

# Newsletter

## of the History of Science Society

Vol. 50, No. 2  
April 2021

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#### To Be or Not to Be?

Prina G. Abir-Am, Resident Scholar, WSRC, Brandeis University

Editor's note: *Bias and marginalization take many forms, sometimes subtle, and the HSS Newsletter is pleased to present a first-person account by one of our long-standing members, Prina Abir-am, about how certain publication decisions—in this case to not feature on the cover a collective portrait of women scientists which captured the essence of her article—can unintentionally exacerbate bias. While the American Scientist has a policy of not repeating internal artwork on their covers, they wished to publicly acknowledge Dr. Abir-Am's concern that the omission of the women scientists' collective portrait from the cover contradicts the very goal of rescuing them from oblivion, and therefore published her **letter to the editor** in their January-February 2021 issue.*

When a historian of science writes an **invited article for a widely circulated science journal** on a hot topic such as women in science, and when the article's key message is that women who made a major discovery—RNA splicing—are still unrecognized for it more than four decades later, it is understandable that the author hoped that some, if not all, of these women would be proudly displayed on the journal's cover.

It was a challenging case study, which involved several competing teams, major rival institutions and famous



Artistic rendition of a collective portrait of five women commissioned by the *American Scientist* to accompany Prina Abir-Am's article about these women in their September/October 2020 issue. Image used with permission of *American Scientist*.

directors, many co-authors, and especially problematic, often partial, memories, which have been filtered for decades by complex social and power relations. Indeed, the sheer effort required on the parts of both the author and the journal editors, given that the article was arguing against the conventional wisdom—namely that the discovery was made by two male Nobel laureates—suggested that the journal was interested and invested enough to advertise the piece on its cover. The fact that the journal commissioned an impressive artistic

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rendition of a collective portrait of these women scientists and told its readers that this article was the top article in its September-October 2020 issue, could be seen as encouraging signs.

Imagine then, my shock and disbelief when on receiving my copy of the issue, there was no sign of any of the women on the cover. Instead, there was a dingo, an Australian wild animal resembling a dog. Now, I am well aware of various constraints, technical, artistic, commercial, and others, that often prevail in the process of determining the cover choice. Nevertheless, I had difficulty understanding why the journal missed the opportunity to display women scientists who personified both great accomplishment and ethnic diversity and thus, address two of the key issues that undercut the implementation of gender equality in science: the lack of role models for girls and the lack of mentors for women.

There are additional reasons, of special interest to readers of the *HSS Newsletter*, for my anticipating that this article would make the cover.

First, it featured a rare instance of a significant presence, no less than half-a-dozen women of considerable ethnic diversity—from China, India, Israel and the U.S.—in key roles of a major discovery. Moreover, they represented a variety of professional ranks, including independent staff

scientists, postdocs, laboratory technicians, and graduate students. One of these women, a staff scientist on her own funding, who further served as the first or “lead” co-author, was not only ignored for decades, but also egregiously excluded from the **1993 Nobel Prize in Physiology or Medicine**, which was awarded for this discovery. One of these two Nobelists—a man—was in fact, one of three other co-authors in a publication following her in the seminal report for the discovery. Consequently, the story was a perfect case study for exploring the impact of gender bias in science.

Another reason that my article and its treatment by the journal is of particular interest to our community is that it focused on a discovery in the under-studied but highly revelatory topic of RNA splicing. The trajectory I followed, of dissecting the discovery’s public memory as an outcome of epistemic injustice, had an aura of novelty. The long-term prevalence of the way in which recognition has been accorded or withheld, raises key issues about the persistence of systemic social mechanisms that continue to render women scientists invisible despite the passage—almost half a century ago—of affirmative action legislation that mandated equal opportunity in education and research-based careers, regardless of gender or ethnicity.

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## To Be or Not to Be, cont.

Given this rich context, surely the best way for ending decades of oblivion for these women scientists was to display their collective portrait on the cover, as the only part of the journal seen by not only readers but also casual passers-by. Such an exposure, it was hoped, would have not only drawn readers to an extremely interesting case-study, but also have further stimulated the scientific community to restore epistemic justice by providing the recognition withheld from some of these women for decades.

In my experience, a cover story always garners the lion's share of a journal's readership. Not being on the cover could therefore mean that the story reaches a smaller fraction of the journal's readers, typically only those interested in the specific scientific topic discussed in a given article. The choice to feature the dingo over the women's portrait seems to me to have undermined the journal's own professed goal of exposing all its readers to the topic of "women in science"; and this, after they invited me to write specifically on women in science, rather than on my other topics of expertise in the history of science, such as molecular biology, public memory, and science funding.

In seeking to justify the decision not to feature the collective portrait on the cover, the editors at *American Scientist* stated that they tend to avoid portraits on the cover because such a

practice might lead to celebrity promotion. But as I pointed out in my letter to the editors, the legitimate concern with the portraits' potential for celebrity promotion need not have obscured the double standard behind this concern: men don't need to be on the cover to signal their role in major discoveries. For them such a role is culturally assumed, and touted even when, as my article shows, their claim to sole credit for the discovery was anything but self-evident. In contrast, persistent gender bias has long prevented women from being recognized for their key role in various discoveries, including the one discussed in my article.

How can these women scientists be rescued from oblivion, as makers of scientific discoveries, if they are *a priori* banned from the wide public exposure which only a cover can provide? If the journal really wanted to signal that "women's discoveries matter!", then the collective portrait should have been on the cover. Such action would have been appropriate much in the same way that many journals and magazines put people of color on their covers, especially in the wake of the Black Lives Matter movement, which stimulated such choices as both just and timely.

The question that finally persists is whether the non-use of the collective portrait of women scientists on the cover signified an editorial

decision overwhelmed by double standard fears of celebrity promotion; or whether it was influenced by the perception that some influential figures would not welcome the possibility that these women scientists might be finally accepted as their equals. Since my article has clearly named the men involved in the injustice that it seeks to repair, one wonders whether someone else should write another article to explore how the marginalization of women is not limited to allocation of credit in science alone, but also extends to efforts to recover their contributions for history and posterity.

In conclusion, there is no way to restore justice without looking in the eyes of those who personify long-standing injustice. This is why the evocative portrait of these women scientists should have appeared on the cover. All the readers who may have never seen such a contingent of women scientists, at the core of a major discovery, deserve to become acquainted with these six enigmatic, subdued, Mona Lisa-like smiles, reflecting a lifelong experience of scientific accomplishments invariably filtered through gender bias. As Jill Lepore (History, Harvard) said in her recent review of *Wonder Woman 1984*, in *The New Yorker*, "It'd mean more if she wasn't alone, and was part of a bigger fight—a fight for justice."

## 2021 AAAS Sarton Lecture: Pandora's Pandemic

by Luis A. Campos

Editor's note: *The 2021 George Sarton Memorial Lecture in the History and Philosophy of Science at the annual meeting of the American Association for the Advancement of Science (AAAS) was delivered by Luis Campos, probably best known to us as the Secretary of HSS, although his day job is at the University of New Mexico, where he is Associate Professor and Regents' Lecturer of the History of Science. The following **abridged version of the lecture was published in Science** and we have reprinted it here (sans footnotes etc. in keeping with our style) for your reading pleasure. A more detailed account is available in a chapter titled "Strains of Andromeda: The Cosmic Potential Hazards of Genetic Engineering," in the upcoming edited volume *Nature Remade: Engineering Life, Envisioning Worlds* (University of Chicago Press, July 2021).*

Fifty years ago, the blockbuster *du jour* was *The Andromeda Strain*, a film based on a new kind of biomedical thriller that depicted a plague of putatively extraterrestrial origins. The film—directed, perhaps incongruously, by Robert Wise of *The Sound of Music* fame—would in time be hailed by the Infectious Diseases Society of America as the “most significant, scientifically accurate, and prototypic of all films of this genre.”

