papers deal with more domestic issues and have interesting points of contact. They feature different domains of inequity in health and criminal justice, all with genetics as a primary frame. One issue is the framing of sources of inequity and solutions – the way you frame the questions suggests certain interpretations of the solution. Another issue is the problem of action. We need to examine the “how,” “what,” and “whether” to advance policies in the political process. All of the papers identify political will and the need to build it as an underlying problem in inequity issues.

### **Questions for each participant:**

Simon Cole: What are your predictions for the future of race based criminal justice given social inequity?

Gregor Wolbring: What do you think of the relationship between transhumanism and medicalization? What is social health and social well-being and the distinction you'd like to have as a focus? Could you explain more about the BIAS-free model at the end of the paper?

Dorothy Roberts: What should be done about Bidil?

Michael Montoya: Could you explain more about the five examples of policy options you list at the end of the paper?

### **Discussion Summary:**

Simon Cole predicts that in the future, race based criminal justice will increasingly involve behavioral genetics. Using behavioral genetics in criminal justice was formerly taboo due to political correctness, but may be more viable now because the obvious candidates for the technology – sex offenders – are not disproportionately represented by one race, but rather reflect the composition of the country. Also, there is currently a growing discourse on genetic and environmental factors with a greater focus on socioeconomics. The main opposition to a genetic database in the criminal justice system is the ACLU, due to privacy issues, as opposed to African-Americans, who seem to be more supportive of these technologies as a result of a few cases where innocent people were exonerated.

Dorothy Roberts believes that the two main problems of Bidil are its support of a biological definition of race and that it takes attention away from real social and environmental causes of health problems.

Gregor Wolbring explains that transhumanism shifts norms, turning what was once “normal” into subnormal, and that transhumanism is the extension of medicalization, a result of removing the “social well-being” component of the definition of health. The BIAS-free model is used to get people to understand their own biases.

Michael Montoya’s policy options address the weak points in the discourse on genetics and health including the failure to appreciate the process of knowledge production; the disconnect between assumed genetics and biology; inadequate informed consent; the social distance between the lab and the streets; and the inadequacy of genetic/pill/technological fixes.

The way questions are framed, whether the framing creates certain solutions or is itself dependent upon the solutions that are available, significantly affects the process and outcomes of examining social science questions., For example, in the case of Bidil, inequity is framed as a result of biological problems as opposed to social and environmental problems. In the case of diabetes, Montoya frames his question relating the inability to control blood glucose with the inability to control other things in life. The main point in examining both of these cases is the understanding that public health problems will not go away with private solutions, and social scientists who are conscious of the implications of context can frame problems so that science tends toward an equitable society.

Furthermore, the societies in which a technology is produced often have a much larger effect on the social outcome of a technology rather than the technology itself. Social constructions affect the production of knowledge, policies (e.g. ableism), and the framing of solutions to inequities. In order to work with social constructions, social scientists should be careful in the way they present issues and work to have other scientists do the same, as often the research question may be simplified into a social construction it does not address. One possible action point by social scientists is to work to highlight this issue, and, for example in the case of Bidil, work to require researchers to explain why they use racial/other identification in a particular study. Another form of action is to address the private industry which may encourage and reward the use of social constructions (e.g. patenting drugs for a specific race or gender).

### **Session III: Phainopeplas**

Kenneth Broad (& Nicole Peterson) – “Forms of Participation in Forecast Dissemination & Use”

Virginia Eubanks – “Popular Technology: Exploring Inequality in the Information Economy”

Nancy Campbell – “Can Science Serve Social Justice? The Consequences of Cutting Relevant Social Groups Out of Science and Technology Policy”

Steve Rayner – “Poverty, Technology & Disaster: Building Resilience and Recovery through Diversity”

## Cross-Pollinator: Rachelle Hollander

The theme for this session is issues of and for participation in science and technology policy. Broad et al. review relevant literature and use examples of Brazil and Uganda to illustrate that participation projects must be evaluated within their social context. Broad et al. also make suggestions for future research in participation, framing, overcoming biases, improving language, overcoming inaccessibility, and, overall, taking a closer look at social goods. Eubanks argues that distributive justice is the wrong way to look at inequity issues and, instead, the framework of power and oppression should be used. She also explains that overcoming inequity requires a positive agenda or program distinct from simply participation, as participation can increase responsibility without increasing power. Campbell asserts that “fair science” requires the participation of a wide variety of viewpoints. Rayner’s main point may be an exception to the theme. He suggests that the resilience of society to disaster events is better served by mechanisms to preserve plurality as opposed to a consensual process.

