It was not so much a demand for redress of wrongdoing, such as organ theft, as an expression of resentment and jealousy, a breakdown of trust, a plea for recognition and respect. They wondered why their relationships with many of the scientists were no longer strong.

Learning from the Fore People

For his latest book, *The Collectors of Lost Souls: Turning Kuru Scientists into Whitemen*, Warwick Anderson headed out of the archives and into the highlands of Papua New Guinea. Against the background of his own experiences of research on the ground, Anderson highlights the ambiguous legacy of kuru, which brought to the Fore people Western scientists, temporary wealth, and tenuous connections with the outside world.

My helicopter landed on the decaying basketball court at Ivingoi mission a few months after the last kuru autopsy in 2003. At the time, raskols — the cute Pidgin word for very un-cute bandits — patrolled the only road from Goroka, in the eastern highlands of New Guinea, so flying over them seemed the safer route. It was an ostentatious arrival and 20 or so old men and children stood around watching closely. I felt uncomfortable, but it could have been worse; most adults were already in their gardens or doing other business, and so missed the entertainment.

Along with my research assistant, Tom Strong, a young anthropologist from Princeton who had lived nearby, I came to talk with the Fore (pronounced For-ay) people who once were afflicted with the fatal brain disease kuru. With support from the National Science Foundation, I was writing a history of the complicated and fraught investigations of this bizarre and tragic epidemic — from first contact with the Fore in the 1950s to the events of the past few months.

When whites first encountered the Fore, kuru was killing about one percent of the population each year, mostly women and children. At first, it looked strange enough to be comical, with peculiar twitching, failure of coordination, and dance-like movements, but it led inevitably to death. Through the 1950s and 60s, kuru (which means shivering or shaking) was disrupting communities, giving rise to sorcery allegations and payback killings, emptying villages of women and children. The Fore feared extinction.

In part, the kuru story is a tale of competition among scientists from the United States and Australia; animosity between Australian colonial authorities and maverick foreign medics; and, eventually, strained collaboration between virologists, anthropologists, and epidemiologists, leading to the discovery of the first human “slow virus” and the identification of cannibalism as the route of its transmission.
When George Sarton, Lawrence Henderson, and others established the HSS in 1924, their goal was the survival of Isis. As Isis nears its 100th volume, a milestone that would give Sarton deep satisfaction, and as the Society evolves, we see many changes in the HSS’s raison d’être. Some things remain the same. Members still receive Isis, but you can now choose to receive electronic and/or print copies of the journal, and you can view archived copies through JSTOR, back to the inaugural issue. Members also receive the Current Bibliography, a valuable resource for scholars, and several years ago, the HSS included Osiris (a serial of enormous use in the classroom) as a benefit. The quarterly Newsletter and the annual meeting foster collegiality, whereas the History of Science, Technology and Medicine Database, the premier bibliographic STS database, enhances research.

In addition to these benefits, membership services are an important part of the HSS, and toward that end the Executive Committee has worked tirelessly with the Executive Office to professionalize the Society. Although we still rely on our many selfless volunteers, part of this transition requires hiring experienced office professionals to create and maintain efficient operating systems such as accounting programs, databases, and Web sites. Our office and software needs are modest, but our people needs are vital to our success.

We are fortunate to have an endowment—an endowment built by Gerry Holton and many others—but we continue to rely on our members’ every-day generosity. With the conclusion of the campaign to endow the bibliographer’s position, we are now turning to basic support of the Society’s operations and hope that you, our members, will be responsive when you receive an appeal to support the Society. While we continue to welcome gifts to the various endowment funds, in the current economic climate we need to secure a strong economic position for the Society. We therefore invite you to contribute to the General Fund to support core functions such as graduate travel, enhancing our Web site, and outreach activities. We are grateful for your membership and feel that as a community we can make the HSS even stronger in ways that would make the founders proud. You may donate when you renew your membership, by going to http://www.hssonline.org, or by giving us a call—we are always eager to hear from you.

Jane Maienschein, President
Paul Farber, Vice President
Jay Malone, Executive Director

EDITORIAL POLICIES, ADVERTISING AND SUBMISSIONS

The History of Science Society Newsletter is published in January, April, July, and October, and sent to all individual members of the Society. Those who reside outside of North America pay an additional $5 annually to cover a portion of mailing charges. The Newsletter is available to nonmembers and institutions for $25 a year.

The Newsletter is edited and desktop published in the Executive Office. The format and editorial policies are determined by the Executive Director in consultation with the Committee on Publications and the Society Editor. All advertising copy must be submitted in electronic form. Advertisements are accepted on a space-available basis only, and the Society reserves the right not to print a submission. The rates are as follows: Full page (7 x 9.25"), $625; Horizontal or Vertical Half page (7 x 4.5"), $375; Quarter page (3.5 x 4.5"), $225. The deadline for insertion orders is six weeks prior to the month of publication and should be sent to the attention of the HSS Executive Office. The deadline for news, announcements, and job/fellowship prize listings is firm: Six weeks prior to the month of publication. Long items (feature stories) should be submitted eight weeks prior to the month of publication. Please send all material to the attention of the managing editor, Michal Meyer: michal@hssonline.org.

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**FIRST PERSON**

One of the best reasons to blog is that it offers a way to think about – and be attentive to – audience. It can help historians find out how presentations of the history of science that don’t rely on anachronistic assumptions are received and interpreted.

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**Why Blog the History of Science?**

The University of Virginia’s Benjamin Cohen discusses his motivations in blogging the history of science and the possible uses of blogs.

I co-author a blog titled The World’s Fair about the history of science, environmental history, science studies, and sometimes cannonballs or jokes about Einstein. Although many blogs affect the style of an online diary, The World’s Fair endeavors to be a cabinet of curiosity in hyperlink form, a by-product of my belief that all blogging should be understood along the Ayers-Onuf axis.

About that axis. Two historians began a call-in radio show earlier this year. One of them, let’s call him Ayers, considered it an opportunity to contribute to the public debate about current issues by discoursing on historical context – voting, race relations, the environment, what have you. His ambition was to offer greater nuance to issues of political and cultural import. The other, whom we shall call Onuf, thought that Ayers over-stated it. He’s doing the show because he likes talking about history, he’s interested in the conversation, and he enjoys spending time with his colleagues. If someone learns something, well, that’s almost incidental, but let’s not go overboard. Thus the Ayers-Onuf axis defines the range of motivations for engaging in academic topics beyond the campus confines. It hits at the very core of academic identity in democratic societies. On one side is the idealist, on the other, the realist. They both have fun, but they get there from different routes. Those who write a Web-log (“blog”) find themselves somewhere along that axis, either with the belief that they are generating and/or influencing public conversation or with the motivation to explore a given subject in depth.

This blog world (the “blogosphere”) is all part of Web 2.0. Along with podcasts, wikis, social networks sites, music hosting sites, and video hosting sites, it’s a world where users generate the content. This recent phase in Internet history is itself the consequence of recent technological possibilities, of new economic models for online content that took a decade to work out, and of the shift in work practices away from rooms and buildings, where colleagues interact, to individual computer desks and screens where interaction is mediated via a keyboard or touchpad. People spend a lot of time online. You may have heard.

Of the more than 100-million blogs on the Web (that’s not a typo), most are personal blogs, of the type where one may discover what new band little Timmy listened to after gym practice last night. Since many of the first blogs were of this type, many people still associate the term with a form of self-celebration. Others are corporate blogs – which might be considered advertisement – and media blogs – which might be considered plain old journalism except they are updated and revised and commented upon. Still others are genre blogs focusing on fashion or music, politics or NASCAR, science or history. Blogging about the history of science is a subset of all of this.
I started co-authoring The World's Fair in 2006 with a molecular geneticist at the University of British Columbia, David Ng. We'd met after he contributed science humor pieces to a Web site (McSweeney’s) I was at the time helping edit. We decided to team up to co-author the blog at a collective with (now) over 70 others at http://www.scienceblogs.com. We hoped to do an end-around to the two-culture quagmire by constituting the blog with various cultures from the start - he the scientist and developer of new models of science education and communication who, all the while, sought to write for a wider audience; me the former polymer researcher and current history-of-science and environmental-studies scholar who, all the while, harbored a literary interest in thinking about new discussion models. In common, we're also interested in audience and how Web readership helps calibrate our own sense of how others read, reply, and interpret discussions of science on the Web.

Our tagline is “All Manner of Human Creativity on Display.” The central premise of the site is to offer a place to illuminate expressions of wonder, curiosity, and imagination in culture writ large, historically or today. Those expressions come about in many forms and, historically, some have come to be called scientific, some labeled artistic, some categorized as poetic or literary or otherwise. The visual metaphor guiding us is a thick cultural garden out of which sprout those different ways of seeing and making sense of the world (as opposed to a side-by-side positioning of two monolithic forms of inquiry, the scientific and the otherwise). The blog’s metaphysics stem from that vision — that interpretations of the world come from particular cultural contexts that merit attention and that fascinate or inspire us.

Seed magazine, whose tagline is “Science is Culture,” sponsors the site. They hope to sell magazines from it. The majority of their bloggers are scientists and graduate students in the sciences and medicine. Several are journalists. A few are philosophers. At least one other, John Lynch, is a historian of science. There are history of science blogs beyond the small corner of the scienceblogs collective, some of which are very well done, more direct in their discussions of the history of science, and good examples of creative engagement with the material and import of the work HSS members do. Some are insider blogs, looking mainly to give space to conversations otherwise left at the seminar door rather than to spread the word to others. Other Web 2.0 examples — Elizabeth Green Musselman’s “The Missing Link” podcast is a notable one, as is the 24-part CBC interview series “How To Think About Science,” and Audra Wolfe’s “Distillations” from the Chemical Heritage Foundation (all discussed in the HSS July 2008 Newsletter) — help form the background of new ways to talk, and hopefully to think, about science in historical context.

[Note: The text continues here.]

Why do it? Beyond talking about things differently, beyond the opportunities of a more relaxed, less regimented, and more flexible forum, why blog? I'll choose my words carefully here: I don't know. Personally, I'm caught sliding back and forth on the Ayers-Onuf axis. Some folks enjoy playing piano, or mountain climbing, or crafting scale-sized replicas of antique furniture. For my sake, I enjoy writing — about the environment, about science, about history, about the future. I've written a series of science humor pieces for McSweeney's and published interviews with historians and philosophers of science for a monthly periodical (The Believer). Those non-blog examples of talking about the history of science in different ways go along with The World’s Fair. They're fun. They require no justification. They're purely Onufian.

Yet blogging about the history of science has a close alliance with my professional activities and as such is not the equivalent of shellacking a two-inch Bourbon armoire. It has pedagogical value — I've been able to use sources and posts from blogs to supplement material in class. It also helps my research — I use the site to post notes and links as a kind of electronic set of note cards, compiling stories about a given topic. Such an approach helps me develop new research questions. It has value in examining thoughts on relationships among and between science and society — i.e., to see what assumptions are challenged by readers who are not science studies scholars. One of the best reasons to blog is that it offers a way to think about — and be attentive to — audience. It can help historians find out how presentations of the history of science that don't rely on anachronistic assumptions are received and interpreted. In these examples I'm more Ayersian, with a quiet belief that discussing historical contingency might help people see the contingencies of our own age.

There are some questionable reasons to blog, as well. These include the claim that writing a blog will directly change the public conversation; that more readers, as measured by page views at a blog, equates directly with greater public understanding; or that the mere circumstance of more text on the Internet somehow means we all know more. I remain respectfully skeptical about such claims. Underlying them is a latent technological determinism — that the fact of an Internet connection and html code will somehow lead directly and unproblematically to more democracy or more community or a more nuanced understanding of the relationship between relativity and Weimar culture. Having more information is just as likely to decrease deeper engagement in issues as it is to increase it. Here we are with the depth vs. breadth issue: i.e., who can keep up with all of it?

Two efforts at The World's Fair in the past year highlight how I've attempted to negotiate the A-O axis and avoid the pitfalls of blogs. The first is a series called author-meets-blogger. Here, I've
had the good fortune to corner authors of recent books in the history and social studies of science and the environment for discussions of those books.1 The second is a 14-part series of mini-essays on the theme of visual evidence, epistemology, and truth. It was instigated by intertwining three readings I happened upon simultaneously: first, a series by the documentarian Errol Morris, ostensibly about some famous 1850s photographs of the Valley of the Shadow of Death in the Crimean War (these were posted at his own New York Times blog); second, Lorraine Daston and Peter Galison’s new book, Objectivity; and third, Richard Powers’ first novel Three Farmers on Their Way to a Dance (1985). The three readings appeared to me as contributions to a much larger conversation on science, knowledge, and society.2 The blog offered the unique creative opportunity to discuss examples of creative opportunities.