The genre itself had effectively been invented two years earlier by a young medical school



student, Michael Crichton, whose first novel, *The Andromeda Strain* (1969) served as the film's source material and told the story of a military satellite descending to Earth with a bug from space that—according to a full-page ad in the *New York Times*—caused “the world's first space-age biological emergency.” Selling over two million copies when it was first released, *The Andromeda Strain* drew the American public's attention from the imminent prospect of atomic apocalypse to a new realm of potential biological catastrophe. (Crichton credited the idea for the novel to a comment made by the paleontologist G. G. Simpson about airborne microorganisms high in the Earth's atmosphere.)

Crichton's new narrative style depended on verisimilitude, and what Joanna Radin has called “authenticating detail ripped from leading academic scholarship,” providing reports from

the near-future of technology that often “blurred the line between fiction and reality,” even as they blurred the line between exobiological concerns and the engineering of biology.

Speculations about containment, contamination, and colonization were widespread in the 1960s and 1970s in scientific circles concerned with exobiology, evolutionary biology, and the new prospects for the molecular engineering of biology, as these fields invoked a shared language of breaching “barriers”—evolutionary barriers, species barriers, safety barriers, and containment barriers. While exobiologists raised the prospect of interplanetary quarantines, biologists concerned with more terrestrial patterns of invasion biology and the genetics of colonizing species gathered at Asilomar in 1965, a decade before the famous “Pandora's Box Congress” meeting on recombinant DNA, to discuss what

## Pandora's Pandemic, cont.

they called the “alien’ habitats of invading species,” the dominance of “hypervirulent” strains, and whether such “infections” would take. The concern was clear: how to forestall “biological missteps,” whether intentional or unintentional.

*The Andromeda Strain* entered into this dynamic ecosystem, weaving together concerns over planetary protection and earthly decisions about laboratory biocontainment strategies. Though entirely fictional, the narrative described in the book and subsequent film would come to play a central role in the construction of new and contested futures for molecular biology.

As Crichton’s story began to infect discussions of the potential biohazards of recombinant DNA, journalists struggled to describe the possibilities and the risks of newly available engineering techniques, and often turned to the fictional microbe to capture the issues at stake. On the day after the famous 1975 Asilomar conference on recombinant DNA concluded, the *Boston Globe* trumpeted: “Scientists to Resume Risky Work on Genes: Danger of Andromeda Strain Posed.”

Many biologists, including Asilomar co-organizers Norton Zinder, Paul Berg, Maxine Singer, Sydney Brenner, and later others on the NIH’s Recombinant DNA Advisory Committee sought to counter such sensationalist coverage as “molecular politics,” distracting from actual

engineerable futures for biology, and conflating sober assessments of risk with speculative science fiction scenarios. *Andromeda*-inspired fears about genetic engineering were themselves the emerging disease of concern in many scientists’ opinion.

Within a few years, as debates over appropriate laboratory biocontainment strategies for newly engineered organisms proceeded, the Andromeda strain would be repeatedly invoked, intruding even into conversations on Capitol Hill. At one Senate hearing on proposed regulation of recombinant DNA research, Oliver Smithies, a past president of the Genetics Society of America, began his remarks by noting: “I think we are here because of a very popular modern science fiction novel by Michael Crichton—*The Andromeda Strain*.” After pointedly correcting Smithies’ testimony, which had referred to an outbreak of plague in New Mexico, Jack Harrison Schmitt, a senator from New Mexico and former astronaut, invoked his own literary interpretation of Crichton’s tale about a pathogen from space landing in the American Southwest to suggest the lessons of fiction and the likely outcome of a real-world Andromeda strain scenario. At another hearing, the Secretary of the Department of Health, Education, and Welfare referenced the possible emergence of Andromeda-like pathogens as the appropriate context for considering “strict guidelines in the conduct of recombinant DNA research.”

From the very beginning, the exploration of risk scenarios involving recombinant DNA was an act of both science and science fiction. And the tension was clear: the risk of biological escape and the potential biohazard of newly engineered forms of life was a scientifically grounded possibility worth considering, but it was still useful to distinguish such speculations from sensationalism. Even as *The Andromeda Strain* became fully enfolded into public representations of genetic engineering, its blurry continuum between fact and fiction—the stylistic move at the heart of Crichton’s success—made it difficult to classify concerns about the potential hazard of recombinant DNA as either serious concerns or a source of unsubstantiated fears, infuriating many molecular biologists.

As Andromedan echoes persisted in debates about overly complicated biomedical laboratory design (“Andromeda Design Syndrome”), the story even came to infect liability discussions at top-rank research universities. One internal memo from Stanford’s Office of Technology Licensing, “The Technology and the Threat,” described the appropriate use of licensing to “inhibit scientists from conducting research that might result in an Andromeda Strain being unleashed upon the world.” Science fiction possibilities and scientific futures (not to mention legal and reputational liabilities)

## Pandora's Pandemic, cont.

were difficult to disentangle when it came to the engineering of life at the molecular level.

In a retrospective published in 1995, Berg and Singer concluded that “after twenty years of research and risk assessment, most recombinant DNA experiments are, today, unregulated.... The fear of ‘Andromeda strains’ has disappeared.” And according to *Science* in 2000, “The technology that seemed like science fiction in 1975 is now commonplace.” Andromeda-inspired fears had clearly receded by the dawn of the new millennium—replaced, perhaps, for the next generation by new visions of biological possibility à la Crichton’s *Jurassic Park*.

Still, for some virologists, *The Andromeda Strain* highlighted important concerns. Virologist Cedric Mims, for example, noted in 1995 that a hypothetical Andromeda strain causing a virulent human pandemic “would depend on its transmissibility, and transmissibility is a neglected subject in microbiology.” A virulent human pandemic would not always be hypothetical, however.

“What could be more bone-chilling than a seemingly out-of-control virus leaping from region to region around the globe without a known vaccine to prevent it or slow it down, causing death and economic mayhem along the way?” wrote William Cohan in the *New York Times* at the start of the COVID-19 pandemic in

March 2020. “The coronavirus narrative has the texture and feel of ‘The Andromeda Strain,’ ... come to life.”

In mid-May, as American deaths due to COVID-19 neared 100,000, *New Yorker* film critic Anthony Lane offered for contemporary audiences a fresh perspective on *The Andromeda Strain*, which contained what Lane called “the most alarming thing I’ve come across, in this trade-off between the real and the imagined.” In an eerie presage of our present pandemical predicament, he described a moment in the film when the experts’ concerns are relayed to the White House:

“By then, the disease could spread into a worldwide epidemic.”

“It’s because of rash statements like that the President doesn’t trust scientists.”

“That’s a little *too* close to the bone, I reckon,” Lane remarked, but he felt that the film presciently captured “how harshly politics and medicine can scrape against each other, whenever peril impends”—just as science and science fiction can.

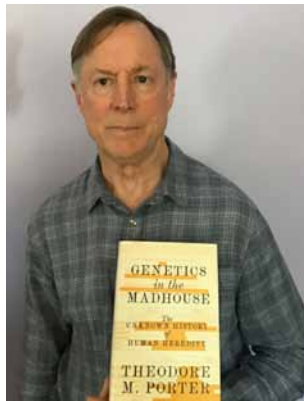
Critiques of Andromedan fantasies at the time of Asilomar were attempts to address the ways in which fictional narratives were seen by some scientists as sensationalism in the service of fearmongering. The concern then was hype;

ours today, arguably, is hoax. But the divisive and difficult dynamics are familiar: when narratives can have life-or-death consequences, which speculative futures come to be authorized as scientific, as appropriately cautious, and which are rendered fictional, or fake? In a moment when the interpretation of evidence has been compromised, such that large numbers of Americans deny the severity or even the very existence of the pandemic, the stakes are all too real.