### Questions:

- 1) Do the groups that panelists have worked with provide the potential for developing better science and technology policy and better science and technology?
- 2) What counts as barriers to participation?
- 3) Do science and technology follow Helen Longino’s recommendations about public venues and uptake of criticisms?
- 4) What are the standards and proof of truth claims for our group?
- 5) Are some claims made by the group too grandiose?
- 6) How can we clarify the terms we use in discussions on science and technology policy?

### Discussion Summary:

According to Campbell, “fair science” requires that technoscience elites are a representative sample of humanity, that knowledge is not separated from users and context, that institutional forms and procedures in which counterpublics can object exist, and that science policy is not separated from social policy. A prominent method for achieving “fair science” is through participation, which has multiple intuitive and, in some cases, arguably proven benefits. These benefits include the ability to make more accurate claims about the world, develop more transparent ways for organizing science and technology policy, bring more ideas to the discussion, and reduce authority. Evidence of the benefits of participation include more successful global design teams such as those used in Philips and Hewlett-Packard, controlled undergraduate psychology experiments, and the successes reported by Virginia Eubanks with her groups at the Sally Catlin Women’s Resource Center in the YWCA of Troy-Cohoes.

An important identified aspect of participation is that generalizations about outcomes are very difficult and often inappropriate to make. Outcomes of participation depend on the social context as well as the participatory process, and different settings

can lead to very different outcomes. Therefore, when discussing the outcomes of participation, it is important to be specific and talk about specific cases.

Furthermore, a number of issues arise from the participation process. For example, when participation has the goal of consensus, diversity may be muffled and relevant issues to the problem may be overlooked. Also, participation may simply result in the reproduction of current social structure. Finally, there is evidence that participation that is not perceived as efficacious leads to disengagement.

A main difficulty is coming up with evidence for an effective participation process. In an attempt to address this issue, Broad et al. are working to create a decision support system to evaluate the different impacts of picking different groups. They will use focus groups based on surveys and ethnography with the goal of having more transparency.

#### **Session IV: Painted Redstarts**

Paul Hirsch & Barry Bozeman – “Beyond Tuskegee: Exploring the Pitfalls & Possibilities of Sci. Research with and for Vulnerable Populations”

Susan Cozzens – “The Distributional Ethics of Science and Technology Policies: Exploring Equity, Equality, and Community”

Ned Woodhouse & Dan Sarewitz – “Science Policies for Reducing Societal Inequities”

Jill Fisher – “‘Ready-to-Recruit’ or ‘Ready-to-Consent’ Populations? Informed Consent and the Limits of Subject Autonomy”

#### **Cross Pollinator: Carl Mitcham**

The focus for this session is policy, both its process and products, and the relationship between equity and policy. Hirsch and Bozeman question whether IRB procedures are adequate to protect groups from harm or to encourage research seeking to protect groups. Fisher is also concerned about groups and highlights examples when informed consent may be inadequate when faced with potential subjects’ needs. Cozzens takes a more philosophical approach to policy and illustrates the importance of distinguishing things like the differences between equity and equality. Sarewitz and Woodhouse identify four science policy outcomes that increase inequity and advocate a focus on the problems of the poor, the creation of public goods, reducing costs, undermining the well-being of the advantaged, and honesty about the real prospects of research. Our comparative advantage is that we consider how to guide the policy process and that we are seeking to promote equity and proper standard of appeal in the science policy formation process. One genuine contribution to transform debate in the scholarly world may be a collected work.