Both examples came from Onufian impulses, yes. But I’ll own up to the Ayerian ones still lurking underneath, because the two efforts above are about showing, not telling. Rather than making a claim that science is neutral or not, that Darwin was great or wasn’t (spoiler alert: he was), I’ve sought to show examples of what historians actually find in their empirical work. Often the science corner of the blogosphere is filled with combative and counterproductive arguments with readers – good for ratings, bad for civic-minded conversation. Instead of mere assertion, one might instead use the blog space to offer images of science as a historically and culturally embedded enterprise.

Lurking beneath all of the above is the time-honored debate about influence, readership, and scholarly purpose. I take this as the point broached by Robert Kohler, et al. in their Isis focus section on “The Generalist Vision” (Vol. 96, No. 2, June 2005); I take it as the reason for the questions Jan Golinski, et al. raised on what we could learn from historical novels (Isis, Vol. 98, No. 4, December 2007); and I take it as the issue again brought to the fore this past summer on what difference the history of science makes (Isis, Vol. 99, No. 2, June 2008). Roughly speaking, the first focus section was about the audience; the second was about how we address the audience; and the third was about why. In my experience, blogging about one’s work and other areas of interest or intrigue has the chance to represent the curiosity of historians of science across this range of who, how, and why.

To add a note of caution: a friend observed in a recent conversation about the online world that discussing intellectual things in the public sphere does not make one a public intellectual. This points to the possibilities and difficulties of an individual blogger – namely the low barrier to entry – and confronts the over-statement that blogs will somehow change the intellectual dynamic of public conversation. But I wouldn’t worry about it. Blogging about the history of science may not be revolutionary, but it could be an arena to explore one’s passion for historical inquiry. It could and likely will do much more too, but I’ll leave that for others to point out. In the best light, and from my particular experience, blogging can help historians-as-writers calibrate their sense of audience and learn more about the assumptions at play on the other side of the text. Plus, you know, lots of people do spend considerable time online.

Benjamin Cohen will be participating in a workshop on electronic scholarship at the HSS Annual Meeting. As for his own research, his book, Notes from the Ground: Science, Soil, and Society in the American Countryside, will be published next year by Yale University Press.

Join the discussion online at The World’s Fair (http://scienceblogs.com/worldsfair/). And find these related links, too: The Cannonball posts: http://scienceblogs.com/worldsfair/2008/01/scientific_objectivity_has_a_h.php; Author-meets-blogger: http://scienceblogs.com/worldsfair/the_book_building/author_meets_bloggers/

1 Among the dozen plus so far, Jan Golinski, Graham Burnett, Gregg Mitman, Michele Murphy, Michael Egan, and Aaron Sachs have contributed thoughtful, summative, and accessible discussions of their work for an audience of science enthusiasts who very likely would not have come across this work otherwise.

2 I’d add that the series took five months, was a point of increasing enthusiasm, influenced my thinking about my own new research project, and, due to its organic and unplanned development, could not have been written in any other manner or form.

**History of Modern Science or Technology Position at OSU**

The Department of History at Oregon State University invites applications for a tenure track assistant professorship in the History of Modern Science or Technology starting September 15, 2009. Area of specialization is open within the history of science or technology in the Modern Period (18th-21st centuries). Ph.D. should be completed by June 2009. Teaching responsibilities will include undergraduate and graduate courses as well as participation in the graduate program in History of Science (MA and Ph.D). Candidates should demonstrate a serious commitment to both scholarship and teaching. Preferred qualifications include a demonstrable commitment to promoting and enhancing diversity. For more information about the department visit the website at http://oregonstate.edu/cla/history/. To review posting and apply, go to http://oregonstate.edu/jobs. You will be required to submit electronically a letter of application describing your experience, qualification and interest, curriculum vitae, and evidence of teaching experience. Three letters of recommendation should be sent separately to Mina Carson, Chair, History of Science Search, Department of History, Oregon State University, 306 Milam Hall, Corvallis OR 97331-5104. Review of applications will begin October 15, 2008 and continue until the position is filled. OSU is an AA/EOE.
Unavoidably, it is largely the story of D. Carleton Gajdusek, a prodigiously talented and troubled scientist whose commitment to his beloved "primitives" drove efforts to understand the disease. Gajdusek won the Nobel Prize in physiology or medicine in 1976 for discovering the slow virus, which also seemed to cause Creutzfeldt-Jakob disease (CJD) and other puzzling neurological conditions, though he never isolated the agent. Years later, Stanley Prusiner, who visited the Fore in 1978 and 1980, would argue provocatively that a deformed pathogenic protein, which he called a prion, caused spongiform encephalopathies like kuru, CJD, and "mad cow disease." His Nobel came in 1997. The tragic story of Fore suffering is thus a remarkable tale of scientific discovery.

I first heard about kuru as a medical student in Melbourne. Many of my teachers had been to New Guinea to investigate the disease and they liked to impress us with the picaresque adventures of Gajdusek, with whom they had engaged if not exactly collaborated. Later, as a graduate student at Penn, I read Gajdusek's vivid journals and thought about telling the kuru story. Around 2000, I began interviewing more seriously the scientists and anthropologists involved in the research. They are still a close-knit group, sometimes fractious, other times very protective of one another. Many of them evidently still suffered from what Gajdusek called the disease Europeans catch from studying kuru. In any case, it soon became clear that I also needed to talk with the Fore, especially with those who assisted the scientists, to get a full picture of activities and interactions in the field. Hence my 2003 trip to the eastern highlands, south of Okapa.

Jerome, a lanky Englishman who was one of the few remaining field investigators, ran up the hill to greet me and bring me to the new kuru research project house. There I met Anderson, the main local organizer of kuru research, the key intermediary, who told me he would look after me for the following weeks and find me informants, mostly the old men who once worked with the scientists. In typical Fore fashion he bluntly told me that if I did not like this arrangement I could "piss off." He smiled as he said it. In fact, I was pleased he would get people to talk to me from the first day, even if the version of events I heard might be filtered and distorted in some way. From the start, I felt happy working with Anderson. Within a few minutes, we were both commenting on the strange coincidence of being namesakes and age-mates, which imply significant affinities in Melanesian culture.

Over a cup of tea, Anderson expressed disapproval of the generosity of an anthropologist who had passed through the region a few months earlier, and he warned me not to inflate the price of stories. If I planned to behave like a "white man," he said, I should find the satellite phone and call back the helicopter. For when people like me do anything "heavy," he was the one who suffered the consequences. I later realized he was still trying to clean up the big mess resulting from the last kuru autopsy.

During the following weeks we settled in at the Open Bible mission, fetching water from the well, brewing copious pots of tea, chewing on thick "Highway Beef" crackers, cooking the kaukau (sweet potato) bought along the roadside, and for special occasions preparing the tinfish and rice we had carried in. Sometimes I chatted with the Open Bible pastor, a Fore who had trained in Iowa. Each morning, Anderson appeared with another old man for me to interview and each afternoon—when the mist enclosed the house and the rain began—he left for his own village of Waisa. Each day was full of curious visitors. Everyone wanted to tell his story and to have his name attached to it. Everyone needed to explain his crucial contribution to kuru research. Everyone asked for more compensation, now a New Guinea convention.

After a few days at Ivingoi, Tom and I decided to walk to Okapa. The winding road was muddy and steep in places. Soon we acquired a retinue of a hundred or so children, who expressed surprise at seeing white men walking and carrying packs. Some of the younger ones appeared frightened when the adolescents teased them, telling them we were ghosts. The braver ones wanted to touch our skin. At the end of three or so hours of hard walking, we arrived at the dilapidated station. It was market day and hundreds of Fore clamored around us. I found a grassy clearing and sat down next to a solitary, proud old man. Piles of fruit and vegetables accumulated in front of me. Eventually, the old man leaned over and told me he was Masasa and that he had come from Yagusa to talk with me. I asked him from Gajdusek's journals, but Anderson had been "unable" to find him. Among other things, Masasa needed to tell me that he never received adequate compensation for his research work.

Along the track, Fore would come up to me and ask about English kuru. Someone told them kuru was afflicting another people. But how, they wondered, had these other people learned the correct techniques of kuru sorcery?

The following week we trudged over the divide and down to Purosa. Some boys we met along the way, trying to kill birds with slingshots, warned us about the sorcerers at Kamira. Without
Anderson again, I sought out Turi, the scrawny, bashful son of one of Gajdusek's most cherished assistants. Wearing his T-shirt emblazoned with "Hair Dressers are Creative Professionals," Turi found some of his father's friends and helpers. For a few days, we talked with the old men, sweaty in their second-hand clothes, crouching or lounging on the floor of the aid post, leaning against the pastel murals. They told us about odd white men who collected stories, banged away at a machine, did some sort of dance called an examination, shone lights into eyes, took blood and other specimens — but all of it proved very disappointing as conjuring or divination, and kuru continued. We heard about rushed bush autopsies and vexed negotiations over the possession of body parts. The character of exchange relations in the field was never clear, no one could be sure just what was entailed in these transactions and whether they were entering into moral peril.

At night, we stayed at an empty house on the local coffee plantation. The next morning, I planned to climb six hours or so up to Agakamatasa, the most isolated Fore settlement and once Gajdusek's home, the rain poured down. Tired, sunburned, scratching my fleabites, I reluctantly decided to return to Ivingoi. I worried that tropical ulcers were developing where leeches had broken the skin and I seemed to have acquired some lice. In any case, I had heard rumors that Agakamatasa was in mourning and no one in the village would talk with me.

Clinging to the eastern margins of the highlands, the Fore region is still a poor place, with few pigs and sparse material culture. Though promising much, coffee production has delivered little. Most plants are abandoned — and anyhow it is hard to get the beans past the naskols. Little cash circulates, even at the roadside stalls and trade stores. There are, however, more aid posts than elsewhere in the highlands, a legacy of kuru.

When I was there, everyone was talking about compensation. A sort of postcolonial melancholy pervaded conversations, a sense that as individuals and as a people they were unfairly excluded from globalization and its presumed rewards. Kuru research once led development of the region: the roads were kuru roads; the fibro buildings, kuru buildings. Kuru investigators supported the schools. Kuru brought "cargo." But fewer resources now came down the track from Goroka and less was happening. It seemed the white men they collected — their white men — had let down the Fore. Yet a desire, a yearning, had been stimulated or amplified. White men came and went, got bigела prizes and perhaps plenty of money, and left the Fore people with demands unmet and expectations dashed. Now everyone wanted more compensation, especially some of Gajdusek's former assistants. A few even wrote to him, but he replied he was a poor man, living in exile from his own country. They did not believe him. Instead, they harangued Jerome and tried to take out their frustrations on Anderson. It was not so much a demand for redress of wrongdoing, such as organ theft, as an expression of resentment and jealousy, a breakdown of trust, a plea for recognition and respect. They wondered why their relationships with many of the scientists were no longer strong.

Around him, Anderson saw nothing but signs of disappointment and decline. "Now we see that money is changing everything, its value extends to everything," he lamented. "That kind of idea has come along and 'fouled' the ideas of many men." With everyone striving for money, nothing much remained to hold the community together. Ceremonial exchanges were dwindling. People claimed individual ownership of things that once were public goods. As he said this, I thought of the scientists in San Francisco, London, and Bethesda in their exciting new economy, with their patents and biotechnology companies. Anderson could have been talking about the transformation of the scientists' economy too.

After a few weeks among the Fore, I found that I became involved in their lives, though never as intensely as scientists and anthropologists once were. Since then, I have managed to stay in contact with Anderson and some others, seeing them in Goroka, the provincial center, or Port Moresby, the decrepit capital of Papua New Guinea. In 2007, I caught up with 20 or more Fore at the End of Kuru meeting at the Royal Society, London. Amazingly adaptable, they showed no sign of jetlag or apprehension about the big city. Visiting some churches after the meeting, Fore enthusiastically instructed accompanying scientists and anthropologists on Christian iconography.

One afternoon, over a few pints of ale in a pub off Russell Square, Anderson suggested some changes to the book I was writing. The subtitle was bothering him. It was "Turning Whitemen into Kuru Scientists," but Anderson pointed out it had been the other way round; Fore had transformed the scientists into their whitemen, at least for a short time. So I changed the title.

Warwick Anderson with Masasa at Okapa. Masasa told Anderson that he never received adequate compensation for his research work.
**NEWS AND INQUIRIES**

**Assigned Reading: HSS Co-Plenary will have Precirculated Papers**
The HSS Co-Plenary Roundtable: Climate Change Science, Environmental Challenges, and Cultural Anxiety (T1) will have pre-circulated discussion papers posted by 6 October at http://www.colby.edu/sts/hss2008climate. The participants Marilyn Gaull, Vladimir Jankovic, Matthias Dörries, Spencer R. Weart, and Roger D. Launius will then discuss their work with the audience, but will not be presenting traditional lectures.