Over the last year, we have become familiar with the challenge of ensuring a shared collective understanding and response to a rampaging microbe and the hard social work required to sustain mutually agreed upon futures in the midst of a pandemic. Contemporary “debates” over what is permissible or impermissible, a theory or a conspiracy theory, and the contested terrain of speculative futures and their long afterlives, suggest that the ways in which even fictions circulate can reveal important truths. As we proceed into a vaccinated future at (Operation) Warp Speed—our most amazing, cutting-edge science of vaccine development is both wrapped up with legacies of science fiction and also blessedly very real—a better understanding of the intertwined histories of scientific models and science fiction novels makes time a telling tincture.

## Roundtable with 2020 Pfizer Prize Winner, Theodore Porter

Editor's note: *Cited as much for its style or "graceful writing" as for its significance and "expansive scholarship," Ted Porter's **Genetics in the Madhouse: The Unknown History of Human Heredity** (Princeton University Press, 2018) was named the recipient of the 2020 **Pfizer Award**, one of HSS's oldest prizes, awarded annually since 1959 for an outstanding book in the history of science. A panel of distinguished interlocutors including Ken Alder, Soraya de Chadarevian, Nathaniel Comfort, Diane Paul, and Andrew Scull had plenty of questions for the author, to which he responded with the same style and grace he showed in the book.*



*Andrew: What prompted you, a historian of statistical thinking and eugenics, to stray or trespass into "my" world of the asylum? And, how did your background lead you to interrogate the work of asylum superintendents from a radically different perspective than those adopted by historians of psychiatry?*

You and other historians of psychiatry who take an interest in mental institutions have examined their reports as a matter of course, and have noticed of course that they are dense with data. Although a few have tried to use these numbers to get at causes of insanity, most have recognized this as futile. However, the capacity of numbers to structure a flow of information need not depend on their reliability, or even coherence. Somehow I missed the role of numbers in nineteenth-century asylums when I was researching my dissertation on the history of statistics, forty years ago, probably because I failed then to recognize that their work had more in common with public health or even poor relief, than with individualized medicine. It has long been evident that asylums were foci of eugenic concern. When at last I began thinking about these institutions, it seemed almost self-evident that they would have kept extensive numerical records, even if only to satisfy the demands of their public paymasters. Still, I was astonished to discover that records of this kind went back into the eighteenth century, and surprised, too—despite some highly pertinent scholarship in history of medicine—that traditions of medical recording played into this data work. When sufficient evidence was staring me in the face, I got the idea at last. At this point my long experience as a historian focusing on

accounts and statistics kicked in. I still had plenty of surprises in store, but at least I had an idea of how these unimpressive numbers and tables might be made interesting.

*Soraya: Were you attracted to the extensive bureaucratic practices of public institutions like asylums or was your starting point the history of eugenics and the data-driven approach of eugenicists that you then found prefigured in the book keeping and research efforts of asylum directors? I know that initially you also looked at school and prison records—what made you abandon that part of the project?*

I have to say both, for what appear to be alternatives are not easily separated. The most basic premise of statistical reasoning is that large numbers, especially disordered ones, give rise to a spontaneous quantitative order. I argued long ago that this supposition had its origin in bureaucratic compilations, for example of births, suicides, and crimes, which provided the basis for a new social science. Adolphe Quetelet's bedazzlement by the bell-shaped "law of error" so impressed Francis Galton that he enshrined it as the foundation for his new science of human heredity. The ingenuity and determination he put into this pursuit was remarkable, and

## Roundtable with Theodore Porter, cont.

he managed for example to induce people to volunteer the family records he longed for by offering prizes and appealing to family pride and curiosity. He and others snapped up diverse forms of data for the light they could shed on such issues, while the experience of mental hospitals and special schools inspired their superintendents to seek out appropriate tools of analysis. I had been pursuing the reciprocal relations of heredity and statistics for decades when, finally, I came to realize how a focus on data could join the two in a more compelling way. In retrospect it seems quite natural, even obvious, but it came to me as a revelation.

*Ken: What would the author of *Trust in Numbers* say about Genetics in the Madhouse? Was psychiatry's avalanche of numbers a sign of its practitioners' insecurity about the status of their discipline or an attempt to cover their mistrust of their notoriously unreliable and secretive scientific subjects?*

By my reckoning, the kind of standardized calculation emphasized in *Trust in Numbers* was decidedly uncommon until the 1930s, my preferred date for the eruption of a self-denying ethic of impersonal objectivity. Even in manufacturing, as your work shows, the push for standardization was slow and equivocal until late

in the nineteenth century, and I am unconvinced by the evidence for the emergence of mechanical objectivity in the 1840s, linked to photography. The question of objectivity with regard to asylum numbers is a complicated one. Like almost all orthodox physicians, asylum doctors insisted on individualized treatment, which protected them to a degree from responsibility for statistics of outcomes. An epidemic in the institution, however, put it in a bad light, and even a single suicide would be seen as an unpardonable lapse, to be expiated by mountains of paperwork. It was easy, however, to put faith in statistics when cures were plentiful, as they were in America during the 1830s and 1840s, their golden age. In a few states the cure rates briefly ascended to a perfect 100%. But these wondrous numbers, it emerged, were the outcome rather than the basis of asylum optimism. So long as the doctors refused to accept failure, they could put off the registration of failure, recording instead almost nothing but successes. This may, early on, have been done in good faith. When the inevitable downward trend began, they certainly were disappointed, but they did not greatly abuse their power to resuscitate cure rates by pronouncing abundant cures. To be sure, their integrity was encouraged by the limits of their power: admission and discharge of asylum patients was ultimately not a medical decision, but a legal one. The statistical reports printed annually by state

institutions were part bureaucratic routine, part public appeal, and not, in most cases, a cunning scheme to cast off responsibility for medical failure. Amazingly enough, some of these doctors became quite skilled at tracking down and analyzing statistics of health and heredity. These skills, however, were applied principally to eugenic interventions rather than to medical ones.

*Diane: Near the start of your book, you write: "The eugenics movement, which has so often been characterized as an (illegitimate) offspring of Darwinian biology, is better understood as a reaction to the failure of asylum care to check the hyper-Malthusian increase of the institutionalized insane." I don't think that many (or perhaps any) historians have invoked Darwinism as a monocausal explanation but rather as one of several factors that converged in the late 19th century to heighten concerns about the "differential birth rate." It seems to me that you convincingly argue for another and overlooked factor. But why would we have to choose?*

Few things in history are monocausal. My book, despite the offending sentence, depends on a wide literature demonstrating the diverse meanings



## Roundtable with Theodore Porter, cont.

of eugenics. Often, scientific explanations can scarcely be separated from cultural and ideological ones. Still, it has long been customary to introduce eugenics as Galton's brainchild. I look no further than Theodore Porter, *The Rise of Statistical Thinking*, p. 129: "Galton was the founder of eugenics, the evolutionary doctrine..." Many of the best authors on the subject, including Daniel Kevles and yourself, began your books on eugenics and science with a chapter on Galton. I have seen the important role of asylums in this history ascribed to their exceptional *receptivity* to eugenic ideas. I don't suppose that anyone treats eugenics as springing from the head of Galton like Athena from Zeus. My story goes well beyond identifying pre-Galtonian precursors, and beyond alarms about an increasingly ignorant and degenerate population. It identifies a medical and cultural movement, internationally recognized, cultivating its own tools and methods. This perspective opens up new understandings of the best-known eugenic movements in Britain, the U.S., German lands, and Scandinavia. It takes in the scientific aspect, including medicine and statistics, as well as popular manifestations. Certainly the eugenics movement was multidimensional, and proudly so. But I hold to my claim that the statistical registration and investigation of mental illness and "feble-mindedness" amounts to more than another contributing factor. These institutions

were crucial sites of eugenic investigation and intervention, and they shift the point of origin of eugenics backwards in time by several decades.