#### **Discussion Summary:**

Challenges to achieving equitable science policy include prevailing myths among scientists, policymakers, and the general public on social issues and how science works; institutions which reinforce inequities; and inequitable policy-making processes.

One prevailing myth held by scientists, policymakers and the general public about science and technology and science and technology policy is that science by definition is good and promotes equity and justice. Although multiple cases and current inequities reveal that this belief is not in fact true, it continues to justify science and technology with inequitable outcomes. Along the same lines, ingrained beliefs about race and ability also continue to shape inequitable science policies.

Social scientists have a number of methods to address these challenges. First, social scientists can educate scientists, engineers, and the general public about how science works and is integrated into society. Social scientists can also create different ways of viewing issues such as race and disability as well as counter narratives calling into question prevailing myths. In focusing on science itself, social scientists can analyze the values, worldviews and professional ethics of scientists and engineers and promote honesty in claims about research.

Another challenge is the institutions in which scientists and science policymakers must work with and around. For example, in the clinical research enterprise, even when researchers are following rules and behaving ethically, principles such as informed consent are overpowered by problems such as lack of access to healthcare. Further examples of inequities created by institutions and policies can be seen in the production of “me too” drugs and lifestyle drugs by pharmaceutical companies in lieu of treatments for diseases which affect developing countries. In the Grady Hospital case (Hirsch and Bozeman), the fact that the treatment (progesterone) could not be patented and the target population (people with brain injury) tended to be poor and African American, created significant obstacles to researchers. As Hirsch explains, when addressing these types of institutional challenges, social scientists must remember that it is inevitable that they deal with existing institutions and policies as they are, and therefore should be practical and political in choosing issues and finding allies. Hirsch proposes that social scientists work to create tool-kits that promote good intentions and help researchers evaluate ethical and equitable means and outcomes of research.

A final challenge is the policy-making process itself. Social scientists can promote equity throughout the process by developing relationships and partnerships with relevant players and advocating equitable action within the process. Michael Montoya gives an example of a model of change in his research on type II diabetes, in which he brings together representatives of diverse groups with vested interest in the issue including researchers, industry, community groups, and social scientists to develop equitable projects and action.

## **Session V: Synthesis and Next Steps**

### **Cross Pollinators' Comments:**

Carl Mitcham: All of the papers overlap, and one of the linking ideas is the quality of science involving truth and justice. Proposes a collective work.

Rachelle Hollander: We need to get beyond pronouncements and think about the relationship between policies and changing human behaviors and norms and institutional norms. We need to make alliances with social institutions and movements.

Jason Robert: We should think about a keyword project. This would involve picking a key word such as 'policy' or 'participation' and inviting individuals to discuss and flesh out the variety of meanings. Also need to pay attention to the way we frame questions and solutions and the roles of academics and activists.

Netra Chhetri: We all have a core commonality and interest and we need to capitalize on that core. If we want to advance our agenda, we need to back that up with good research findings.

### Future Meetings:

Participants put forward the following conferences/meetings as places where these discussions could continue:

James Martin Institute for Science and Civilization World Forum's next theme is 'Science, Technology and Inequality' in March 2008. The Forum will attract the attention of media and decision makers.

Website: <http://www.martininstitute.ox.ac.uk/jmi/>  
Contact: Steve Rayner

Conference at University of Michigan Policy School in connection with the Ford School International Poverty Center, Spring 2007

Website: <http://www.stpp.fordschool.umich.edu/index.html>  
Contact: Shobita Parthasarathy

Georgia Tech School of Public Policy Atlanta Conference on Science and Technology Policy bi-annual event: October 2007

Website: <http://www.spp.gatech.edu/>

Suggestion: Pharma and Bio meetings

### Questions and Comments:

Because not every issue or concern could be raised in the two day workshop, the meeting concluded with participants listing unresolved questions they think would help in developing solutions to the problems addressed:

What is your favorite science policy proposal for reducing inequity?

What would you advocate cutting back on and why?

How can issues of inequity be integrated into education (especially of scientists and engineers)?