**New Program at York University**
York University has developed and proposed a new Graduate Program in Science and Technologies Studies. The Program is still pending OCGS approval. If approved, the Graduate Program in Science and Technology Studies will offer advanced training leading to the M.A. and Ph.D. degrees. The program's mandate will be to produce graduates equipped to utilize the rich tools afforded by interdisciplinary scholarship in science and technology studies, with an emphasis on four fields: Biosciences and Biotechnologies; Human-Machine Interactions; Public Science; Physics Systems. For more information see http://www.yorku.ca/gradstsl, or contact Professor Bernard Lightman (lightman@yorku.ca; tel. 416-736-2100 ext. 22028).

**Encyclopedia of World History**
ABC-CLIO is developing a comprehensive 21-volume Encyclopedia of World History, and is looking for scholars to prepare 200-1,500 word articles with a global perspective in the area of the History of Science, Medicine, and Technology. We require that contributors hold a Ph.D., ABD or have recognized expertise in the field. For a complete listing of open topics, visit: http://www.abc-clio.com/academic/aboutus/caltToAuthors.aspx.

**Adler Planetarium Archives Open for Researchers**
The Adler Planetarium Institutional Records are now available to researchers. The collection documents the history of the Adler Planetarium & Astronomy Museum, which opened in 1930 as the first planetarium in the Western Hemisphere. The collection is open to researchers by appointment only. For further information see: http://www.adlerplanetarium.org/research/collections.

**Call For Contributing Writers**
M.E. Sharpe, a New York-based academic and reference publisher, and East River Books, a reference book producer, seek contributing scholars for a four-volume illustrated reference work on the history of science and technology from prehistoric times to the present. Contact Encyclopedia of Science, Technology, and Society Discovery at assistant@encyclopediawebsite.com.

**Darwin at the Huntington**
“Darwin's Garden: An Evolutionary Adventure” (until 5 January 2009 at the Huntington Library West Hall) explores the botanical influences on Darwin. The exhibition includes rare books, manuscripts, and prints from the New York Botanical Garden's collection and loans from private individuals.

**MEMBER NEWS**

Nicholas Dew (McGill University) and H. Darrel Rutkin (Stanford University) are both 2008-2009 fellows at the Dibner History of Science Program.

Jan Golinski (University of New Hampshire) is the 2008-2009 Distinguished Fellow in the Dibner History of Science Program at the Huntington Library.

Anita Guerini has moved from the University of California, Santa Barbara to Oregon State University as the new Horning Chair. Michael Osborne is moving from UCSB to OSU to take up a position as professor of the history of science.

Robert D. Hicks recently assumed the directorship of the Mütter Museum/Historical Library and the Measey Chair for the History of Medicine at the College of Physicians of Philadelphia.

Susan Lanzoni, Visiting Scholar at the STS program at MIT, has received a NSF Scholar's Award in the History of Philosophy of Science to research the “Emergence of Empathy from Aesthetics to Psychiatry,” exploring empathy’s late 19th-century German origins to its translation into Anglo-American experimental psychological circles.

James Strick was awarded tenure and promoted to Associate Professor & Chair of the Program in Science, Technology and Society at Franklin and Marshall College.

Zuooye Wang (California State Polytechnic University, Pomona) is the 2008-2009 Hixon-Riggs visiting professor in science, technology, and society at Harvey Mudd College. His book, In Sputnik's Shadow: The President's Science Advisory Committee and Cold War America, was published July 2008.
and institutions. Selections from The Huntington’s collections will include *The Botanic Garden* (1791) by Darwin’s grandfather, Erasmus Darwin; Robert Hooke’s *Micrographia* (1665), which features drawings of the first microscopic views of plant cells; and James Bateman’s *The Orchidaceae of Mexico and Guatemala* (1837–43). For information, visit http://www.huntington.org.

**Grand Opening: Dibner Hall of the History of Science**
The Huntington’s new Dibner Hall of the History of Science will open on 1 November 2008. Drawing on The Huntington’s rich archive of rare books and manuscripts, Dibner Hall’s permanent exhibition, “Beautiful Science: Ideas that Changed the World,” will tell the story of how scientific knowledge has been modified, improved on, and in some cases drastically undermined in the quest for a more accurate understanding of the workings of the universe. In four sections – Astronomy, Natural History, Medicine, and Light – the exhibition presents books, illustrations, manuscripts, and instruments that show the elegance of scientific endeavor. The hall is named for Bern Dibner, founder of the Burndy Library, a collection of more than 67,000 volumes on the history of science and technology, given to The Huntington in spring 2006.

**Kranzberg Graduate Fellowship**
The Kranzberg Graduate Fellowship (The School of History, Technology and Society at the Georgia Institute of Technology) will supplement the usual stipend for students accepted with full funding into the Georgia Tech program (currently about $14k annually) with an additional $5,000 per year, plus a tuition waiver for four years. When applying, please indicate if you are only interested in this fellowship, or if you also wish to be considered as an applicant to the program with the regular stipend. For further information on the graduate program, and this fellowship, contact the Director of Graduate Studies, john.krige@hts.gatech.edu. Deadline for applications is 1 February 2009.

**Inventory of Vallisneri’s Correspondence**
The Italian physician and naturalist Antonio Vallisneri (1661-1730) was at the center of an impressive intellectual and scientific network (over 12,000 letters from around 800 correspondents). Thanks to his correspondence, this network can be investigated in detail, to a degree which is rarely achievable in studies on modern science history. A central archive with reproductions (microfilms, paper copies or digital images) of each letter is being made up in Milan. The archive can be accessed online at: http://www.vallisneri.it/inventario.shtml (in Italian). In order to complete the inventory the Edizione Nazionale delle Opere di Antonio Vallisneri needs the contribution of the scholarly community and would be grateful to anyone for information concerning any still unknown collection of Vallisneri’s letters. Information should be sent to – or requested from – the inventory manager, Ivano Dal Prete (eldalpre@tiscali.it), or the scientific director of the National Edition, Dario Generali (dario.generali@tiscalinet.it).

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**NEWSBRIEF**

For a calendar of Philadelphia area events in HPSTM go to http://www.pachs.net/events.

The Fall 2008 STS seminar series of the Science & Technology Studies Program at York University (Toronto Canada) is now available at http://www.sts.yorku.ca.

A new program at the National Science Foundation is supporting projects on gender and the physical sciences. See: http://www.nsf.gov.

The Science and Technology Caucus at the American Studies Association sponsored a number of panels at the ASA meeting in Albuquerque, NM, 16-17 Oct. 2008. For the complete program see: http://asa.press.jhu.edu/program08/.

The New York Academy of Sciences Section for History and Philosophy of Science and Technology’s 2008-2009 schedule of meetings is now available. All lectures begin at 6:00 p.m. and will be held at: The Graduate Center, CUNY, 365 Fifth Avenue, New York, NY 10016. For additional information, contact Joseph W. Dauben, jdauben@gc.cuny.edu, at least one week in advance of any lecture you plan to attend.

For the latest list of recent doctoral dissertations in STS go to http://www.hsls.pitt.edu/guides/historymedl/researchresources/dissertations/index.html.

A new Web site highlights the papers of six Drexel presidents covering the period from 1913 to 1963, and documents Drexel’s transition from a small technological institute to a major research university. It also sheds light on the impact of World War II on what was taught in the classroom and the evolution of opportunities available to women. For more information visit: http://www.library.drexel.edu/archives/collections/presidents/index.html.
Guggenheim Fellowships

In the July 2008 Newsletter, we offered profiles of Ken Alder and Michael Bess, two of the seven 2008 Guggenheim Memorial Foundation Fellows whose projects are connected to the history of science. The remaining winners will be profiled in the upcoming issues.

Alice Dreger is Professor of Clinical Medical Humanities and Bioethics in the Feinberg School of Medicine of Northwestern University in Chicago. Dreger is working on a book project on science and identity politics in the Internet age.

I wrote my dissertation in History and Philosophy of Science at Indiana University on the scientific and clinical treatment of people labeled hermaphrodites in France and Britain, focusing on 1868-1915. When I started publishing that work in 1995, people who had been born with sex anomalies began asking me to help change the contemporary medical treatment system, a system they felt had harmed them. Listening to their stories, I learned that the medical system was suffering from a 1950s hangover; it featured sexist and heterosexist reasoning, lacked an evidentiary basis, and sometimes even included active deception of patients regarding their own medical histories.

I ended up spending the next decade working on intersex advocacy, helping to lead the Intersex Society of North America (ISNA) and the intersex rights movement. Through my scholarship, but also through a lot of international media and Internet work, i.e., through a lot of politicking, I helped force a shift in patterns of care. We also changed the public understanding of intersex, from a hidden medical shame to a relatively common variation and identity. I never thought, when I was writing my dissertation, I'd end up on Oprah, but Oprah is part of what it takes to move a culture on an issue like intersex.

In early 2006, a colleague introduced me to J. Michael Bailey, a sex researcher at Northwestern University (where I was then a visiting professor). Bailey, I knew, had been involved in an extremely ugly controversy over a book in which he argued for an unpopular view of male-to-female transsexualism, one that claimed it is not primarily about gender identity, but about erotic orientation. Some of the people I had met through my intersex work had been strong critics of Bailey. Yet, in person, Bailey did not match the very negative reputation he had in queer activist circles. Intrigued, I started to look into the Bailey book controversy, and ultimately decided to write a history of it. That book-length history was published as a target article in Archives of Sexual Behavior along with 23 commentaries and my response to the commentaries.

In doing my research, I was shocked to find that a small number of Bailey's critics had made very serious charges against him that were essentially groundless. They had come close to ruining Bailey's reputation and career because they didn't like him popularizing a theory about them that they despised. After my findings were covered in the New York Times, Bailey's critics started to come after me in the same way they had against him. One—a highly distinguished professor named Deirdre McCloskey—even claimed Bailey paid me to do the work.

The conglomeration of these experiences has made me fascinated in what happens when identity politicians and researchers clash. I am sympathetic to both sides, having lived in some ways on both sides. So the book I'm working on now, under the auspices of my Guggenheim Fellowship, considers the Bailey book controversy (including attacks on my work on it), the intersex rights movement, and a number of other instances of identity-politics-meeting-research, to explore questions of what does, could, and should happen in such instances.

Susan S. Silbey is the Leon and Anne Goldberg Professor of Humanities and Professor of Sociology and Anthropology, Massachusetts Institute of Technology.

My plan is to work on a book, Governing Green Laboratories: Trust and Surveillance in the Cultures of Science, describing the introduction of environmental, health and safety management systems into research laboratories. This is an effort to explore a confrontation between the authority of law and the authority of science, and to do so in the very heart of science: in the laboratory.

In many ways, scientific spaces are no different than most others, equally saturated with health and safety regulations, employment and financial regulations, susceptible to claims of loss and liability. Yet, I am
discovering through my research that for scientists, who are authorized and insulated by layers of education and expertise, the law that is there has been, until recent years, largely unnoticed and inconsequential, not at all the colonizing, contradictory institution described by most citizens. I began to wonder: how do scientists respond to recently passed laws and regulations that disrupt their usual practice by requiring them to change laboratory routines, complete new training and yearly retraining, and submit to periodic surveillance of laboratory practices in the name of environment, health and safety? And, what would this tell us about the universal aspirations of the rule of law?

Using data from five years of participant observation in five science departments of a major American university, I describe how laboratories are places of danger as well as discovery. Ultimately, laboratories are dangerous places because the consequences of scientific inventions are insufficiently understood and often misused. These long-term risks may be the most significant scientific menace, but are not the immediate focus of the book. Laboratories are also immediately hazardous places because routine laboratory procedures employ substances and technologies that are threats to life and the environment, substances such as biological agents and toxins, flammable and noxious chemicals, radioisotopes and technologies such as lasers, giant magnets, and high energy pulses.

There is, however, another kind of persistent laboratory hazard that derives not simply from the materials and machines with which scientists work, or the amalgams and technologies they make whose properties are not entirely understood. This danger, which is the major focus of the book, is embedded in the distributed labor that supports and enacts the work of the laboratory, work that is spread across dozens of persons and coordinated through invisible links that constitute the research university as a professional bureaucracy. By substituting systems of audit and surveillance for the relations of trust and collegiality that have built and sustained modern science, contemporary environmental health and safety management systems seek to reconstruct the everyday routines and rituals of scientific practice, remaking them into the elements of a new form of sociality. While surveillance and audit are familiar in business and government, these are foreign to the world of science and the professional lives of scientists where traditions of autonomy, individual responsibility, and trust have been so powerful in creating the authority of science.