*Soraya: Genetics in the Madhouse is about data practices rather than about statistics as much of your earlier work. Can you tell us something about your shift in focus from statistics to data?*

It would be easy to say that I am responding to our contemporary obsession with data, and there is an element of truth. But the focus here on data, with its resonances of great data banks, is only part of its background. Although I framed my first book in terms of "statistical thinking," I recognized a bureaucratic dimension to the story, merging natural sciences with social and human sciences. A few years later, inspired mainly by French historians and sociologists of statistics, I realized that in taking for granted the basic processes of registration and tallying, I was missing a basic dimension of statistics. Already at what we might call the primordial level of data registration, as census takers engage with their respondents, there is complexity and even indeterminacy, which must therefore have implications for quantitative knowledge. I used this insight in *Trust in Numbers* to illustrate the complexity of numbers and even data (as I might say now). Statistics has become the tool most

favored by scientists for extracting conclusions from data. By 2005, as I looked to move on from the intense intellectuality involved in researching the multifarious career of Karl Pearson, I was coming to recognize that the very bigness of big data—when data it is big—means it can have a lot to reveal about all kinds of activities, enterprises, and institutions. A project on rating candidates for life insurance helped me appreciate the complex maneuvers involved in something as basic as taking as blood pressure. "And how about human genetics?" I asked myself, when Staffan Müller-Wille invited me to write a framing essay for a Max Planck Institute volume on cultural history of heredity (*Heredity Explored*). I never did write that framing essay, which I found too daunting, but I couldn't resist the temptation to check out where Pearson was getting his human data. That project unfolded into this book, which might just as well have been called *The Data of Heredity*, a continuation of prior work rather than a departure.

*Nathaniel: One of your book's most important contributions, to me, is its deft deflation of the triumphalist grand narrative of Mendelian genetics, which runs in a direct line from Mendel's peas to DNA. That deflation is actually in step with contemporary genetic science, which again works mainly on complex traits*

## Roundtable with Theodore Porter, cont.

*using vast databases—this time, biobanks of DNA sequence. Hence there's an opportunity to rewrite the grand narrative of genetics. What do you suppose a new grand narrative that runs, not from Mendel to the double helix, but from Galton to the genome would look like?*

I don't envision that either of us intends to read Mendel out of this story, yet certainly I share your misgivings about the narrowest version of this story, Mendel to DNA. The most inclusive alternative is the one advanced by Hans-Jörg Rheinberger and his department at the Max Planck Institute for History of Science, "the cultural history of heredity." The seeming simplicity and self-sufficiency of the gene, implying an unproblematic match between snippets of DNA and traits of living things, has often misled geneticists and other humans, though the former, I presume, have long been aware of complexity in these relationships. My research adds a dimension of protest against triumphalist, gene-centered histories, which have had a role in producing and reproducing a gene-centered science. I was not, in fact, thinking of the new genomics when I set about this research for my book, but perhaps it is true, as your question seems to imply, that my history is suited to a genomics that is comfortable with complexity.

*Diane: A major theme of the book is that eugenic thinking predated Darwin and Galton; or as you phrase it, "By 1859, eugenics, in a broad sense, was old hat" (p. 146). Thus, the book might be seen as a contribution to the "long history of eugenics," in which Galton is viewed more as intervening in than initiating a debate over the relative importance of nature and nurture in explaining both individual and group differences and in drawing inferences for human breeding. In that case, what, if anything did Galton contribute that was importantly new to the discussion?*

These stories are partly distinct, but interwoven. Certainly I was pleased when, early in the research for this book, I turned up in the Galton papers a file of responses by asylum doctors to his request for anecdotes involving insane heredity. It shows that he was well aware of the storehouses of hereditary information in mental hospitals, and it led me to suggestive (if inconclusive) evidence that his inspiration for the investigation of genius running in families may well have come from the work of a Victorian asylum keeper, Henry Maudsley. Darwin and his son George relied heavily on data of mental illness and related infirmities to investigate the hazards of cousin marriage. I relied in part on your work for this.

By 1880, the familiar story of inherited insanity was broadening to take in "feeble-mindedness." In England and Scotland, issues pertaining to mental weakness of schoolchildren were growing more and more prominent. In Britain, and to some degree also in the United States, worries about inherited feeble-mindedness and crime attracted scientific attention to a degree that insanity never had. In Germany, with its rising system of research-oriented psychiatric clinics, mental illness maintained its primacy. Galton, a strikingly original man, came to the study of heredity with wider scientific ambitions than any of the alienists I have discussed, and we certainly cannot reduce his work to compiling the records of mental defects. Nevertheless, eugenics after Galton sustained these longstanding obsessions.

*Andrew: Why do you think it took as long as it has for someone from either the history of science or the history of psychiatry to link together the history of statistics, the history of genetics, and the history of mental illness?*

It is famously tricky to pretend to explain what didn't happen. Still, our histories tend to fall in line with present understandings, and biometric, phenotypic approaches to heredity have long been overshadowed by Mendelian ones. Mendel, after 1900, was a big hit with geneticists, and

## Roundtable with Theodore Porter, cont.

scientists typically write the first drafts of the histories of their fields. A history of genetics focused on tallies of patients in mental hospitals was still not the kind of heritage that geneticists wanted for themselves and their students. Biologists are heavily invested in the Mendel story, and I feel some confidence in predicting that the textbook histories will not soon squeeze out their images of Mendel's peas to make room for tables of patient data from asylum records. The textbook author's preference for experimental science was in good accord with the laboratory turn in history of science and STS, which took off in the 1980s. Although histories focused on quantification and statistics also were becoming visible at roughly the same time, they never achieved a comparable prominence. Finally, we should think of psychiatry, which, as Andrew has documented, was mainly Freudian from the 1940s to the 1980s. Psychoanalysis came with its own sense of history, one that did not preserve a fond or lively memory of statistical methods. The pharmaceutical turn in recent decades has restored statistics to a key role in psychiatry, though few, I think, would view statistics as comparable in interest to hormones and patient cases. I proceed on the principle that when a profession invests its hopes in tools it finds boring, something that matters must lie there beneath the surface.

*Ken: Why have historians of the twentieth century sciences of human heredity/eugenics ignored its continuities with the nineteenth century? In other words, why has the discovery/rupture narrative of Mendelian sorting proved so compelling? Are Whiggish accounts really that seductive or is that historians prefer to focus on elite science—e.g., genetics in the laboratory and theory in the journals—as opposed to such messy practices as psychiatry in the madhouse and reams of data in the file-cabinets?*

As we all know, when Mendelism seized the day about 1900, Darwinism, i.e. evolution by natural selection, was decidedly out of favor. Early geneticists such as William Bateson wanted an explanation of evolution that was more biological in the sense of arising from a dynamic intrinsic to the organism. John Herschel had mocked Darwin's "law of higgledy-piggeldy" because it depended on adventitious interactions with the external environment rather than development guided by its own forces. When Karl Pearson's ally W. F. R. Weldon died, leaving the Darwinian biometric project in the hands of an applied mathematician with no formal biological training, the absurdity of this approach seemed clear. The gene-centered story, to be sure, did not by itself remove this objection, as is apparent

from Ernst Mayr's mocking phrase, also targeted at statistics, "beanbag genetics." (Mayr dismissed Pearson in the first volume of *The Growth of Biological Thought* without so much as a footnote.) Historians of biology have often taken their lead from writings of famous biologists, which means leaving phenotypic inheritance in the shadows. I emphasize, nevertheless, that these statistical works on hereditary transmission of insanity did not simply disappear. For example, the nineteenth-century German word for hereditary factor, *Anlage* (or *Erbanlage*), persisted for decades as German for gene.