What forms of interactions between scientists and disadvantaged/stakeholders (and in what context) will favor good and just science?

How can resources be provided to people closest to the problems to allow them to solve them themselves? How can we use our skills and resources to redistribute skills and resources?

How do differences in technologies influence different models of social change?

How do aesthetic characteristics of technologies affect equity?

What are the ways in which inequalities relate to each other and how does science relate to that connection? Do inequalities reinforce each other?

What are the ways in which STS can link to social movements and provide resources and information to them. How can scholars listen to social movements to better understand these needs?

What Which? technologies advance the equity agenda?

What are good technological fixes?

How can technologies be graded in terms of how they advance equity? How can one rate technological fixes?

Can you picture the path from what you are doing to making life better for the 'poorest' person you have encountered?

How can we understand technologies and their impacts and how to avoid doing harm?

How can we get a better understanding of the experiences of the poor so that we can understand what coping strategies and what technologies are relevant.

What drives the adoption of technologies by the poor? Why are some technologies adopted and not others? What types of opportunities are actually relevant to the poor?

What is "appropriate" technology?

Do the poor have special technology needs or are they the same, just unaffordable?

Can we develop a suite of "riskier" technologies that access the poor first?

What one step toward more global representativeness in the science and technology workforce would you advocate?

What do you get if you reveal the relationship between the production of knowledge and the poor?

Outside of science and technology policy, what change would you advocate to overcome inequity?

How is success defined? If you were guaranteed success, what would you try?

Is it possible to intervene to modulate the pace or extent of science and technology change selectively? There is an assumption that it's possible, but is that true? What are the factors that differentiate between successes and failures?

What one thing can be done to increase our capacity to intervene in the pace of science and technology?

What are the factors that condition the speed/pace/velocity of technological advance?

What are the arguments or reasons for promoting equality in some form?

If you had the audience of a company, how would you explain to them why promoting equity is important? Why is it in the interest of the company to deal with issues of inequity?

What are the forms of equality?

Where are the opportunities (in various networks, domains, levels) to fix the problem?  
Where do we locate ourselves?

Why do you care about social equality?

Can we develop an undergraduate reader that would introduce them to the relationship between science, policy, and inequities?

# **Workshop on Science, Policy & Inequities May 21-23 – Saguaro Lake Ranch, AZ**

**Sunday, May 21**

7:00pm – Dinner at the Ranch

**Monday, May 22**

8:00am – Breakfast

9:30am – Workshop Charge (Dan Sarewitz)

10:00 – **Session I – Magnificent Hummingbirds**

*∞ Cross-Pollinator: Netra Chhetri ∞*

Maria Carmen Lemos – Equity in Forecasting Climate: Can Science Save the Poor?

Peter Healey – ResIST - Researching Inequality through Science and Technology

Gregg Zachary – African Traditions Meet the Digital World

12:00pm – Lunch

2:00pm – **Session II – Vermillion Flycatchers**

*∞ Cross-Pollinator: Jason Robert ∞*

Simon Cole – How Much Justice Can Technology Afford? The Impact of Scientific and Technological Developments on Equal (Criminal) Justice

Gregor Wolbring – Which Inequality Matters?

Dorothy Roberts – Is Race-Based Medicine Good for Us? African-American Perspectives on Race, Biotechnology, and Equality

Michael Montoya – Genetic Admixture, Diabetes and Mexicana/o Ethnicity

4:00pm – Break

4:30pm – **Session III – Phainopeplas**

*∞ Cross-Pollinator: Rachelle Hollander ∞*

Kenneth Broad (& Nicole Peterson) – Forms of Participation in Forecast Dissemination & Use

Virginia Eubanks – Popular Technology: Exploring Inequality in the Information Economy

Nancy Campbell (rep. by Ned Woodhouse) – Can Science Serve Social Justice? The Consequences of Cutting Relevant Social Groups Out of Science and Technology Policy

Steve Rayner – Poverty, Technology & Disaster: Building Resilience and Recovery through Diversity

7:00pm – Dinner



## Tuesday, May 23

8:00am – Breakfast

9:00am – Kellogg Project Update (Barry Bozeman & Mary Feeney)

