



# STS TIMES

*The Newsletter of The Committee on Science and Technology Studies*

May 2009

[www.brown.edu/Faculty/COSTS/](http://www.brown.edu/Faculty/COSTS/)

Volume 2: Issue 2

## Anthropology Series

The Anthropology of Science and Technology Series, announced in fall 2008, brings anthropologists to Brown, to talk about their work, how cultural ideas inform scientific outcomes, and how people incorporate science in their daily lives. This is an exciting and growing field within social and cultural anthropology.

“So far we have heard from **Heather Paxson, MIT**, through her ethnographic research among artisan cheese producers, about how we



decide which microbes are good and bad, which are foreign material and which are just a part of our human makeup, which ones we can eat, and which ones could make us sick,” said **Professor Hamdy**, one of the organizers of the series.

“We also heard from **Stefan Helmreich, MIT**, about his new work on how the ocean is conceived, in the imagination of marine biologists and popular culture producers alike. The study of marine microbial life challenges the premises of hereditary evolution, as these entities defy the notion of “species” difference and quickly evolve via lateral gene transfer. The ocean is increasingly being understood, Helmreich argued, as an alien entity that harbors extreme life forms that could be the key to understanding our future.”



“We plan to continue the series through next year and see what other work anthropologists of science/technology have been up to!”

Sponsored by COSTS and members of the Anthropology Department; Stefan Helmreich lecture also sponsored by the Pembroke Center for Teaching and Research on Women and the Marshall Woods Lectureship

## STS Funding Awards

Congratulations to faculty and students who have been awarded funding for STS-related initiatives:

**Tara Nummedal**, Associate Professor of History, received two fellowships this spring to support her current book project, *The Lion's Blood: Alchemy, Gender, and Apocalypse in Reformation Europe*. The first, the American Council of Learned Societies Frederick Burkhardt Residential Fellowship for Recently Tenured Scholars, will allow her to be in residence at the Huntington Library in 2010-11; the second is the John Simon Guggenheim Memorial Foundation Fellowship.

In addition, **Professor Nummedal** and Science & Society concentrator **Alexandra Bachorik '10** received an UTRA (Karen T. Romer Undergraduate Teaching and Research Award: Summer Teaching Collaboration) to develop a course on “History of Medicine in Europe from Antiquity to the Enlightenment.”

The Superfund Basic Research Program, one of Brown's largest grants, has been renewed for five years. **Professor Phil Brown**, Environmental Studies and Sociology, is a member of the Internal Advisory Committee that runs the program, and directs the Community Outreach Core. The Community Outreach Core works in partnership with community groups, especially the Environmental Justice League of Rhode Island, the Woonasquatucket River Watershed Council, and the Environmental Neighborhood Awareness Committee of Tiverton, and will be starting a Community Environmental College to provide free courses to teens and adults on environmental health subjects.

**Lundy Braun**, Professor of Pathology and Laboratory Medicine and Africana Studies, received a grant as Principal Investigator, National Science Foundation Scholar Award, “Racialization of Spirometry: A Transnational Project,” July 1, 2009-June 30, 2010. This project explores the history of the development, application, and racialization of the spirometer, an instrument that measures lung capacity, in the US, South Africa, and Britain from the mid-19th century to the present. Specifically, she is interested in how changing concepts of racial and ethnic difference become attached to spirometry, creating a hierarchy of normality.

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## Faculty Steering Committee Members and News

- Lundy Braun, Pathology and Laboratory Medicine and Africana Studies
- Justin Broakes, Philosophy
- Phil Brown, Environmental Studies and Sociology
- Anne Fausto-Sterling, Molecular and Cell Biology and Biochemistry, Chair, COSTS
- Samuel Greenblatt, Neurosurgery and Neuroscience
- Sherine Hamdy, Anthropology
- Evelyn Lincoln, History of Art and Architecture
- Patrick Malone, American Civilization and Urban Studies
- Tara Nummedal, History
- Joan L. Richards, History
- Nicolás Wey-Gómez, Hispanic Studies

**Professor Nummedal** received a 2009 Guggenheim Fellowship, in Humanities - History of Science & Technology. Her project, "Alchemy, apocalypse, and gender in Reformation Europe," examines knowledge of nature – particularly alchemy – and its place in the society and culture of early modern Europe.

In addition, **Professor Nummedal's** *Alchemy and Authority in the Holy Roman Empire* (University of Chicago Press, 2007) received a wonderful review in the *Bulletin of the History of Medicine* 82:944-45 (Winter 2008).

**Professor Brown** received the Rachel Carson Award from Silent Spring Institute in May. Silent Spring Institute is a leading research institute with a strong community involvement in its work on women's health and the environment, especially around breast cancer. See [silentspring.org](http://silentspring.org) for more information.

In more news, **Lundy Braun** was promoted to full professor last year, and **Sherine Hamdy** will be a Pembroke Faculty Fellow next year.