*Soraya: The history of the failure of the asylum as a reformist institution is written into the history of genetics and eugenics as you tell it. However, eugenics itself was embraced by progressives as well as by reactionaries. Can you comment on these relationships?*

I suppose by now we all recognize that eugenics, in its heyday, was embraced almost across the political spectrum in Europe and America. My argument situates asylum professionals as broadly consonant with the eugenics movement, eugenics *avant la lettre*. The information technologies of the asylum movement, including statistics, were aligned with a spirit of cautious reform in an age of anxiety. By the time the most prosperous

## Roundtable with Theodore Porter, cont.

European states became committed to public provision of asylum care, this experiment was not going well, and by 1880 it seemed a failure. But the train had left the station, and there was no turning back. Progressivism, as it was called in America, was linked—not only in America—to more forceful interventions in treatment of the mad. Andrew calls attention to the violence of interventions, such as pulling all the teeth and cutting away intestines or inducing malarial fevers, which defined an epoch in the history of the asylums. These come into my story as well. It is often not easy to decide who should count as “Progressive,” but most of the characters from this period in my book supported vigorous state interventions, some for reasons that qualify as social, some to keep the riffraff from swallowing up tax money and undermining national greatness. In the eugenic age, mental hospitals were seen by many as the greatest waste of all.

*Diane: I know from an August email exchange with several scholars that you were, remarkably, not consulted during the inquiry that was initiated at UCL in 2018 and resulted in the erasure of Galton’s name from a lecture hall and Pearson’s both from a lecture hall and the Pearson building. In light of developments and reflections since then, what do you now think you would, or*

*should have advised had anyone asked your opinion?*

I was shocked by the superficiality of the report on Pearson, which amounted to little more than a collection of harsh or offensive remarks, quoted without context. Pearson and his children left behind a vast collection of letters and papers, with little or nothing weeded out for the sake of his reputation. Within Pearson’s Nachlass, there is much that appears incriminating to our eyes, and it is much the same with Galton, though he was less combative. Pearson did not hold back from giving his opinion, unalloyed, on scientific matters he cared about. Much of this seemed offensive in his own time, and not only in retrospect. But he was smart and independent as well as fiercely outspoken, and on some issues he took up, most notably on the roles appropriate to women, he went against conventional medical and scientific wisdom by defending their capacities. Also, we, as historians, might want to concede that the most basic claims of eugenics were plausible in their time. Pearson, for all his vitriol, seems to have recognized the delicacy and uncertainty of eugenic anticipations as a basis of policy interventions. Galton and Pearson may yet bear responsibility for eugenic cruelty, even if they never supported eugenic sterilization, and

the UK never adopted it. Pearson, in a famous episode, presumed to measure the social worth of poor Jews as a basis for advising against letting them immigrate. Still, unnamings should not be done lightly. Many of us make our way around campuses whose buildings bear names that for us are no more than names. In that case, removing a name serves only to deepen the obscurity surrounding these people. Also, political actions like these could excite interests we find repellent to propose their own name revisions. The possibility of opposition is not a good reason to abandon our principles, but such actions should be based on serious, intelligent research, reflection, and discussion. As a general matter of principle, I would prefer the installation of short informative plaques over removal of names. That would also have been my inclination for the case at hand.

*Nathaniel: According to an article in The Guardian (19 June, 2020) UCL has pledged to create programs to study the history and legacy of eugenics and the university’s history of eugenics. If you were teaching there about Pearson and Galton, what are three main takeaways you would want to leave students with?*

A thoughtful course on the role of University College in the history of eugenics seems to

## Roundtable with Theodore Porter, cont.

me an excellent response to these debates. If it were put in my hands, I would emphasize first that eugenics was not in any simple way the brainchild of just a few scientists. It arose in alliance with all the institutions I discuss in the first parts of my book. Next, scientists like Galton, Pearson, R. A. Fisher, and J. B. S. Haldane had important roles in shaping the eugenics movement in Britain and beyond. All of them addressed popular audiences as well as their own colleagues. Third, eugenics depended heavily on cooperation and promotion by doctors, teachers, psychologists, and on institutions for managing the poor, sick, and disadvantaged. To the extent they succeeded, it was not the work of a few individuals, but a wide-ranging and loosely-organized endeavor. Eugenics existed in various forms and was associated with a range of political positions, some of which may not appear manifestly distasteful.

*Andrew: In the closing sections of your book, you investigate the murderous Nazi policies toward the mentally ill, and the intellectual connections between Ernst Rüdin and the Rockefeller Foundation, and also between Rüdin and English psychiatrists exploring the connections between genetics and mental illness. Could you comment further on those*

*connections, and elaborate further on your concluding remarks about “genetic astrology” as practiced by contemporary biological psychiatrists?*

The story mainly wraps up with the Nazis, who can scarcely be omitted from a historical book on asylums and eugenics, even if much has already been written. Was the misbehavior of scientists somehow a consequence of scientific failings? We have seen some inclination to link Nazi eugenic practices to deviations from Mendelism. Indeed, Ernst Rüdin’s group in Munich developed empirical tools, relying on phenotypes rather than genes, in part to guide eugenic interventions. But he remained deeply committed to Mendelian explanation despite its almost complete failure as a basis for prediction. He was constantly on the lookout for a clean instance of Mendelian inheritance of a mental condition. It would be fallacious to suppose that either biometricians or Mendelians were distinctively corrupted by Nazi associations, or indeed that Nazi geneticists were scientifically incompetent. Rüdin went back and forth on Mendelian factors for mental defects. Until international politics made it impossible, he and his colleagues kept up relations with British and American psychiatric geneticists. He was funded for many years by the Rockefeller Foundation, and admired by prominent

human geneticists in England who had no truck with Nazi politics. After the war, when genetic psychiatry mostly fell out of favor, its remaining advocates looked to Rüdin’s work for support, refusing to believe that it could have participated in the psychiatric atrocities of the Third Reich. Indeed, he managed to close the circle, from respected scientist to advocate and participant in racial purity campaigns to postwar psychiatrist with his reputation mostly intact, in the United States as well as in Germany. The triumph of data-driven, pharmaceutically-based psychiatry again undercut the pursuit of health through self-understanding. Established science has not wanted to dabble with human meaning, and gene talk ranks among the most effective ways of disarming it.

## Innovations in Education

### A History of Science Class about Favorite Things

by Greg Radick, Kat Rawling, Jamie Stark, and Adrian Wilson

Editor's note: *Speak of a gift that keeps on giving! The different iterations or avatars taken on by a history of science course built around objects at the University of Leeds is precisely such a gift. The Newsletter is delighted to hear from different members of the HPS faculty at Leeds about how this course was conceived and the different functions it has performed over the years.*

#### Greg Radick:

When a group of staff and students founded the University of Leeds Museum of the History of Science, Technology and Medicine in 2007, we had three goals in mind, beyond simply conserving and showcasing the collections dotted around the University. One was to use the objects to improve our teaching. Another was to encourage research on and around the objects. And the third was to increase our ability to bring the insights and excitement of the history and philosophy of science to wider audiences.

In the early years our efforts on this last front mainly involved hosting visits from local



schools. But as the Museum gained a more secure footing institutionally, our ambitions grew, and we began to consider something grander. The idea of a lecture series around the objects came, of course, from the landmark 2010 BBC radio series *A History of the World in 100 Objects*, by the then Director of the British Museum, Neil MacGregor. As we talked about what we might do, a plan gradually took shape: to offer a series of 20 public lectures, at roughly one a month during term time, focused on objects chosen either because they are important in their own right—e.g., the Astbury X-ray

camera, used in taking the first X-ray photos of DNA; the prototype MONIAC, a pioneering computer which modelled national economies in water flowing through tubes—or because they can be used illustrate themes that we wanted to address: an air-pump, as emblem of the search for laws of nature; a two-headed fish, as an occasion for talking about monsters as a problem for pre- and post-Darwinian biology.

We launched the series in January 2016, with a lecture on a sixth-century BCE horse-and-rider figurine from ancient Cyprus. Throughout the

## Innovations in Education, cont.

two years the objects continually pushed us to think about the scientific past, and how to present it, in new ways. They also enchanted our audiences, who stayed around after each lecture to look more closely and ask further questions—which in turn suggested to us that perhaps here we had the beginnings of a new undergraduate module.