9:30am – **Session IV – Painted Redstarts**

∞ *Cross-Pollinator: Carl Mitcham* ∞

Paul Hirsch & Barry Bozeman – Beyond Tuskegee: Exploring the Pitfalls & Possibilities of Sci. Research with and for Vulnerable Populations

Susan Cozzens – The Distributional Ethics of Science and Technology Policies: Exploring Equity, Equality, and Community

Ned Woodhouse & Dan Sarewitz – Science Policies for Reducing Societal Inequities

Jill Fisher – ‘Ready-to-Recruit’ or ‘Ready-to-Consent’ Populations? Informed Consent and the Limits of Subject Autonomy



12:00 – Lunch

1:30pm – **Session V – Synthesis and Next Steps**

4:00pm – Adjourn

# **Participant Bios**

## **Science, Policy & Social Inequities Workshop**

### **Ira Bennett**

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Ira is a post-doctoral research associate at the Consortium for Science, Policy and Outcomes and the Center for Nanotechnology in Society at Arizona State University. He is studying policies and politics of emerging technologies, specifically nanotechnologies.

### **Barry Bozeman**

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Barry is a Regents' Professor of Public Policy at Georgia Institute of Technology and an Adjunct Distinguished Professor, Consortium for Science, Policy and Outcomes, Arizona State University. His research focuses on science policy and public management.

### **Jenny Brian**

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Jenny is a PhD student in the Bioethics, Policy & Law program at the Center for Biology & Society at ASU. Her research interests include public trust, innovation, and the commercialization of academic science.

### **Kenny Broad**

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Kenny is an ecological anthropologist at the University of Miami's Center for Ecosystem Science and Policy. He studies human-environment interaction related to natural resource management, including climate impacts and societal equity, in the U.S., Latin America, Caribbean, and Indonesia.

### **Nancy Campbell**

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Nancy is faculty in the Department of Science and Technology Studies at RPI. Her work examines how drug addiction researchers and treatment professionals navigate ethical dilemmas surrounding the rapid 'scientization' of addiction treatment technologies.

### **Netra Chhetri**

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Netra is a post-doctoral research associate at the Consortium for Science Policy, and Outcomes at ASU. His work focus on understanding the sensitivity of ecosystems to multiple stressors such as population growth, land-use change, pollutant loading, persistence of water-intensive agricultural systems, and climate variability and change.

**Simon Cole**

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Simon is an STS scholar at the Department of Criminology, Law & Society at UC Irvine. He specializes in the historical and sociological study of the interaction between science, technology, law, and criminal justice and is currently studying forensic science, the development of criminal identification databases, and biometric technologies.

**Susan Cozzens**

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Susan is a sociologist in the School of Public Policy at Georgia Tech. She examines issues in the area of science, technology, and inequalities, and develops methods for research assessment and science and technology indicators.

**Virginia Eubanks**

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Virginia is an STS scholar in Women's Studies at the University at Albany. Eubanks studies information technology and urban poverty in the United States.

**Mary Feeney**

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Mary is in the School of Public Policy at Georgia Tech. She has examined issues in corporate-led urban renewal and ways of institutionalizing responsible innovation at universities. Currently her work focuses on mentoring and public management.

**Jill Fisher**

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Jill is an STS scholar in Women & Gender Studies and CSPO at Arizona State. She studies the neoliberal trends in U.S. medicine by examining the privatization of clinical trials.

**Peter Healey**

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Peter is a sociologist at the James Martin Institute for Science and Civilization. His work examines criminology, issues in scientific governance and democratization, and international distribution.

**Nicole Heppner**

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Nicole is a research intern at the Consortium for Science, Policy, and Outcomes. She graduated from Arizona State University and will attend the University of Minnesota's School of Public Health in the fall.

**Lori Hidinger**

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Lori is the Program Manager for the Consortium for Science, Policy and Outcomes. In addition to managing the operations of CSPO, she participates in the development of new projects and on the research team for the Science Policy Assessment and Research on Climate Project.