Nonetheless, as science contributes its knowledge to the institutionalization of safety regimes, it subordinates itself to the knowledge and principles — the laws — it helps to establish. In this way, the commonplace expectation for a universal rule of law is reproduced in the uncommon world of laboratory science.

Ruth Lewin Sime is Professor Emerita, Department of Chemistry, at Sacramento City College. Her new project is titled "History and Memory: A Biographical Study of Otto Hahn during National Socialism and the Postwar Period."

It has often been said that in Germany after World War II, people in all walks of life engaged in the collective silencing of the past. That was certainly true for the scientific community and its most prominent spokesperson, Otto Hahn (1879-1968), who served as president of the Kaiser Wilhelm Society and its successor organization, the Max Planck Society, from 1946 to 1960. Famed for the discovery of nuclear fission and known for his aversion to Nazism, Hahn used his reputation and his position to create an image of German science as undiminished in excellence, untouched by National Socialism, and uninvolved with the war. Although that image was not historically accurate or even particularly credible, it resonated with the expectations and self-portrayals of the great majority of scientists and of Germans overall. Hahn's silencing and myth-making made him a hugely admired public figure who was revered by a generation of scientists and is remembered as a cultural icon to this day.

With this study, I intend to document Hahn's advocacy in the postwar period, to examine his many memoirs and reminiscences, and to retrieve what I can of his own hidden history. It is a matter of record, for example, that Hahn was appalled by the racial policies of the Hitler regime and tried to help several of his Jewish colleagues, but later, in his published memoirs, he barely mentioned these experiences and he was completely silent about the persecution he had witnessed. Similarly, with respect to his wartime work Hahn always portrayed himself as a modest laboratory scientist whose research was "pure" and always openly published, whereas in fact he and his institute had been committed to Germany's nuclear fission project, a secret military-supported research program that brought Hahn into the most privileged scientific structures of the National Socialist state. The disconnects are many, and they are especially apparent in Hahn's conduct in the early postwar years, when he distanced himself from his émigré friends, wrote glowing testimonials for associates whose politics he once despised, defended industrial magnates on trial for war crimes, and made every effort to create and propagate a sanitized collective history of the scientific enterprise during the Third Reich. One wonders who this man actually was; for me, the question remains open.

In terms of biography, my picture of Otto Hahn remains fragmented and far from coherent. Historically, however, I hope this study will be valuable for uncovering "missing" history, for documenting a collective effort to silence and rewrite the past, and for raising questions about the politicization of science and the nature of ethical responsibility.
History and Philosophy of Science among the Kiwis

University of Calgary's Margaret J. Osler spent seven weeks as a Visiting Erskine Fellow. Here she writes about the pleasures of teaching in New Zealand, as well as the occasional cultural gulf.

I never did see a Kiwi (the feathered kind), but I met many Kiwis (the bipedal, featherless, rational kind) during the time I spent at the University of Canterbury in Christchurch, New Zealand. The very well-endowed Erskine Fellowship Programme is designed to overcome the university's geographical isolation by bringing in foreign academics (about 71 per year) and by funding local academics to ply their trade in foreign venues.

My fellowship brought me to the Department of Philosophy, where Philip Catton, a philosopher of science trained at the University of Western Ontario, has created — almost single-handedly — an undergraduate program in History and Philosophy of Science (bearing the acronym HAPS). Although he carries most of the program's core courses, his work is supplemented by Clemency Montelle, whose appointment is in the Department of Mathematics and who is a specialist in ancient mathematics who did her graduate work at Brown University, and Andy Pratt, a chemist who reads widely in history and philosophy of science.

In New Zealand, a three-year undergraduate program leads to a Bachelor's degree. If a student is contemplating graduate study, a fourth year, called the Honours Year, leads to a Bachelor's Honours degree. The following courses comprise the undergraduate HAPS program: HAPS101, Cultures of Inquiry and the Origins of Science; HAPS201, The scientific method debate; European science 1200-1700; and HAPS202/302, Theory, measurement, reality; World science since 1700. I parachuted into a six-week chunk of Philip Catton's HAPS 201, teaching a short survey of the Scientific Revolution. I used the manuscript of my forthcoming book Reconfiguring the World, Nature, God, and Human Understanding (under contract with Johns Hopkins University Press) as the main textbook for the course, in part to get feedback from real students. Selections from primary sources supplemented the book, and the paper for the course required the students to deal with a single primary source in some detail.

The 12 students enrolled in the course came from a wide variety of backgrounds and levels of study. There were undergraduates majoring in HAPS, Philosophy, and various sciences. One mature student is a science journalist working towards a diploma in HAPS. A woman from the island nation of Seychelles (population 100,000) is pursuing a M.A. in Science Education so that she can return home to teach the local school teachers how to teach science. And there were several graduate students, each taking the course to enrich their studies in Philosophy, Biology, and Physics, respectively. Because the class was small and met twice a week for two hours, there were many opportunities for discussion. In general, I found the students more engaged with the material and more willing to contribute to discussions than my students at the University of Calgary, where, however, most of my classes are very large lecture courses. Philip Catton attended all my classes and joined the discussions, usually adding questions and insights from a philosophical perspective.

In addition to teaching, I presented four research seminars, two to the Philosophy Department seminar, one to the History Department, and one at a weekend Philosophy retreat at one of the university's field stations, this one at the seaside town of Kaikoura, a three-hour drive north of Christchurch. Four times a year, Philip Catton takes a group of about 25 students and faculty members on retreats to each of the four field stations. The activities include talks by both members of the faculty and students, outdoor activities like hiking or beach-combing, and lots of informal discussion of topics in philosophy. Notable among the speakers at Kaikoura was Yann Montelle, who gave an engaging and well-illustrated talk about his experiences studying early cave art in France. Discussion of his topic led to extended discussion about the emergence of early philosophy in Greece. Aneta Cubrinovska spoke about her work in the philosophy of mathematics. And I gave a talk on "The Other Side of Isaac Newton." Despite the extremely informal atmosphere at the retreat, audiences were attentive and discussions were extensive.

The HAPS program at the University of Canterbury suffers from a shortage of personnel. Philip Catton regularly teaches an overload, often doubling his regular course load, in order to sustain the program. He is also running a program in the Philosophy of Mathematics. There is real need there for a full-time historian of science, either in the HAPS program directly or in the Department of History. Like many other universities today (including my own), Canterbury is experiencing cutbacks in funding, particularly in the Humanities. The university is in the midst of a reorganization of departments and schools, the consequences of which for HAPS are not immediately evident.

A visit from Ruth Barton, who teaches at the University of Auckland, enriched my understanding of the problems historians of science face in the antipodes. In New Zealand, their numbers are few, distances between them are long, and isolation is a problem that must be addressed deliberately. Close relations exist between scholars in New Zealand and their counterparts in Australia. Clearly the Erskine Programme is an important
resource for addressing these issues. The Otago/Sydney Early Modern Seminar, jointly coordinated by Peter Anstey (University of Otago) and Stephen Gaukroger (University of Sydney), meets every two years for a workshop on topics in early modern history of science and philosophy. This year’s seminar in Sydney, to which I gave a talk, consisted of presentations in a workshop setting, full of new ideas and lively exchanges among an impressive group of scholars.

The secular nature of Kiwi culture was striking and was particularly evident in the students’ almost total ignorance of the Bible or religious issues more generally. This emerged as a problem for me because issues about religion and theology are central to the history of science in the early modern period. I needed to explain references to the Bible and even tell them that “Genesis” and “Revelation” were parts of the Bible. This gap in their background made it hard to explain the urgency of theological issues as they bore on astronomy or theories of matter in early modern natural philosophy. For these students, Galileo’s troubles with the Church were simply another example of their perception of religion as an oppressive and anti-scientific force. In all honesty, I should add that even in Alberta, which is one of the northern reaches of the Bible Belt, my students’ ignorance about religion is striking. (One of my students once asked me whether Jesus had anything to do with Christianity. And this was not the cynical question that some modern sophisticate might raise!) Maybe these are signs that we need to revive some—contextualized and modified—version of Western Civ. Certainly, North Americans’ preoccupation with religion and questions about the relationship between science and religion appeared in a new light. These concerns may not be universal, even in a “western” country like New Zealand. My encounter with this issue led me to reflect on the fact that the obsession with such issues may be essentially an American (as in the U.S.) problem.

While I was in New Zealand, I was invited to give a talk in Dunedin at the University of Otago, the southernmost university in the world. In addition to its remarkable location, the University of Otago benefits from a long tradition of the history of philosophy. Peter Anstey, my host there, is Professor of Early Modern Philosophy and coordinates the “Early Modern Thought Research Cluster.” He has published on Robert Boyle’s philosophy and John Locke’s interest in medicine. Although Peter took me on a wild drive between lunch and my afternoon talk in hopes of seeing an albatross at the colony on the tip of the peninsula (“A perfect day for sighting albatrosses,” he declared as gusts of ocean winds beat against our faces), none came into view. The albatross and the local penguins joined the kiwis among the class of local birds I never saw.

Despite my many failures at bird-watching, I had a wonderful time in New Zealand. I enjoyed living with Philip Catton and his wife Judith in their hillside home overlooking the Canterbury Plains. Conversations and friendships with colleagues were stimulating. And the experience of an academic culture that is simultaneously different yet in many ways familiar provided numerous opportunities to reflect back on my own.

August 2008

Living Properties Conference

A lively and informative workshop on innovation and intellectual property protection in living matter past and present was held at the Max Planck Institute for the History of Science, in Berlin, at the end of May 2008. Living Properties: Making Knowledge and Controlling Ownership in the History of Biology was co-sponsored by the MPI, the Yale Program in the History of Science and Medicine, and the Centre de Recherche en Sciences, Médecine, et Société (INSERM, Paris). The workshop papers, authored by historians, lawyers, and policy analysts from the U.S. and several European countries, covered the 19th and 20th centuries, dealt with agriculture as well as biomedicine, ethics as well as law, breeding as well as biotechnology. Together they exposed the deep historical roots of contemporary issues, especially the longstanding commercial element in the innovation of living things, the relationship of the biology of organisms to types of intellectual property protection, and the diverse means outside the patent system that innovators have used to protect their vital creations.


Some 40 people attended the workshop, an indicator of the increasing interest in the historical treatment of intellectual property. The gathering constituted the initial effort of an informal international consortium that aims to promote studies and collaborations in the relatively new field of the history of innovation and ownership in living organisms and their parts. A Web site for the consortium (“The IP BioNetwork”) is under development at the University of Leeds (for a working draft, see http://www.hps.leeds.ac.uk/Invention/IPBio/index.htm). In the meantime, the workshop program may be seen on the Yale Web site (www.yale.edu/hshm). The co-organizers of the workshop – Dan Kevels, Jean-Paul Gaudilliere, and Hans-Jörg Rheinberger – expect that the Max Planck Institute will issue a preprint volume of the papers some time this fall for limited circulation.

– by Dan Kevels, Yale University
History of Science Down Under

Ruth Barton, ex-president (2005-2008) of the Australasian Association for History, Philosophy and Social Studies of Science and associate professor of history at the University of Auckland, describes the topography of history of science in Australasia.

History of science in our region developed in close association with philosophy of science and was sometimes located in separate HPS departments. New historiographical emphases in the 1970s produced “Science, Technology and Society” programs. More recently, history of science has been added to history departments. History of medicine has been part of many of these programs; environmental history has taken a significant place in some, but, by comparison, history of technology has been neglected. Over the last decade there have been major changes in the profile of history of science in Australia and New Zealand. The oldest and biggest programs have been restructured, some smaller programs have disappeared, and in New Zealand history of science has achieved a higher profile.

The regional professional organization is the Australasian Association for History, Philosophy and Social Studies of Science or AAHPSSS, written A^2HPS by the scientifically inclined and pronounced “aaps.” The executive, customarily re-elected for two, sometimes three, years, is usually based in one city but always has vice-presidents to represent other regions and interests. We are a small and informal organization; our bank balance, for example, rarely changes by as much as $1,000 over a year. The major AAHPSSS activity is holding conferences (usually in July), which are often held in association with the Australasian Association of Philosophy. Although the AAHPSSS conferences lose local attendees to larger or more specialist conferences in the northern hemisphere, the local conferences provide highly varied, stimulating presentations and are valuable in maintaining local support networks and providing a congenial environment for graduate students’ first conference presentations.