### Adrian Wilson:

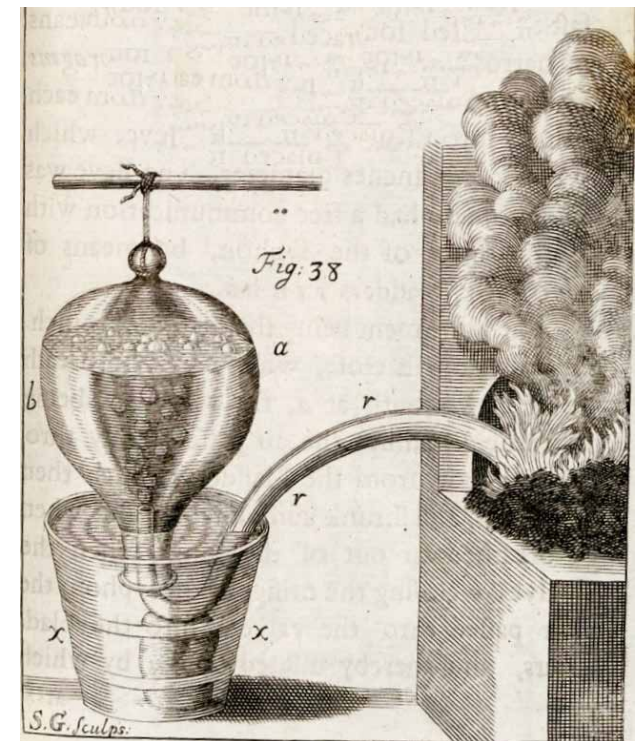
I first got the undergraduate course going (2017-18), but I claim no credit for the idea. That—including the master-stroke of making half the objects material, half textual—came from Jon Topham, himself inspired by the original lecture series. And I took advice from Leeds colleagues as to what to include—so thank you in particular Mike Finn for Aphra Behn's translation of Fontenelle's *Conversations on the Plurality of Worlds*, which proved very popular with students.

Not all courses “fly” on their first outing, but this one did: student feedback was glowing. I think that was because the objects gave a sequence of foci—from Vesalius' *Fabrica* (our wonderful library has a copy) to Dorothy Hodgkin's model of the insulin molecule. Yet each of my lectures spent much more time on “before the object” and “after the object” than on the objects themselves. For instance, Lister's

microscope was bookended by eighteenth-century microscopy (before) and the cell theory (after). One of the great things about this format, then, is that it can be used in many different ways, according to the preferences of the teacher. But there was one aspect that didn't go well at all: assessed student presentations in seminars. Non-presenting students simply didn't prepare (so no discussion); presenting students were very nervous and gabbled their presentations; and the content of the presentations was, with one or two exceptions, rather weak. So Jamie Stark, who taught the module the following year, replaced that with a blog post.

A favorite object? Oddly, I'm picking Steven Hales's pneumatic trough (to use its later name). Oddly, because that was the least popular text with students—it's quite a challenge to make Hales intelligible and interesting, and it's one in which I didn't succeed. But that's my choice, because teaching Hales in this framework led me to an epiphany that not only Hales, but all eighteenth-century investigators into natural phenomena, were doing something that differed radically both from the activities of their seventeenth-century predecessors and nineteenth-century successors. More than two years later, I'm still exploring the implications of this realization. *History of Science in 10*

*Objects* was an education for me, as well as for the students, and remained a living module as changes were implemented in subsequent years.



The apparatus designed by Hales (one of many depicted in his *Vegetable Staticks* of 1727) that would later be termed the “pneumatic trough.” Photo courtesy: <https://www.pftforum.com/history/stephen-hales-pneumatic-trough-1727/>

## Innovations in Education, cont.

### James Stark:

I taught the module for its second outing in 2018-19. The objects featured in the course were a mixture: some well-known, others obscure, and only a proportion readily available to consult in physical or digital form. Changing the form of assessment from presentations to three 500-word blogs posts, each on one of the objects, challenged students to make the objects and their significance hit home to a non-specialist audience. Many of these pieces of work were really excellent, and used the objects—such as the midwifery forceps or Fontenelle’s *Conversations on the Plurality of Worlds*—as starting points for much broader and creative discussions about themes including gender in medicine, science fiction, and the gendering of scientific narratives. I expanded the scope of the first session of the module, focused on the Vesalius *Fabrica*, by including other related medical texts, including Leonhart Fuch’s *De humani corporis fabrica epitomes* (1551) and Vesalius’ own *Opera omnia anatomica et chirurgica* (edited by Albinus and Boerhaave and published in 1725). We are truly blessed at Leeds to have copies of these incredible texts, and the experience of handling them all was clearly inspirational for the students in both this and other years.

My favorite object was undoubtedly the Voltaic pile, simply because it highlighted connections across what we would recognize as distinct scientific “disciplines,” and the significance of happenstance in scientific discovery. The simplicity of the object—“Is that *really* a battery?”—took the students by surprise, and they were equally amazed at its impact on chemical discovery at the Royal Institution in the hands of Humphry Davy.



This particular voltaic pile (c. 1820) was presented to Michael Faraday as a gift from Alessandro Volta.” Image credit: The Science Museum, London.

In some ways it was disappointing not to be able to teach the module again, but I truly believe that in multiple sets of hands the course has

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## Innovations in Education, cont.

become much more than it ever could if owned by just one person.

### Katherine Rawling:

I first taught the module in 2019-20 and saw the potential in the approach and content immediately. I rely on photographic objects in my own research so this was a great opportunity to introduce students to the value of material approaches to historical sources. Even though half the objects were in fact texts, I encouraged students to think of those publications like the *Fabrica* or Darwin's *Origin* as objects too, objects that were handled, annotated, and circulated, with physical features like size and weight that could all inform their meaning. Last year my favorite object was the first in the series. The *Fabrica* was a perfect place to start. Taking the students (some of whom hadn't studied history since high school) to see and handle the actual object in the Special Collections of the Brotherton Library engaged them from the outset and foregrounded my emphasis on materiality—they could see the size and scale for themselves, the binding, marginalia, stamps of ownership—all of which prompted useful conversations about the status and dissemination of scientific knowledge. My favorite object in 2020 has been Bertha Röntgen's hand viewed through X-ray, which prompted lively seminar discussions about

death, visualization and the perils and promise of new technologies.



The bones of a hand with a ring on one finger, viewed through X-ray. Photoprint from radiograph by W.K. Röntgen, 1895. Photo from [Wellcome Collection](#). Attribution-NonCommercial 4.0 International (CC BY-NC 4.0)

The first time around, I brought in examples of the objects for the students to handle at every opportunity. Teaching this module in 2020-21 under current pandemic restrictions, however, has meant a change to my teaching methods; lectures are delivered in three parts, resources need to be online and so on. I have relied on the excellent digital resources like high-quality photographs, 360° simulations, digitized copies, and videos available through many libraries, museums and collections. It is also more important than ever to supply the students with information like object dimensions and material composition to help convey a sense of the objects' physical properties. I've used this as an opportunity to prompt further discussions about digitization, absence and presence, materiality and access.

I emphasize from the very first lecture and throughout that *our* 10 objects should not be regarded as *the* definitive list—I want students to be aware that the narrative changes according to the objects chosen, so there is not one list but many, each relating to different priorities or agendas. Changes this year include devoting the first session to material culture in historical practice, to provide students with a secure basis for studying the list of objects in the following weeks. It was essential to replace some objects with new ones to diversify the list, introduce

## Innovations in Education, cont.

more perspectives and viewpoints, and tackle subjects like gender, disability, colonialism, and power. New objects for 2020-21 include the Mercator projection, the Medresco hearing aid, Herschel's telescope, the contraceptive pill, and the now familiar face mask.