## STS Alum



**Roger Turner** graduated in 2001 – a few years before Brown developed its official Science and Society concentration. With advisor **Joan Richards**, Professor of History, he developed an independent concentration in the History of Science. He also founded the Science Studies DUG in 2000.

His studies at Brown culminated in a thesis on "cloud seeding," a scientific technique for modifying the weather. After first learning about the topic in an environmental studies course with **Caroline Karp**, Turner won a Royce Fellowship, which funded his research in western Kansas. "Weather modification had just been outlawed there, replaying a similar controversy that had occurred in rural Pennsylvania back in the early 1960s," Turner says. "I interviewed farmers, meteorologists, and water managers, discovering that these controversies resulted from broken trust relationships, exacerbated by drought and scientific uncertainty. The farmers, understandably, did not want to yield potential control over precipitation to officials who they did not trust to have their best interests at heart. Weather modifiers interpreted this distrust as scientific ignorance, and stereotyped leading farmers as lazy 'coffee-shoppers.' The controversies then degenerated into an angry test of political strength, won by farmers who could persuade local government to outlaw cloud seeding."

This early work led Turner to the University of Pennsylvania, where he is currently a Ph.D. candidate in the History and Sociology of Science Department. His dissertation, titled "Weathering Heights," examines how aviation and meteorology co-evolved during the first half of the 20th century. Cartoons played a unique role, used in meteorological training for pilots during World War II, and then in television weather reporting. He first noticed these entertaining and educational images while going through his collection of old weather-related books acquired over the years through eBay. To see some cartoons used in meteorological training and hear Turner's commentary visit: <http://www.sas.upenn.edu/home/SASFrontiers/turner.html>

Turner is also involved in science policy through the American Meteorology Society, which runs policy program meetings in Washington D.C. Next year he'll be a fellow at the Air and Space Museum. He hopes to eventually teach history or environmental studies at a university like Brown.

### Emily Underwood '07 reports:

"I can't overemphasize how much the coursework I took in STS has guided the work I've been doing since graduating. STS allowed me to combine writing and other humanities courses with science courses, which helped me develop concrete skills that I have been able to apply to the workplace.

"For example, my first jobs out of college were a position as a composition tutor at a community college, and a freelance editor for UCSB Master's and Ph.D. candidates. I found that the interdisciplinary work I'd done at Brown had prepared me not only to teach basic critical thinking, but to help people obtaining advanced degrees in science communicate their ideas clearly and effectively.

"Next is a journalism internship for *High Country News* in Paonia, Colorado. I'm excited to apply many of the ideas I learned in STS to issues I was immersed in growing up in the West – water rights, mining, endangered species, drought. Hydrological predictions and the Bureau of Reclamation – now there's an imbroglio fit for Bruno Latour!"



# STS Q&A



An interview with **Anne Fausto-Sterling**, Chair of the Faculty Committee on Science and Technology Studies and Professor of Biology and Women's Studies.

She is joined by three senior Science & Society concentrators who took SCSO 1900 this year: **Kenneth Morales '09**, **Gabby Salazar '09.5** and **Carly Sieff '09**.

SCSO 1900 is a senior seminar for Science & Society concentrators, and is taught by Professor Fausto-Sterling. She used a problem-based learning approach this year. For an example of a problem presented in this course and student solutions, visit: <http://www.brown.edu/Faculty/COSTS/undergrad/>

## Q: What is problem-based learning?

**Gabby Salazar:** I think a lot of it has to do with giving students an opportunity to take a question that's more open-ended and find different solutions to it, as opposed to having a set lab manual, for instance, where they're expected to get specific answers, there's a road-map, and they have to follow exact steps. Problem-based learning is more of an open forum for exploring different solutions and not arriving at the same answer in each situation.

**Carly Sieff:** I think another technique involved is for the professor – instead of answering questions with statements, answering with more questions. It stimulates a curiosity.

**Anne Fausto-Sterling:** From my point of view it's setting up the structures so that student learning is active instead of passive. I got very tired of giving students assignments – which they would dutifully carry out – but where the whole impetus was mine, to figure out what the right assignment was, what was most important for them to learn, and guess what they might be most interested in.

So the idea was to give an open-ended assignment in which the students had to become really active in pursuing answers. I'd give a reading assignment and they would decide which articles were most important to read. From my point of view, it also provided more opportunity for creative things to happen. I also learned a lot more about what the students' skills and interests were.

**Kenneth Morales:** In other classes, in both the sciences and humanities, you often learn how to do something, or experience how other people do some task or activity, and then you practice trying to do it yourself. Something I really liked about problem-based learning is that we developed what the problem was. And because science and society is a new field we had more leeway to explore it ourselves. I also liked how we coalesced into these smaller groups of people who had similar interests.