Australia

Within Australia, history of science is also supported by the Australian Academy of Science. The Academy’s journal Historical Records of Australian Science is a major forum for regional research. Through its HPS Committee, the Academy fosters HPS in Australia and maintains links between HPS in Australia and the International Union of History and Philosophy of Science (IUHPS). In 2005 the National Museum of Australia and the Academy combined to provide an annual $2,500 prize for the best student essay on any aspect of the history of Australian science or, in alternative years, Australian environmental history. Regional research is also promoted by the Pacific Science Circle (coordinated by Peter Hoffenberg at the University of Hawai’i) which publishes a regular newsletter and organizes thematic sessions at large conferences.

National Committee for the History and Philosophy of Science.
Back (L to R): Rachel Ankeny (current chair), David Curtis, Libby Robin; front (L to R): Hans Pols, Rod Home (past chair), Paul Griffiths. Not pictured: David Mercer, David Miller, Rosemary Robins

At Melbourne, although members of the long-established HPS Department have been divided between the history and philosophy departments, there is still an HPS teaching program, combining history of science and medicine with philosophy of science and sociology of science. The HPS program offers majors within the framework of a B.A. and B.A. Honors, and postgraduate education. At the undergraduate level, the focus includes the physical sciences, with topics on natural philosophy from ancient Greece to the 20th century, astronomy across different cultures, as well as the rise of science in early modern Europe. In life sciences and medicine current teaching areas are Darwinism, environmental history, and the history of medicine and psychiatry.

Within the HPS program, history of science and medicine is the largest field. Kristian Camilleri’s research focuses on the history and philosophy of modern physics, in particular the interpretation of quantum mechanics in the first half of the 20th century. Gerhard Wiesenfeldt studies the setting of experimental natural philosophy in early modern culture with a focus on the Netherlands. He has also published biographies of “fameless” scientists, on science in popular movies, and romantic self-experiments. Janet McCalman works on the history of lifecourse health and historical demography. James Bradley has studied the role of therapy in the creation of medical identities, the history of complementary and alternative medicine, and the body as a site for punishment.

The University of Melbourne eScholarship Research Centre, established in its current form in 2007, focuses on the
history and archives of Australian science, medicine and technology. The center’s Web site, http://www.esrc.unimelb.edu.au/, includes links to its major online publications: “Bright Spares,” “Australian Science at Work” (soon to be combined into one online resource as “The Encyclopedia of Australian Science”), and guides to archival collections. Other work includes supporting and developing the World History of Science Online project which can be found at http://www.dhst-whso.org/web/.

The program in History and Philosophy of Science at the University of New South Wales (in Sydney) is located in a newly merged School of History and Philosophy in the Faculty of Arts and Social Science. The program is one of the oldest and largest such units in the world. The course structure integrates the traditional HPS areas of history and philosophy of science, technology and medicine with contemporary issues in environmental studies, technology policy, and the history and politics of contemporary biosciences, and offers critical perspectives on science, technology and environment for undergraduate science, humanities, and social science students. At the post-graduate level the School attracts M.A. and Ph.D. students from all over the world across the spectrum of HPS concerns. The international research profile of the School is particularly high in the history and sociology of science and technology. Program staff in the history of science include: John Schuster (early modern natural philosophy, Descartes); David Phillip Miller (James Watt, the historical sociology of scientific knowledge, including intellectual property); John Gascoigne (Sir Joseph Banks, James Cook, and European-Pacific contact 1763-1842); Nicholas Rasmussen (history of life sciences in the 20th century, including evolving relations between the drug industry and biomedical research); David Oldroyd (history of geology); and Susan Hardy (history of medicine, surgery and health care in European Australia).

History and philosophy of science has been taught in the Faculty of Science at the University of Sydney since the early 1950s, although a permanent lecturer was not appointed until 1966. Two further appointments were made and by the mid-1990s this set-up was commonly referred to as the Unit for HPS. Currently, the Unit for HPS has five staff members and one postdoctoral fellow. Research and teaching areas focus on: history of early modern science (Ofer Gal, Charles Wolfe); history and philosophy of medicine, including bioethics (Hans Pols, Dominic Murphy, Catherine Mills); and philosophy of science (Dean Rickles). Colleagues in philosophy of science and history of philosophy (including Mark Colyvan, Huw Price, Warwick Anderson, and Paul Griffiths) have been involved in the new Centre for the Foundations of Science in the Faculty of Arts, opened in mid-2008.

The Science, Technology and Society Programme at the University of Wollongong (south of Sydney), has been through boom and bust since the first HPS courses were taught in the 1960s. Recent signs of growth include the appointment of Adam Lucas, whose interests range from medieval technology to contemporary science policy, and who joins David Mercer, a sociologist of science focusing on the legal use of scientific evidence. They even hope for a third appointment.

New Zealand

In New Zealand, history of science and history and philosophy of science programs have developed quickly in the past decade. Synergies among historians of science, historians of medicine, philosophers of science, scientists and others have led to new programs and to informal alliances, making history of science more visible. Relationships between the individuals in different institutions are usually collegial but institutional cooperation is hindered by the culture of competition among universities, which results from the highly competitive national research funding system. The PBRF (Performance Based Research Funding) model distributes block research funding to universities on the basis of research productivity in which every individual is graded as A, B, C or R (for research inactive). The average grades for departments are published and departments and institutions compete with their neighbors. This competitive spirit may show through in the descriptions below.

The University of Otago (in Dunedin, in the south of the country) has a long tradition of teaching and research in the history of science. Since the appointment of Alan Musgrave in 1970 there has been continuous undergraduate teaching in the Philosophy Department, and from the 1980s history of medicine and history of science have been taught in the History Department. With the arrival in 2006 of Peter Anstey, who specializes in early modern natural philosophy, and the establishment in 2007 of an undergraduate Minor in History and Philosophy of Science, Otago has consolidated itself as a leader in the history of science in New Zealand. There are active researchers in a variety of fields, including: Greek astronomy and time-keeping (Robert Hannah and Alan Musgrave); early modern natural philosophy, including Bacon, Boyle, and Newton (Anstey and Musgrave); the history of the physical sciences in the modern period (Musgrave); science and religion in the nineteenth century (John Stenhouse); the history of medicine (Barbara Brookes), and the history of media technology in the 20th century (Hugh Slotten).
Otago is also home to some important archives for the history of medicine and the history of science in New Zealand. The Medical Library houses the Monro Collection of medical manuscripts and publications deriving from the dynasty of professors of medicine at the University of Edinburgh in the 18th century. (See Douglas Taylor, *The Monro Collection*, University of Otago Press, 1979.) The Hocken Library is one of the richest sources of archival material on the history of science in New Zealand and the Special Collections Library contains the de Beer Collection, which includes many important early modern works.

Moving north, at the University of Canterbury in Christchurch a program in history of science formerly associated with the philosophy department has become an interdepartmental HPS program. Currently the academic faculty member with the most dedicated profile as a historian of science is Clemency Montelle (in the mathematics department), who works on ancient mathematics and astronomy. Philip Catton (philosophy), who instigated the teaching program, researches linkages between histories of mathematics and physics and the history of philosophy at selected junctures from ancient times to the early twentieth century. Also in philosophy, Jack Copeland and Diane Proudfoot head up the Turing Archive and both are recognized researchers in the history of computing. Several of the university's scientists, including John Hearnshaw, William Tobin, and John Campbell, have published monographs on scientists. A political scientist, Mark Francis, recently published the definitive intellectual biography of Herbert Spencer. History of medicine is strong in the history department. Jane Buckingham's research focuses on India and the Pacific; Philippa Mein-Smith's research on Australia and New Zealand includes the history of medicine and health. The program greatly benefits from the University's scheme of Erskine Fellowships, which bring international visitors for one to two months, and N.Z.-U.S. academic exchanges under the Fulbright system. In 2008, visits by Margaret Osler (University of Calgary) and Sally Gregory Kohlstedt (University of Minnesota) have given diversity to the program. At present there are a small number of research students in history of science. Ph.D. student Rebecca Priestley is researching "nuclear New Zealand." Priestley has also edited an anthology of writing by N.Z. scientists, *The Awa Book of New Zealand Science* (Te Awa Press, 2008). Bronwyn Rideout, a Commonwealth Scholar from Canada, is researching the mathematical understandings of the Greek mathematician Pappus. Graduates of the fourth-year honors program in history of science regularly go on to perform with distinction in larger graduate programs overseas.

In Wellington, the Royal Society of New Zealand and other national institutions support significant activity in the history of science. The Alexander Turnbull Library, which is part of the National Library, houses important archival collections for research on New Zealand science. In 2006 the National Library held an exhibition of New Zealand's science history, which was curated by Rebecca Priestley and science journalist Veronika Meduna. The National Library and the Royal Society sponsor occasional lectures on historical topics, for example, by scientists who are researching the achievements of their eminent forebears. A conference on James Hector, the founder of many of New Zealand's scientific institutions, including the Royal Society, was held at Te Papa, the national museum, in 2007. And, illustrating the diversity of interests within history of science, Glyn Parry at Victoria University of Wellington teaches and researches the interconnections of early modern science, magic, witchcraft, and religion.

The History Department at the University of Waikato maintains a strong research field in the history of science. James Beattie (appointed 2007) publishes widely on the history of science and environmental history in the British colonial world, and in China and Japan. Cathy Coleborne specializes in the history of health, and is exploring how families dealt with mental breakdown in colonial Australia and New Zealand. Ross Galbreath is the leading historian of New Zealand science, and his best-known book is a history of the country's main institutional body for science (until disbanded in 1992) titled *DSIR: Making Science Work for New Zealand* (1998). History of science and environmental history are themes within many courses, and faculty teach on the history of science and imperialism in the British Empire and the social history of medicine and illness.

The history department at the University of Auckland teaches history of medicine, history of science, and cultural history. History of medicine has been especially popular with graduate students; a number of Ph.D.'s on the history of health
and medicine in New Zealand have been completed under Linda Bryder's supervision. Bryder has published widely on maternal and infant health in New Zealand and is currently completing a project on the National Women's Hospital in Auckland, including its controversial cervical cancer research. Ruth Barton teaches and researches in history of science, chiefly on science and culture in Victorian Britain and the history of New Zealand science. More recently, the cultural historian Joe Zizek joined the department. His teaching and supervision include topics connected with the history of science, while his research focuses on revolutionary France. The department currently has a post-doctoral fellow, Natalie Lloyd, working on the history of agriculture, tracing British imperial networks of researchers on animal deficiency diseases in the early 20th century. In the first semester of 2008, Sally Gregory Kohlstedt co-taught in Barton's graduate course. Graduate students at M.A. and Ph.D. levels chiefly work on New Zealand topics (for example, a history of theories of extinction with reference to debates over moa extinction by Simon Thode; germ theory and bacteriology in N.Z., 1880-1920 by Katrina Ford). Students in history of science can take courses in sociology of science and philosophy of science and, through Kohlstedt's visit, links to the Auckland graduate program in Museums and Cultural Heritage have been established.

This account has focused on history of science within teaching programs, but research proceeds in many other academic pockets. In the German department at Auckland, Jim Bade, James Braund, and Sascha Nolden research German-speaking scientists in New Zealand, most notably Ferdinand Hochstetter, and hosted an international conference on the contribution of German-speaking scientists to N.Z. natural history in September 2008. Research in history of geology is sometimes pursued within geology departments, history of anthropology within anthropology departments, and history of medicine within medical schools.

Unlike Australia, there is no larger national organization of history of science in New Zealand. Although New Zealanders in general are reluctant to be included, almost invisibly, with Australia under the label 'Australasian' and many of the people mentioned here identify with history or history of medicine rather than history of science, a few New Zealanders have been active in the AAHPSSS. It is evidence of the recent growth of history and philosophy of science in New Zealand that from 2005 to 2008 the AAHPSSS executive was, for the first time, located in New Zealand.

—by Ruth Barton, with thanks to Peter Anstey, James Beattie, Kristian Camilleri, Philip Catton, Gavan McCarthy, Hans Pols, John Schuster and, for photographs, Rebecca Priestley.

### STS Position at Sarah Lawrence College

The Sarah Lawrence College Social Science Faculty invites applications for a tenure-track position in Science, Technology & Society, beginning fall 2009. This appointment is a chair endowed by the Marilyn Simpson Trust. Candidates should have expertise in the political, cultural, and social issues arising out of contemporary developments in science and technology, and a breadth of knowledge about the history of science. An interest in working closely on student-generated independent projects is essential. Specific areas of research and teaching are open. We are seeking a candidate with teaching experience, a strong commitment to undergraduate teaching and a PhD in STS, history, sociology, anthropology, or some other appropriate field.