I spend time focusing on the significance and relevance of the chosen objects to much broader issues—I encourage the students to think of each object as a window revealing a bigger picture, a model that proves useful for their blog post assignments and seminar discussions. In this way, the midwifery forceps become a way to think about women's experiences as mothers and practitioners and the wider medicalization of childbirth; the first X-ray photograph prompts in-depth discussion of the complex relationship between technologies and bodies; the face mask requires students to consider risk, responsibility, and scientific authority; and the Mercator projection encourages them to reflect on how "objective" knowledge is produced and disseminated. Relating individual objects to wider themes allows us to make links and comparisons between seemingly disconnected objects and brings cohesion to a varied list of items ranging from the *Fabrica* to the Pill.

### Greg Radick:

Alongside the module in 2020-21 the initial lecture series has gone on to have a second life, thanks to the video recordings from each of the original lectures. During the COVID-19 lockdown in spring 2020, when so many people were stuck at home, and so many teachers were eager for quality online content, it occurred to us that the videos—languishing quietly on YouTube—could, if suitably repackaged, form the basis of a lively and accessible self-guided introductory course in history and philosophy of science. With help from the University's Digital Learning Team, and the support of the lecturing team (a mixture of staff, visiting fellows, postdoctoral fellows and postgraduate students), we launched the series in this new format in May 2020, and were delighted by the international uptake. **Anyone interested can still sign up here.** More recently, **we have released a streamlined, more student-friendly version, which can be accessed here.** Surely a Netflix boxset can't be too far off....



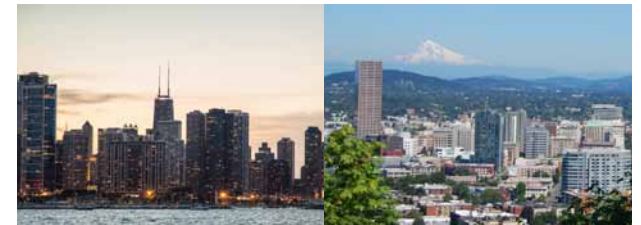
## Plan Ahead Future HSS Meetings



**2021**

**New Orleans, LA**

SHOT and HSS are working toward meeting together in New Orleans in 2021.



**2022**

**Chicago, IL:  
November 17-20**

**2023**

**Portland, OR:  
November 9-12**

## Innovations in Education, cont.

### And a bonus item...

Editor's Note: *In November 2020 the Centre for the History and Philosophy of Science at Leeds launched a nationwide essay competition based on the online lectures about the objects, inviting high-school (year 12 and 13 A-Level) students to send in 800-word essays about which of the objects they considered to be the most important, and why. The winner of the prize was Aarusbi Malik (King Edward VI Camp Hill School, Birmingham) for her essay on the stethoscope. The two runners-up in the competition were: Sara Hamdani, (Xaverian College, Manchester) whose essay was on the collections' oldest object, a 7th century horse and rider figurine from the area around modern day Cyprus, and Ruby Kline (West London) on the Biblical herbarium. All essays may be read on the Centre's blogsite. The prize-winning essay is reproduced here with permission from the Centre & author.*

Medicine is constantly evolving: within the past 2 years there have been major advancements in the treatment of many conditions—such as individualized therapy for leukemia, therapeutic developments for Parkinson's disease, and now, manufactured only in the past 10 months, a whole new vaccine for the infamous coronavirus. These developments have improved

the health of many and given great new research prospects for scientists to expand on. This all depended on our ability to find anatomico-clinical correlations between the symptoms and causes of disease, therefore exemplifying the great significance of the stethoscope, and why I have chosen it to be the most important out of these 20 fascinating objects.

The creation of the stethoscope symbolizes the change in attitude to medicine in the 18th and 19th century—from one majorly patient-led and symptoms based to one doctor-led and anatomically based. Because of this, medicine was able to crack open its cocoon and treat the roots of diseases, instead of identifying the symptoms as the problem itself—resulting in enhanced treatment and care for those infirmed. The use of the stethoscope by Laennec from 1819 clearly shows a forward thinking approach, looking inside the body for an explanation of the symptoms: for example, when used to detect abnormalities in the heart's rhythm, or something irregular with the lungs—something which had already started with uses of percussion after 1761. This was before the publication and approval of Germ Theory by Pasteur and Koch, and therefore there was much less empirical evidence for using anatomically based medicine. However, with Corvisart taking it up and teaching percussion



One of five known stethoscopes made by Rene Laennec, the inventor of this medical instrument in the nineteenth century. Photograph courtesy the Museum of History of Science, Technology and Medicine, University of Leeds.

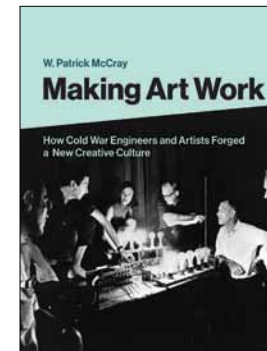
and auscultation in a newly established medical school in Paris after the French revolution, it gained momentum and there was much reason to support the idea. However, the stethoscope being a tangible object gave this new way of practicing medicine—linking the possible post-mortem causes to the living patient—a clear symbol. This change revolutionized how we think of disease—instead of viewing someone's loss of vision as a sudden blindness that the patient would just have to now deal with, we could see it as a disease of the optic nerve and provide some opportunity for fixing. This new information permitted us to find new and exciting ways of dealing with these problems, and improving the quality of life of many people to come. Without the stethoscope, it may have been a long time until doctors were able to 'look' inside the body and treat diseases with more success.

## Innovations in Education, cont.

The stethoscope also shows us how far we've come in the way of technology, and the way we view improvements in science. The image of a stethoscope has changed so much since Laennec's first wooden cylindrical prototype, into the snaked, comfortable and efficient tube of today. This can tell us so much about how we've progressed, and how something from 200 years ago can still play an important part in society today—and therefore the significance of every little discovery and stroke of genius. It can tell us so much about the importance of the way we view discoveries—not to be satisfied with the first solution we get, and to keep probing until we get a better response. People at the time had accepted that hospitals could rarely save someone's life when infected with a disease—they had accepted that a short-lived remedy would be given and the disease would eventually take the person's life. But with the use of the stethoscope and the simple theory behind its purpose, doctors could do so much more than provide palliative care, and could actually get to the root of the disease. They could find the source of the fever, or loss of vision, or swelling, give it a name and give it a remedy. And this can still be applied to today—people are still always trying to find a more efficient, a more productive method to improve quality of life in so many ways; we will never reach the limit of knowledge, and the stethoscope can exemplify

this. It has also given way to many other medical instruments with similar purposes and to take a 'peek' inside the body—for example, an ultrasound or radiograph, which we all know the humbling services of.

Although the other objects are fascinating tokens of our past and can raise so many questions about the way we conduct scientific studies, there is nothing more important than our own health and the health of those around us. When it all comes down to it, life isn't about whether science and art are distinct; it isn't about whether a certain scientific model was accurate enough; it isn't about whether coral can be seen as a colony. What matters is the way we spend our lives, and being able to spend that little bit longer with your loved ones. We may as well be able to enjoy that time, right?"



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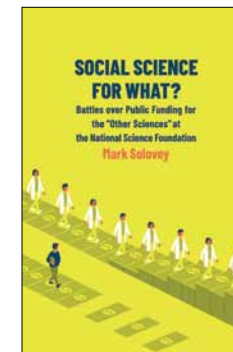
### Social Science for What?

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**Mark Solovey**

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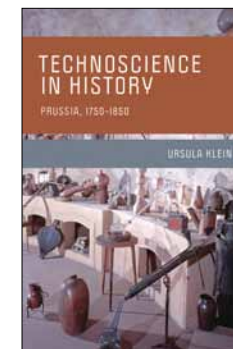
### Technoscience in History

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**Ursula Klein**

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# Member News

**Warwick Anderson** (University of Sydney) published “**The Model Crisis, or How to Have Critical Promiscuity in the Time of Covid-19,**” in the *Social Studies of Science* (online February 16, 2021), which is a critical inquiry into the histories and practices of disease modeling, focusing on the COVID-19 pandemic.