**Paul Hirsch**

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Paul is in the School of Public Policy at Georgia Tech. Hirsch examines the tensions between promoting sustainability and equality in housing and other issues.

**Rachelle Hollander**

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Rachelle is the former Senior Advisor for the Directorate for Social, Behavioral, and Economic Sciences at the National Science Foundation.

**Maria Carmen Lemos**

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Maria is a political scientist in the University of Michigan's School of Natural Resources & Environment. She studies the human dimensions of global environmental change in Latin and South America.

**Merlyna Lim**

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Merlyna is a postdoctoral research associate at the Annenberg Center for Communication at University of Southern California and will join Consortium for Science, Policy and Outcomes at Arizona State University beginning fall 2006. Her work revolves around the political construction/shaping of technology, in relations to issues of globalization, identity politics and democratization.

**Carl Mitcham**

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Carl is in the Division of Liberal Arts and International Studies at the Colorado School of Mines. In general, Mitcham (in his words) "aspires to advance philosophical, ethical, and policy understanding within the relevant and overlapping professional communities in ways that may deepen democratic public intelligence."

**Michael Montoya**

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Michael is an anthropologist in UC Irvine's Dept. of Anthropology and Chicano/Latino Studies. He explores the new conceptions of racial and ethnic groups formulated through genomic sciences.

**Mark Neff**

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Mark is a PhD student in the School of Life Sciences at ASU and works with the Consortium for Science, Policy & Outcomes. He studies ecology and climate research policy.

**Shobita Parthasarathy**

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Shobita is an Assistant Professor and Co-Director of the Science, Technology, and Public Policy Program in the Ford School of Public Policy at the University of Michigan. Her research on the comparative and international politics of genetics and biotechnology focuses on how national context shapes scientific practice and technological development, even in an era of globalization.

**Zach Pirtle**

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Zach is an undergraduate senior at Arizona State University. He is majoring in mechanical engineering and philosophy and is writing his honors thesis within CSPO.

**Steve Rayner**

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Steve is an anthropologist at Oxford University's Said Business School and Director of the James Martin Institute for Science and Civilization. His work examines climate change and the governance of technological change under globalization.

**Jason Scott Robert**

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Jason is a philosopher of biology and bioethicist in the School of Life Sciences at ASU. He is interested in controversial science in its societal context.

**Dorothy Roberts**

Northwestern University

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Dorothy is the Kirkland & Ellis Professor of Law at Northwestern University. Roberts work encompasses issues related to families, welfare, race, and social justice.

**Daniel Sarewitz**

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Dan is a professor of science and society, and the director of the Consortium for Science, Policy & Outcomes at Arizona State University. He is interested in the ways that science policy rhetoric and decision making are related to real-world outcomes.

**Rachel Smith**

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Rachel is a research intern at the Consortium for Science, Policy, and Outcomes. She graduated from Arizona State University and will attend the Indiana University School of Medicine in the fall.

**Alice Warner-Mehlhorn**

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Alice is a Program Director at the W. K. Kellogg Foundation.

**Jamey Wetmore**

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Jamey is an STS scholar at the Consortium for Science, Policy & Outcomes at Arizona State University. His work explores the ways in which ideas of responsibility are (and should be) built into socio-technical systems.

**Gregor Wolbring**

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Gregor is a biochemist, a bioethicist, a disability/vari-ability studies scholar and a health policy, and sociology of Nano, Bio, Info, Cogno (Neuro-engineering) researcher at the University of Calgary. He is a member of the Center for Nanotechnology and Society at Arizona State University, USA. [www.bioethicsanddisability.org](http://www.bioethicsanddisability.org)

**Ned Woodhouse**

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Ned is a political scientist in RPI's Dept. of Science, Technology, and Society. He works in a variety of areas in science and technology policy and has recently examined the question of overconsumption.

**Brian Young**

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Brian is a research intern for the Consortium for Science, Policy & Outcomes and he is pursuing a post-baccalaureate in Biology and Society at Arizona State University. His studies focus on environmental ethics and policy.

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