Application materials must include a cover letter, CV, three letters of recommendation, two course syllabi, a writing sample, and a copy of graduate transcript. Deadline for applications is November 1, 2008. To apply for the position, please go to: [https://slc.simplehire.com/applicants/Central?quickFind=50372](https://slc.simplehire.com/applicants/Central?quickFind=50372)

Sarah Lawrence College is a small liberal arts college with a unique pedagogy based on small classes and individual tutorials located in Westchester County, 20 minutes outside of New York City. For information on Sarah Lawrence College, our curriculum, teaching methods, and philosophy of education, please see our Web site at: [http://www.slc.edu](http://www.slc.edu). SLC is an Equal Opportunity Employer committed to achieving a racially and culturally diverse community.
The Program in History of Science at Mississippi State University was created a few short years ago. Its lack of a legacy or even a history has proven one of its great strengths. As part of the more general generational change experienced in American universities this decade, Mississippi State seized upon the ironic opportunity provided by wholesale retirements to fashion something new. These departures wiped away traditions, established practices, and long-standing interests here; we were spared the unpleasant task of permitting archaic structures to restrict new efforts or the inevitable tumult of tearing them down. What we have done is build a program from scratch, where the counsel and benefit of young, energetic scholars trained in a myriad of ways at many programs could fashion what they anticipate would be an optimum history of science program for the 21st century.

To that end, we chose to situate the program both intellectually and physically within the department of history. Such a decision was apt; the history of science depends on the same sort of historiography and methodologies as "standard" history. The primary thing that separates history and history of science ought to be focus: The history of science concentrates on science in its myriad facets and ramifications. But that distinct focus in no way divorces history of science from history.

The issues that galvanized the old history of science—creativity, individual invention/discovery—are no less valid for artists, writers, or machine designers, each of whom have been successfully studied and analyzed within the framework of history. The more recent issues of the contextual history of science—class, gender, race, education and the like—stand as critical determinants for many forms of history. The most current concerns of the history-of-science field—the act of seeing, how various types of models and conventions encourage thought in particular directions—are the staples of cultural historians everywhere.

When we established the MSU program, we first confronted the reality that we could not be all things to all people. Rather than be broad and shallow—to cover all bases superficially—we marshaled our resources to become excellent in what we do. We chose to focus on America and Europe and then for only about the last three centuries. By concentrating eight faculty on that geographical and chronological period, we can take our place among the largest history of science programs. We have eight specialists investigating the modern past.

Those interested in ancient science will not find what they seek at MSU. But those looking for an extensive concentration in the life and physical sciences in 19th- and 20th-century America or Europe as well as the history of technology and medicine could find few places of greater depth.

What are the comprehensive exam fields?

We offer a full palette of history-of-science courses and seminars covering the past three centuries. Graduate students can select from a variety of seminars or lecture courses in the life and physical sciences, medicine and/or technology. There are three-hour written comprehensive exams for Ph.D. students in at least two history-of-science fields as well as a three-hour oral exam. A dissertation proposal is also required as part of the program.

But being located squarely in a history department colors how we train graduate students and how we identify ourselves. Each member of the history of science faculty teaches at least one "regular" history course; when it comes to placing history of science within history, we practice what we preach. Graduate students here are not simply trained to teach an American history or western civilization survey. A full complement of either European or American seminars is required for the degree—either Europe or America must be a comprehensive exam field—as we guarantee that graduates are well rooted in history as well as the history of science.

What are the faculty, program, and resource strengths?

The MSU history department has long been known for its work in environmental, agricultural, gender, African American, military, and Southern history and that opens almost unprecedented opportunities. Collaboration and interaction among faculty members and graduate students are commonplace.

A quick check of the current research projects of the history-of-science faculty demonstrates just how vibrant connections between standard history and the history of science are at MSU. Dennis Doyle writes on the racial psychiatry of 1920s and 1930s Harlem. Amy Gangloff examines automobile safety in the 1950s and 1960s with particular emphasis on the gendered implications of various decisions. Stephen Brain investigates Soviet silviculture under Stalin. Susan Rensing explores the late 19th- and early 20th-century relationships among women's rights advocates and eugenic thought. Alan Marcus focuses on cancer research in the western world in the century after 1870. Matthew Lavine interrogates radiation and the geological and physical sciences in the 19th and early 20th-century American West. Alexandra Hui analyzes connections among music, mathematics, and the nationalistic science of mid-19th-century Germany. Mark Hersey delves into the environmental ethic found in George Washington Carver's botanical training at Iowa State and how it manifested itself in Carver's Tuskegee work.

Although the history-of-science program is new to MSU,
the active collection of resources for the history of science has been
standing. As a land-grant institution, the university has actively accessioned
books and collections covering all facets of science and technology since the
university's inception in 1878. It has also avidly worked to gather material
from Mississippi legislators involved in the national planning of science and
technology. Indeed, one of the offshoots of having long-standing federal legisla
tors is that they gain seniority on important congressional committees (that
is the reason that Mississippi led the nation in congressional earmarks this past
session). John Stennis, Trent Lott, and Thad Cochran are but three examples
of the kind of rich collections useful to history-of-science study at MSU. Sten
niss long served on the committee that created and then oversaw NASA and
was among the foremost proponents of the space program. Cochran was (and
is) especially adept at securing earmarks for energy-related activities and for ag
gricultural science initiatives. Lott served on the Commerce, Science, & Transpor
tation committee and the commit
tee for the Environment and Public Works. As such, he had direct influence
on almost all federal programs in these areas for decades.

Mississippi and the South generally provide an exciting context for histori
ans. Here history is alive. It is central to identity. It is in the blood and the spirit.
There is palpable excitement as the aw
verse peoples unheard of in the North, is
second nature in the South and presages a certain openness within society. In
the South, the rich tapestry of America's past is woven in every endeavor as gen
tee traditions are wrought alive. Even the cooking speaks of the past. MSU is
at the crossroads of at least three distinctive cuisines. Southern Homestyle cook
ing predominates - the virtues of batter dipped French fries remain a mystery
- but barbecue is fundamental. Flavors run the gamut from Texas to Memphis
Dry Rub, with some North Carolina vinegar based thrown in. New Orleans
and its Cajun and Creole spices are well represented, as is Mississippi Delta
food. There the legacy of bringing in Chinese, Italian, and Mexican workers
in the 1920s to build the levees results in a unique Italian-Chinese cooking as
well as tamales. Mississippi is the home of the Blues. You can still find authentic
juke joints, some operating for nearly a half century, just a few miles from MSU.

For further information, contact Alan Marcus at aimarcus@history.mstate.edu.

American Philosophical Society Library Resident
RESEARCH FELLOWSHIPS

History of Science, Medicine and Technology

The American Philosophical Society Library in Philadelphia offers competitive
short-term fellowships supporting in-residence research in the Library. We are a
leading international center for historical research holding more than 8 million manu
scripts, 250,000 printed volumes, and thousands of maps and prints.
The Library's collections are especially notable for their depth and importance in
numerous and diverse fields, including the History of Science, Medicine & Technology, and Intellectual History. These resources provide exhaustive research materials supporting study of the histories of Physiology, Biochemistry and Biophysics; Eugenics and Genetics; Physics and Quantum Mechanics; Astronomy; Natural History in the 18th–19th Centuries; and Cultural Anthropology; with special collections relating to Travel, Exploration and Expeditions. Access comprehensive guides at www.amphilsoc.org/library/

Candidates may be U.S. citizens or foreign nationals who hold the Ph.D. or equiva
lent, who are Ph.D. candidates who have passed their preliminary examinations, or independent scholars. A stipend of $2,000 per month is awarded for a minimum of one month and a maximum of three months. Awardees may take their fellowships at any time between 1 June 2009 and 31 May 2010. Fellows must be in residence in the Library for consecutive weeks during the time of their fellowship.

Applications are due no later than 1 March 2009 (receipt deadline); notifications are sent in May. Applications are evaluated based on the quality of the project, the letters of recommendation, and the relevance of the APS Library's collections to the project. Candidates living more than 75 miles from Philadelphia receive some preference.

Instructions and forms: www.amphilsoc.org/grants/resident.htm

American Philosophical Society Library • 105 South 5th St., Philadelphia PA 19106, U.S.A.
215-440-3400 • Libfellows@amphilsoc.org
Lecturers, including John Theophilus Desaguliers (1683-1744), used planetary models as part of their demonstrations; these models often served as the centerpiece for public lectures on astronomy. Instrument makers and lecturers, including Benjamin Martin (ca. 1705-1782), published books describing the use of planetary models. Some instrument makers offered smaller versions for home use, including portable models that could be carried by itinerant lecturers. The availability of relatively inexpensive versions is indicative of the interest of the public in such instruments.

Planetaria enjoyed popularity, from the seventeenth century onward, as devices to demonstrate Sun-centered cosmology. Many models only show the Earth, Sun, and Moon, indicating that the phenomena associated with these bodies—day and night, the seasons, eclipses, and lunar phases—were considered of particular import. In general, those models that included the planets were intended to provide only approximate representations of astronomical motions. The relative sizes of and distances between planets were not accurately represented, nor were the post-Keplerian elliptical orbits of the planets; the scale of most planetaria requires that the orbits resemble circles. Further, even in the age of Newton, the planetary machines show mean motions and fixed orbits, without attempting to illustrate perturbations or deviations due to the gravitational effects of bodies other than the Sun. Planetaria were not intended to teach mathematical theories of astronomy. Generally speaking, a planetarium demonstrates the relative motions and positions of the astronomical bodies and is primarily designed for teaching. From the first half of the 20th century, the term "planetarium" has often described optical systems used with a projection instrument inside a domed theatre. However, the term is also routinely used to describe mechanical, non-optical demonstrations of astronomical motions.

The Device known as the "orrery"

The historian of scientific instruments, John Millburn, has warned of the confusion surrounding the terms "orrery" and "planetarium," and the instability of their usage. The term "orrery," which is often used in English-speaking countries instead of the word "planetarium," derives from the name of Charles Boyle, the fourth Earl of Orrery (1676-1731), for whom such an instrument was made in 1712-13 by a London instrument maker, John Rowley (working by 1697, died 1728). This orrery is now in the collection of the Science Museum, London (inventory number 1952-73). The Rowley orrery depicted only the Sun, Earth, and Moon.

Our knowledge of the origin of the orrery is, to some extent, based on the report of John Desaguliers, who explained that his contemporary Rowley had been sent an astronomical model made by the London clockmakers George Graham (1673/4-1751) and Thomas Tompion (1639-1713). Rowley copied the instrument "and made the first for the late Earl of Orrery, and then several others, with Additions of his own."

The Graham/Tompion "proto-orreries" were designed to demonstrate the annual motion of the Earth around the Sun, the diurnal rotation of the Earth on its axis, and the revolution of the Moon around the Earth. An entry in the *Minutes* of the Spalding Gentlemen's Society describes such an instrument: Monday, March 2nd, 1713. Mr. Johnston gave the Soc an Acct. of Mr. Tompion's Curious Machine for explaining the Motion of the Sun, Moon & Earth according to the Copernic system.

The link to Copernican heliocentric cosmology is emphasized; there is no mention in this context of Isaac Newton. (A Graham/Tompion instrument is now in the collection of the Museum of the History of Science, Oxford (inventory number 97810); a similar example, signed by Graham, is in Chicago, at the Adler Planetarium, accession number A-156.)

The term "Grand Orrery" was used by 18th-century English instrument makers to describe a model which had been extended to include the motions of the planets (and their satellites), as well as the Earth and Moon; the astronomical bodies included varied. An orrery, then, has certain English associations which other foreign-made planetaria may not have, but it is not immediately clear that this includes any particular link to Newton or "Newtonianism." Few Grand Orreries survive, and fewer still are on display in museums. A Grand Orrery (Wh.1275), signed Made by GEO ADAMS at TYCHO BRAHE'S HEAD, in Fleet Street LONDON, occupies pride of place in the main gallery of the Whipple Museum of the History of Science, in the Department of History and Philosophy of Science at the University of Cambridge. "Grand Orreries" are certainly grand—not only large, but expensively and richly decorated pieces of furniture.
served no useful purpose, and may only have confused people trying to understand the heliocentric motions conveyed by the orrery, because the overarching framework of the armillary sphere was associated with a geocentric perspective.

In his *A compendious system of natural philosophy* (1743), John Rowning (1701-1771), a natural philosopher and mathematician who was a Fellow of Magdalene College, Cambridge, complained that:

Artificers generally erect upon the Ecliptic some Semi-circles to represent some of the principal Circles of the Heavens. But this is wrong, and tends to Confusion; because these Circles being only imaginary, and arising from the apparent Motions of the heavenly Bodies, ought to have no Place in the Orrery: Others found fault with this hybrid device as well. Benjamin Martin, in 1771, complained that such constructions were a waste of money, claiming that the orrery "stands in Need of none of the useless, expensive, and cumbersome Embellishments of Art."