**Fausto-Sterling:** Yes, by that time in the semester, we had begun to learn a fair amount about who was interested in what. There was

one group that was really interested in elementary education, another interested in performance, and another focused on technology and the Internet. And a number of you had activist commitments that became evident in how you carried out projects. I certainly learned more about all the students in the class than I would have in a more standard seminar.

## Q: Could you provide an example of a project?

**Morales:** One project was to see how people are reacting to the post-global warming heyday and what it means to “go green.” Groups within the class took different perspectives. My group looked at ideas of interconnectivity spurred by the Internet. One of us looked at how it was used as a network for small nonprofits; **Bochay Drum '09** and I looked at how the definition of going green was shaped by the Internet.

**Sieff:** I approached it from a political perspective and how the public gains its ideas of what it means to be green. We touched on specific government policies, but more a general look at how the current administration affects how we view the environment and the importance that the environment played in deciding who to vote for.

**Salazar:** We focused on the environment and alternative learning techniques and in formal education, especially using some of the STS journals, looking at different ways that children are being taught about the environment and are engaging in and with the environment.

**Fausto-Sterling:** It started out as this big topic, going green, and what it could mean. What they did in the end was come up with a final presentation in the format of a proposal for a special issue for a science studies journal on going green. They made up titles of articles that each of them would write, with an abstract and maybe a few references for each article so you could see what they thought the issues were, and it was partly in the form of a proposal to the editor of the journal. I thought that was a really cool way to bring it together.

## Q: Have you used a problem-based approach in other courses?

**Fausto-Sterling:** This is the first year I've taught SCSO 1900 this way. I also taught a different problem-based learning course this semester, “Gender, Race, and the Complexities of Science and Technology: A Problem-Based Learning Experiment,” part of the Boston Area Women's Studies Consortium. I'm teaching this with a colleague, **Peter Taylor, UMass Boston**, who has been experimenting with problem-based learning. His approach is much more open, much less structured, and involves more individual, not group, work. These are graduate students, so they're designing curriculum or a syllabus for a course, or proposing a grant application or something along those lines. As in SCSO 1900, people's individual skills and interests are coming out in really interesting ways.

## Q: Is this approach important for STS?

**Morales:** Definitely, in my own personal experience and in writing my senior thesis. It's a very particular time where this type of technology [Internet] is taking hold, redefining our ideas of human interaction in very grand ways. For me it's very important that we start to think outside of the disciplinary boundaries.



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**Films! Lectures! Discussions!**

## Humanities, Science and the Environment

The Committee on Science and Technology Studies, the Cogut Center for the Humanities, the Center for Environmental Studies and the Environmental Change Initiative at Brown are pleased to announce that the focus of the second annual Humanities/Science Project is the environment.

The Humanities/Science Project is a three-year collaborative program launched by COSTS and the Cogut Center, fostering critical conversations about life and knowledge. In 2008-2009 the focus was on the scientific and cultural history of evolutionary theory, in the 150 years since the publication of Charles Darwin's *Origin of Species*.

2009-2010 will feature an environmental film series as well as a four-part speaker series called "Nature and Legacy: Humanists, Scientists and the Environment." Panel discussions will include the topics of "Toxins," "Climate Change," and "The Loss and Return of Nature."

The film series premier and a list of speakers will be announced soon!

**A Special Two-Track Series for 2009-2010**

### Science and Society DUG

Thanks to organizers **Ken Morales '09** and **Carly Sieff '09**, who ended the year with a BBQ for STS students and faculty.

To find out about S&S DUG activities for '09-'10, contact: [Mark\\_Caine@brown.edu](mailto:Mark_Caine@brown.edu)

### Science and Society Concentration

If you're interested in learning more about STS at Brown, and whether a concentration in Science and Society is for you, check out our website and then contact **Professor Fausto-Sterling**:

[Anne\\_Fausto-Sterling@brown.edu](mailto:Anne_Fausto-Sterling@brown.edu)

### STS Funding Awards

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**Sherine Hamdy**, Assistant Professor of Anthropology, received two curriculum development grants. One is for 'Bioethics and Culture', and the other is for 'Ethnographies of the Muslim Middle East'. She also received an UTRA with Science and Society concentrator **Mark Caine '10** for course development in 'Theories and Controversies in Science and Society' and 'Bioethics and Culture'.

Through support from the Ford Foundation, **Anne Fausto-Sterling**, Professor of Biology and Women's Studies and COSTS Chair, is continuing a research initiative on "The Emergence of Sexually Differentiated Behaviors in Infancy: A Dynamic Systems Approach." The project argues that sex-typed behaviors are created through a process of dynamic interactions between children and their environment – both biological and social influences. In the next stage of the project, researchers will conduct detailed analyses of twenty infants, 10 boys and 10 girls, and their mothers, in weekly sessions. For more information about this initiative: [http://www.brown.edu/Research/Behaviors\\_in\\_Infancy/](http://www.brown.edu/Research/Behaviors_in_Infancy/)