For Martin, the orrery was a valuable educational tool; in *The Description and Use of both the Globes, the Armillary Sphere, and Orrery exemplified* (1762, reprinted 1773) he pointed to its usefulness in arguing against the Ptolemaic conception of the universe. A plate from Martin’s *The Description and Use of both the Globes* (1773) even carries a banner proclaiming the Copernican character of the orrery. (However, it could be argued that orreries and planetaria do not give a true impression of Copernican cosmology either, for example, in terms of the relative size of the universe.)

Viewed against the backdrop of contemporary accounts of the orrery, Wright’s depiction of *A Philosopher giving that lecture on the Orrery*, in which a lamp is put in place of the Sun gives the impression that those gathered around the illuminated model were not listening to a lecture related to Newton or "Newtonianism." As these accounts indicate, in the 18th century the orrery was often described as Copernican, and was seldom (if ever) labelled as Newtonian. Furthermore, the impression that the Copernican hypothesis was not universally understood and accepted in the period is reinforced by the consideration of planetary models, some of which – especially the orrery surmounted by the hemispherical armillary – were seen by their contemporary critics to be confusing rather than enlightening. The character of orreries as astronomical models and the title of Wright’s painting suggest that the philosopher depicted would have been demonstrating phenomena such as day and night and eclipses, and not expounding a theory of attraction or gravitation.

In Wright’s powerful image, the demonstration of the place of the Sun in the universe and the phenomena associated with the Sun (for example, night and day, the phases of the Moon, and eclipses) are especially important. The artistic language of the painter, implementing strong contrasts between darkness and light, underscores the significance of such solar phenomena. Even in 18th-century "Newtonian" England, the heliocentric "Copernican" cosmology afforded Wright an outstanding opportunity to demonstrate the painterly effects of his chiaroscuro, through his depiction of a candlelit Grand Orrery.

Liba Taub is Director and Curator of the Whipple Museum of the History of Science, and Reader in History and Philosophy of Science, at the University of Cambridge.
Future Meetings

Call for Papers


Southern HoST Meeting, 3-5 April 2009, Virginia Commonwealth University, Richmond, VA. Contact Karen Rader or John Powers: karadar@vcu.edu, jcpowers@vcu.edu. Deadline: 1 February 2009. http://www.has.vcu.edu/nssl.


The Johns Hopkins University, Fifth Laboratory History Conference, 4-5 June 2009, Baltimore, MD USA. Contact: Stuart W. Leslie at swleslie@jhu.edu. Abstracts due by 1 November 2008.


The International Margaret Cavendish Society's Conference will be held at Oregon State University, Corvallis, OR, 18-21 June 2009. The theme of the conference is Margaret Cavendish (1623-1673) and Nature. Abstract of no more than 300 words to Lisa Sarason (L.Sarason@oregonstate.edu) by 1 November 2008.


Working on Darwin? Pacific Division AAAS, San Francisco, August 2009. Session sponsored by the History and Philosophy of Science Section of the Division. Please send a tentative title or description to Michele Aldrich: maldrich@smith.edu or Alan Leviton: aleviton@calacademy.org.


Upcoming Conferences


Biology Studies in East Asia Workshop, Kobe University, Kobe, Japan, 5-8 November 2008. Contact: Togo Tsukahara, e-mail: BYZ06433@nifty.com.


IUHPS, Division of History of Science and Technology, Teaching Commission, Symposium: Educational Aspects of the History of Scientific Instruments, Athens, Greece, 18-20 November 2008. Organizers: Michael R. Matthews, m.matthews@unsw.edu.au; Constantine Skordoulis, kskordul@primedu.uoa.gr.


International Network for the History of Hospitals Fifth International Conference: Hospitals and Communities. 1 April 2009, Barcelona, Spain.


HSS Annual Conference. 18-22 November 2009, Phoenix, AZ, USA.

HSS Annual Conference. 4-7 November 2010, Montreal, Canada. Joint meeting with PSA.
The Sarah Lawrence College Social Science Faculty invites applications for a tenure-track position in Science, Technology & Society beginning fall 2009. Specific areas of research and teaching are open. Application must include a cover letter, c.v., three letters of recommendation, two course syllabi, a writing sample, and a copy of graduate transcript. Deadline for applications is 1 November 2008. To apply: https://slc.simplehires.com/applicants/CentralQuickFind-50372.


Yale University seeks a tenure-track Assistant or junior Associate Professor in the history of medicine beginning 1 July 2009. Post-1800 period preferred. Review of applications begins 15 October 2008. Ph.D. by time of appointment. Send c.v., graduate transcript, three letters of recommendation, a statement about work and professional plans, and a sample of scholarly writing to: Professor John Harley Warner, Chair, History of Medicine Search Committee, c/o Ewa Lech, Section of the History of Medicine, Yale University School of Medicine, P.O. Box 208015, New Haven, CT 06520-8015.


The Interdisciplinary Arts and Sciences Program (IAS) at the University of Washington Bothell seeks applicants with two years of teaching experience and Ph.D. in hand at time of appointment in the area of science communications; science and technology policy; history of science; philosophy of science, including bioethics. Further information: http://www.uwb.edu/IAS, or e-mail Gray Kochhar-Lindgren at gklindgren@uwb.edu. Deadline: 24 October 2008. Send applications to: Ms. Pam Del'Pietro, Science Studies Search, University of Washington Bothell, Box 358530, 18115 Campus Way NE, Bothell, WA 98011.

The University of Alabama in Huntsville invites applications for a tenure-track assistant professor in the history of science and technology outside the U.S. Candidates should have Ph.D. in hand by July 2009. Send letter of application, c.v., and at least three letters of reference to Andrew Dunar, Chair, Department of History, University of Alabama in Huntsville, Huntsville, AL 35899. Review of applications begins 15 November. For further information: http://www.uah.edu/colleges/liberal/history.

The Department of History and Political Science at Missouri University of Science & Technology invites applications for a tenure-track assistant professorship for fall 2009 in the History of Science with a specialization in any area of European History. Candidates must have Ph.D. no later than 15 August, 2009. Send letter of application, c.v., graduate transcript, three letters of reference, a teaching portfolio, and a sample of scholarship by 1 December 2008 to: Human Resource Services, Reference #00037478, Missouri University of Science & Technology, 30 West 12th St., Rolla, MO 65409-1050. For assistance, contact hrinfo@msuet.edu.

The Webster Institute for the History of Astronomy at the Adler Planetarium in Chicago announces an opening for a full-time Curator, beginning Fall or Winter 2008. This position would report to the Director of the Webster Institute. Interested applicants are encouraged to discuss this position with Marvin Bolt, Director of the Webster Institute, at the History of Science Society Meeting in Pittsburgh. To apply, email cover letter, resume or c.v., and a salary history to: Marguerite E. Dawson, Director of Human Resources. E-mail: hr-curatorial@adlerplanetarium.org; Tel: 312.322.0591.

St. John's College seeks applicants for faculty positions in African or Native American Studies, the 2009-10 academic year. Faculty members, called "rulers," are expected to teach throughout the all-required curriculum. For more information: http://www.sjohnscollege.edu/about/FAC/Faculty_applicants.shtml.

The Department of Medical Ethics at the University of Pennsylvania School of Medicine seeks candidates with Ph.D. in history and technology policy; history of science, humanities, law, and medicine, to be tenured full-time faculty members to begin 1 July 2009. For further information contact Donna Haraway, Dept. of History of Consciousness, HUM 1, Room 415, UCSC, 1156 High Street, Santa, Cruz, CA 95604. Closing date: 17 November 2008.

The Program in the History of Health Sciences, in the Department of Anthropology, History and Social Medicine, University of California, San Francisco, invites applications for a Postdoctoral Fellowship from candidates with research interests in the history of medicine. Application deadline: 15 January 2009. Fellowship begins as early as 1 July 2009 and no later than 1 September 2009. Contact: Elizabeth Watkins, c/o Kimberly Bissell, History of Health Sciences Program, Department of Anthropology, History and Social Medicine, University of California, San Francisco, 3333 California St., Suite 485, San Francisco, CA 94114-0850. E-mail: bissellk@dahsm.ucsf.edu; Web site: http://www.dahsm.medschool.ucsf.edu/

The Department of History at Auburn University seeks to make up to three tenure-track appointments in the History of Technology, at the rank of Assistant, Associate, or Full Professor. Review of applications continues until the positions are filled. Contact William F. Trimble, Chair: trimbwf@auburn.edu.

Five positions are open in the interdisciplinary research project "Evolution and Classification in the History of Science, Linguistics and Biology" at the Heinrich-Heine-University Dusseldorf. The positions are expected to be filled by the end of 2008. Review of applications begins immediately. Contact Heiner Fangerau: heiner.fangerau@uni-duesseldorf.de.

The Beinecke Rare Book & Manuscript Library at Yale University, James M. Osborn Post-doctoral Research Fellowship in British Studies. The fellowship, for the academic year 2009–2010, is open to scholars of British history, literature, society or culture in any period from the Middle Ages through the end of the 20th century. Applicants must have received their Ph.D. (or equivalent degree) between 1 September 2002 and 14 January 2009. Deadline: 15 January 2009. See http://www.library.yale.edu/beinecke or e-mail: beinecke.fellowships@yale.edu.
HSS Employment Survey, 2007-2008

This report presents a synopsis of the results of the 2007-2008 Employment Survey. In a departure from prior reports, a simplified overview of the results is provided and a more detailed spreadsheet of the findings is available on the HSS Web site. The information focuses on positions advertised from May 2007 to April 2008. The HSS Executive Office sent 110 survey requests, each one representing a job in which the history/philosophy of science, technology, medicine (HP/STM) was either a primary or secondary field of choice, or was one of several areas of possible expertise, or was not a factor. The entire survey was conducted electronically. We received 27 useable surveys. Many of these were incomplete and even counting partial surveys the return rate reflects a trend of declining participation.

Approximately 59 percent of the responses indicated that the position advertised was a newly created or redefined job, with the other 41% being replacement positions. Most of these jobs (67%) were positions in which HP/STM was the primary field of choice, with 7% searching for secondary expertise, 22% looking for HP/STM as one of several fields, and 4% in which HP/STM was not a factor in the search. Half of the positions were filled at the assistant professor level, none at the associate level, and 27% were post-doctoral jobs. A Ph.D. or equivalent in hand at the start of the position was a requirement in 89% of the cases. The total number of applicants for the positions ranged from five to around 154. Only four of the respondents reported on the sex of the applicants, with a large majority stating that their institutions do not allow them to divulge such information. However, over half of the respondents did reveal the sex of the successful applicants - 73% female, 27% male - with just one of the new hires being a minority as defined by the responder’s institution. Some 88% of the successful candidates had a Ph.D. in hand at the time of hire.

In open comments regarding the applicants, one responder wrote that it was an “outstanding applicant pool. Competition was very intense, particularly given that this was a one-year position advertised very late in the year.” Another wrote that “Finding candidates well versed in history as well as history of science has long been a chore. There exists a much too great separation between the two.” None of those replying had suggestions for how we might improve the survey.

We also solicited comments from applicants themselves, through a link on the HSS jobs page (our thanks to all of those who responded). One applicant suggested that “institutions not require so much application material right from the start. Ask for letters, syllabi etc. only of shortlisted candidates.” Others vouched that a better defined position description would be helpful and that hiring committees allow more time between notification and deadlines. One applicant, who reported that the process was a positive one for her, asked that there be some standardization of the calendar for the hiring process, e.g., jobs announced and closed on certain deadlines, so that candidates applying for multiple positions are not in the situation of being offered one job while another job has not even compiled a short list.

Grants, Fellowships, and Prizes

The CHF Beckman Center Visiting Scholar Program: http://www.chemheritage.org or e-mail: travelgrants@chemheritage.org.
The H. Richard Tyler Award for research at the AAN Rare Books Collection at the Bernard Becker Medical Library in St. Louis, MO. Applications: http://www.aan.com/awards.
The University of Oklahoma: The Andrew W. Mellon Travel Fellowship Program. E-mail: kmagruder@ou.edu or mogilvie@ou.edu. http://libraries.ou.edu/etc/histsci/mellon.asp.
INA Grant-in-Aid Program for research at the Vanderbilt University Medical Center Archives, Nashville, Tennessee. Deadlines: 1 March, 1 June, 1 September, 1 December. Applications to: INA Grant-in-Aid Program, c/o CINP Central Office, 1608 17th Avenue South, Nashville, TN, 37212.
California Institute of Technology Grants-in-Aid. Applications reviewed 1 January, 1 April, 1 July, and 1 October each year. http://archives.caltech.edu.
2009 Jerry Shryock Memorial Award encourages research by young scholars in the pre-1700 fields of the history of materia medica, medicinal botany, pharmacy, folklore of drug therapy, and the bibliography of these areas. Correspondence to Victor Bailey at vbailey@ku.edu.
The Bakken Library and Museum in Minneapolis offers travel grants for research in its collection of books, journals, manuscripts, prints, and instruments. The next application deadline is 20 February 2009. Contact: Elizabeth Ihrig. e-mail Ihrig@thebakken.org, http://www.thebakken.org.
The Deutsches Museum, Munich has several scholarships for research projects involving the museum’s vast and heterogeneous collections, and lasting either six or 12 months. The scholarship program is international and interdisciplinary in scope. Application deadline: 15 October 2008, Candidate selection: 3 November 2008. Applications: http://www.deutsches-museum.de/en/research/scholar-in-residence/.
The Shryock Medal Essay Contest is open to students enrolled in a graduate program in any discipline, including medicine, in the U.S. or Canada at the time of submission. For information: http://www.hssonline.org/Awards. Essays must be postmarked or submitted electronically via e-mail (preferred method of submission) no later than 15 January 2009.
**CATEGORY I, HP/STM WAS THE PRIMARY AREA OF EXPERTISE DESIRED**

**PERMANENT**

<table>
<thead>
<tr>
<th>University</th>
<th>Background</th>
<th>Rank</th>
<th>Total # Applicants</th>
<th>Successful Applicants' Gender, Degree, Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cornell University</td>
<td>S, M, D</td>
<td>AST</td>
<td>154</td>
<td>Female, 2001</td>
</tr>
<tr>
<td>Dept. of Science &amp; Technology Studies, Cornell University</td>
<td>S, T, D</td>
<td>AST</td>
<td>100</td>
<td>Female, 2006</td>
</tr>
<tr>
<td>Florida State University</td>
<td>S, P, D</td>
<td>AST</td>
<td>25</td>
<td>Female, 2008</td>
</tr>
<tr>
<td>Georgia Institute of Technology</td>
<td>S, D</td>
<td>FP</td>
<td>75</td>
<td>Male, 1999</td>
</tr>
<tr>
<td>Iowa State University</td>
<td>S, T, M, W, D</td>
<td>AST</td>
<td>40</td>
<td>Female, 2006</td>
</tr>
<tr>
<td>Johns Hopkins University</td>
<td>S, T, D</td>
<td>AST</td>
<td>49</td>
<td>Female, 2001</td>
</tr>
<tr>
<td>Oregon State University</td>
<td>S, D</td>
<td>AN</td>
<td>46</td>
<td>Not offered</td>
</tr>
<tr>
<td>University of California, Berkeley</td>
<td>S</td>
<td>AST</td>
<td>66</td>
<td>Male, 1999</td>
</tr>
<tr>
<td>University of Leeds</td>
<td>S, D</td>
<td>AST</td>
<td>96</td>
<td>Female, 2006</td>
</tr>
<tr>
<td>University of Maryland, College Park</td>
<td>S</td>
<td>AST</td>
<td>89</td>
<td>Female, 2001</td>
</tr>
</tbody>
</table>

**TEMPORARY**

<table>
<thead>
<tr>
<th>University</th>
<th>Background</th>
<th>Rank</th>
<th>Total # Applicants</th>
<th>Successful Applicants' Gender, Degree, Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvard University</td>
<td>S, T, D</td>
<td>PD</td>
<td>5</td>
<td>Male, 2006</td>
</tr>
<tr>
<td>IEEE History Center, Rutgers University</td>
<td>T, D</td>
<td>PD</td>
<td>8</td>
<td>Female, 2008</td>
</tr>
<tr>
<td>The Johns Hopkins University</td>
<td>M, D</td>
<td>PD</td>
<td>30</td>
<td>Female, 2008</td>
</tr>
</tbody>
</table>

**CATEGORY II, HP/STM WAS A DESIRED SECONDARY AREA OF EXPERTISE**

**PERMANENT**

<table>
<thead>
<tr>
<th>University</th>
<th>Background</th>
<th>Rank</th>
<th>Total # Applicants</th>
<th>Successful Applicants' Gender, Degree, Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mississippi State University</td>
<td>O, S, T, W, D</td>
<td>AST</td>
<td>37</td>
<td>Female, 2008</td>
</tr>
<tr>
<td>Virginia Commonwealth University</td>
<td>D</td>
<td>AST</td>
<td>75</td>
<td>Female, 2008</td>
</tr>
</tbody>
</table>

**CATEGORY III, HP/STM WAS ONE OF SEVERAL POSSIBLE AREAS OF EXPERTISE**

**TEMPORARY**

<table>
<thead>
<tr>
<th>University</th>
<th>Background</th>
<th>Rank</th>
<th>Total # Applicants</th>
<th>Successful Applicants' Gender, Degree, Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Planck Institute for the History of Science</td>
<td>S, D</td>
<td>AST</td>
<td>36</td>
<td>Female, 2008</td>
</tr>
<tr>
<td>Penn State University</td>
<td>D</td>
<td>VF</td>
<td>40</td>
<td>Male, 2006</td>
</tr>
<tr>
<td>University of Illinois at Urbana-Champaign</td>
<td>D</td>
<td>PD</td>
<td>20</td>
<td>Male, 2008</td>
</tr>
<tr>
<td>University of Pennsylvania CIGHT</td>
<td>S, T, M, P, D</td>
<td>PD</td>
<td>30</td>
<td>Female, 2008</td>
</tr>
<tr>
<td>USC-Huntington Early Modern Studies Institute</td>
<td>D</td>
<td>PD</td>
<td>20</td>
<td>Female, 2008</td>
</tr>
</tbody>
</table>

**CATEGORY IV, HP/STM WAS NOT A FACTOR IN THE SEARCH**

**PERMANENT**

<table>
<thead>
<tr>
<th>University</th>
<th>Background</th>
<th>Rank</th>
<th>Total # Applicants</th>
<th>Successful Applicants' Gender, Degree, Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Air and Space Museum, Smithsonian Institution</td>
<td>T, MU, PH</td>
<td>-</td>
<td>-</td>
<td>Male, 2000</td>
</tr>
</tbody>
</table>

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**KEY: Desired Background**

A - Archival Training, Experience  
B - B.A. only  
D - Ph.D. or equivalent  
M - Training in History of Medicine  
MD - Medical Degree  
MU - Museum Training, Experience  
O - Other specific training  
P - Training in Philosophy of Science  
PH - Public History  
S - Training in the History of Science  
STS - Training in STS  
T - Training in History of Technology  
W - Ability to teach American or Western History Survey  
- - No reply

**Rank**

ASC - Associate Professor  
AST - Assistant Professor  
F - Fellowship  
FP - Full Professor  
L - Lecturer  
LIB - Librarian  
O - Other  
PD - Post Doctorate  
RF - Research Fellow  
VF - Visiting Faculty  
WM - Wissenschaftlicher mitarbeiter  
- - No reply

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**HSS ANNUAL CONFERENCE**

18-22 November 2009  
Phoenix, AZ, USA

**M.A. AND PH.D. PROGRAMS**

**STUDYING THE MATERIAL WORLD**

**Open Houses:**  
October 13 & November 3: 6 - 8 p.m  
December 7: 11 a.m. - 1 p.m.

The Bard Graduate Center is a graduate research institute focused on studying the cultural history of the material world. The BGC was founded in 1993, and is committed to the encyclopedic study of things, drawing on methodologies and approaches from art and design history, economic and cultural history, history of technology, philosophy, anthropology, and archaeology. Students enrolled in the M.A. and Ph.D. programs work closely with a distinguished permanent faculty of active scholars exploring the interrelationships between works of art and craft, design, places, ideas, and social and cultural practice in courses ranging from the Ancient World to the Twenty-First Century.

**Areas of Special Strength:** New York & American Material Culture; Modern Design History; Renaissance and Early Modern Studies; History and Theory of Museums; Arts of Antiquity, Asia, and Islam.

Application deadlines for full-time and part-time students: January 15, 2009.  
**For more information:**  
Tel: 212.501.3019 • Fax: 212.501.3065  
admissions@bgc.bard.edu • www.bgc.bard.edu

**BGC**  
The Bard Graduate Center for Studies in the Decorative Arts, Design, and Culture  
Office of Admissions: 18 West 86 Street, New York, New York 10024

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History of Science Society Newsletter • October 2008
Several fellowships at the Chemical Heritage Foundation (CHF), an independent research center in Philadelphia, are offered to scholars through CHF’s Beckman Center for the History of Chemistry for the academic year 2009–2010. Recipients of all fellowships are expected to participate in and make a contribution to CHF’s intellectual life. The research collections at CHF, where the chosen fellows will be in residence throughout their fellowship period, range chronologically from the fifteenth century to the present and include 6,000 rare books, significant archival holdings, thousands of images, and a large artifact and fine arts collection, supported by over 100,000 reference volumes and journals. Within the collections there are many areas of special strength, including: alchemy, mining & metallurgy, dyeing and bleaching, balneology, gunpowder and pyrotechnics, gas-lighting, books of secrets, inorganic and organic chemistry, biochemistry, food chemistry, and pharmaceuticals.

Research projects undertaken by CHF fellows must relate in some way to the history and sociology of the chemical and molecular sciences, technologies, and related industries. They can cover a broad chronological range and be interdisciplinary in nature. The more the research project relates to the Library & Special Collections holdings at CHF, the better the chances of obtaining a fellowship.

**Postdoctoral Fellowships**
- 9 Months in Residence; open to PhD scholars (PhD awarded by July 2009)
- Amount of award: $43,000 (+$2,000 research & travel allowance)

**Dissertation Fellowships**
- 9 Months in Residence; open to graduate students at the dissertation stage
- Amount of award: $25,000 (+$1,000 research & travel allowance)

**Short-Term Fellowships**
- 1–6 Months in Residence; open to all scholars and researchers
- Amount of award: $3,000 per month

**Application Deadline:** 15 February 2009

For further information visit [www.chemheritage.org](http://www.chemheritage.org)

The application process will be described on our Web site from October 2008 onwards. All applications must specify which type of fellowship the applicant is applying for and (for short-term fellowships) the number of months of support required. They must include (1) a research proposal of no more than 1,000 words addressing the relevance of the research project of CHF resources, how the work advances scholarship, and how the outcome might be published; (2) a C.V. of no more than three pages in length; and (3) contact information for two references. The applicant must arrange for two letters of reference to be sent directly to CHF and postmarked by the deadline.

**Research Travel Grants**
CHF also offers grants to cover travel expenses for short-term (1 to 4 weeks) research in our Othmer Library and Special Collections of Chemical History. Applicants must reside more than 75 miles from Philadelphia to be eligible. To apply submit a C.V., a one-page statement of the research project and the applicability of CHF’s resources, and one letter of reference (sent directly from the source to CHF). Grants are usually $750/week and are intended to help defray the costs of travel and lodging. Proposals are reviewed upon receipt; there is no deadline. See our Web site or contact travelgrants@chemheritage.org for details.

Send inquiries to:
Fellowship Coordinator, Chemical Heritage Foundation
315 Chestnut Street, Philadelphia, PA 19106-2702
Tel.: 215-925-2222 Fax: 215-629-5269
E-mail: fellowships@chemheritage.org
A number of images created by Joseph Wright (1734-1797) of Derby are very familiar to us, and are often seen as presenting an archetypical vision of "popular" science in 18th-century England. Wright is well known for his "candlelight" paintings - incorporating the chiaroscuro effect utilizing strongly contrasting light and darkness - and his work is taken to represent the power of Enlightenment science (image 1). In particular, his representation of *A Philosopher giving that lecture on the Orrery, in which a lamp is put in place of the Sun* has been characterized by a number of art historians as "Newtonian." (The painting was exhibited at the Society of Artists in 1766, and is currently in the collection of the Derby Museum and Art Gallery, Derby, England.) The centerpiece of the image is the orrery, a form of planetary model; the painting (and associated prints) are the means whereby many people first see an orrery. However, in its own period, the orrery was not conceived of as a specifically Newtonian object; in fact, it was associated most strongly with Copernicus, and his Sun-centered cosmology. The effect of the illuminating lamp, demonstrating the power of the Sun on the people gathered around the orrery depicted in Wright's image, emphasizes the continuing importance of the Copernican conception, even in the age of Newton.

**Planetary Models in the 18th Century**

During the 18th century, instrument makers, lecturers, and demonstrators made, sold, and used a variety of devices that were designed to teach natural philosophy and astronomy. Indeed, there was a proliferation of planetary models marketed by instrument makers with commercial interests, anxious to promote products for the growing consumer market. Particularly in London, instrument makers developed a variety of models, in a range of prices.

*Continued on page 20*