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**Kenneth Caneva** (University of North Carolina at Greensboro (retired)) is working on *Helmholtz and the Conservation of Energy: Contexts of Creation and Reception* (Cambridge, Mass.: MIT Press, 2021), which is scheduled for publication in August of 2021.

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**Paul Cech** published “**Sociological Theories of Crime.**” In *The SAGE Encyclopedia of Criminal Psychology*, edited by Robert D. Morgan, 1421-23. Thousand Oaks: SAGE Publications, Inc., 2019.

.....

**Ryan Dahn** (*Physics Today*, American Institute of Physics) recently started a new position as the Books Editor for the magazine *Physics Today*, where in addition to editing reviews he will also contribute history-related articles.

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**Christopher Gainor** published *Not Yet Imagined: A Study of Hubble Space Telescope Operations* (Washington, D.C.: NASA History Division, 2020).



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**Judith Grabiner** (Pitzer College) was awarded the 2021 **Albert Leon Whiteman Memorial Prize** for her outstanding contributions to the history of mathematics, in particular her works on Cauchy, Lagrange, and MacLaurin; her widely-recognized gift for expository writing; and a distinguished career of teaching, lecturing, and numerous publications promoting a better understanding of mathematics and the significant roles it plays in culture.

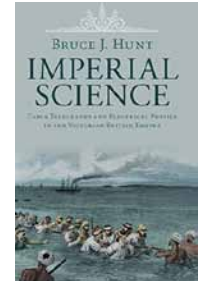
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**Nick Hopwood** (University of Cambridge) has been awarded a **Leverhulme Major Research Fellowship**, for three years from September 2021, to finish the research for and to write *The Many Births of the Test-Tube Baby*.

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**Bruce Hunt** (University of Texas) published *Imperial Science: Cable Telegraphy and Electrical Physics in the Victorian British Empire* (Cambridge: Cambridge University Press,

2021). It shows how deeply British work in electrical physics in the second half of the 19th century—from the development of the ohm to the formulation of “Maxwell's equations”—was entwined with the growth of the network of submarine telegraph cables that bound together the British Empire.



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**Margaret Jacob** (University of California, Los Angeles) was elected as a fellow by the American Association for the Advancement of Science. Additionally, Jacob authored “**Reflections on Enlightenment and Modernity: In our Plague Year,**” *International Journal for History, Culture and Modernity*, v.8 issue 3-4, (2020); co-edited *Clandestine Philosophy: New Studies on Subversive Manuscripts in Early Modern Europe, 1620–1823* (University of Toronto Press, 2020); and wrote “The Left, Science Studies, and Global Warming,” in Michael J. Thompson and Gregory R. Smulewicz-Zucker, eds. *Anti-Science and the Assault on Democracy. Defending Reason in a Free Society* (Amherst, NY. Prometheus Books, 2018), pp. 123-130.

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## Member News, cont.

As part of his role as Associate Dean of Social and Ethical Responsibilities of Computing in MIT's new Schwarzman College of Computing, **David Kaiser** is delighted to announce the publication of a new online series: **the MIT Case Studies in Social and Ethical Responsibilities of Computing**.

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**Paige Madison** has begun a postdoc at the **Natural History Museum of Denmark**, University of Copenhagen. She will be assisting museum director and HSS member **Peter Kjærgaard** in designing a new gallery about the human family for the new museum, currently under construction. Madison and Kjærgaard are also kickstarting a research initiative on the topic of human evolution in the Anthropocene. Additionally, Madison published "**Characterized by Darkness: Reconsidering the Origins of the Brutish Neanderthal**" in the *Journal of the History Biology* 53, (2020): 493–519.

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**Ronald Mickens** published "**The Roles of SIR Mathematical Models in Epidemiology**" in the American Physical Society, Forum on the History of Physics (NEWSLETTER, Vol. XIV, no. 5 (Fall 2020): 2, 10-15) with co-author **Talitha Washington**, and "**Approximate Rational Solutions to the Thomas-Fermi Equation**

**based on Dynamic Consistency**" in *Applied Mathematics Letters*, Vol. 116 (2021).

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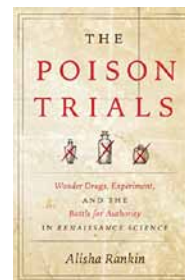
**Vivek Neelakantan** published "No Nation Can Go Forward When It Is Crippled by Disease: Philippine Science and the Cold War, 1950s," in *Southeast Asian Studies* 10, No. 1 (2021), forthcoming, as well as "**Pandemics in Southeast Asia: A Return of National Anxieties**," in *Isis Current Bibliography* (2021), accepted.

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**Tiffany Nichols** (Harvard University) was elected as a Member-at-Large for the American Physical Society's Forum on the History of Physics. Her three-year term begins April 2021.

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**Alisha Rankin** (Tufts University) published *The Poison Trials: Wonder Drugs, Experiment, and the Battle for Authority in Renaissance Science* (Chicago: University of Chicago Press, 2021).



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**Seth Rasmussen** (North Dakota State University) published *Archaeological Chemistry: A Multidisciplinary Analysis of the Past* (Newcastle Upon Tyne, UK: Cambridge

Scholars Publishing, 2020), as well as "**From Polymer to Macromolecule: Origins and Historical Evolution of Polymer Terminology**" *Bulletin for the History of Chemistry* 45, no. 2 (2020): 91-100.

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**Whitney Barlow Robles** (Dartmouth College) published an article titled "**The Rattlesnake and the Hibernaculum: Animals, Ignorance, and Extinction in the Early American Underworld**" in the January 2021 issue of the *William and Mary Quarterly*.

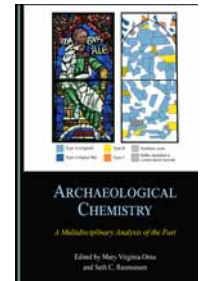
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**Neeraja Sankaran** (*HSS Newsletter*) announces the publication of her book *A Tale of Two Viruses: Parallels in the Research Trajectories of Tumor and Bacterial Viruses* (University of Pittsburgh Press) in March 2021.



She also co-authored the following:

With **Kersten Hall**: A **scholarly translation of Friedrich Miescher's 1871 paper** describing the discovery of DNA in its original guise as nuclein ("Über Die Chemische Zusammensetzung Der Eiterzellen," *Medicinisch-Chemische*



## Member News, cont.

*Untersuchungen* (1871) 4: 441–60), accompanied by a commentary titled “**DNA translated: Friedrich Miescher's discovery of nuclein in its original context**,” *British Journal of History of Science*.

With **Robin A. Weiss**: “**Viruses: Impact on Science and Society**.” In *Encyclopedia of Virology*, 671–80. Elsevier (2021).

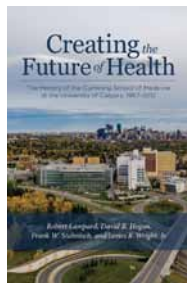
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**Mark Solovey** (University of Toronto) is the co-editor along with **Christian Dayé** *Cold War Social Science: Transnational Entanglements* (New York: Palgrave Macmillan, 2021), which explores how the social sciences became entangled with the global Cold War.



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**Frank Stahnisch** (University of Calgary) received a 2021-2022 Annual Fellowship from the **Calgary Institute for the Humanities** (CIH) at the University of Calgary, Alberta, Canada. Additionally, he helped publish *Creating the Future of Health - The History of the Cumming School of Medicine at the University of Calgary*,



**1967-2012** (Calgary, AB: University of Calgary Press, 2021).

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**Laura Stark** (Vanderbilt University) contributed a chapter on “Accounting for Esther Smucker: The Mennonite Church, the US National Institutes of Health and the trade in healthy bodies, 1950-70,” in **Accounting for Health: Calculation, Paperwork, and Medicine, 1500–2000** (Manchester University Press, 2021). HSS members **Andrea Rusnock** and **Ted Porter** have also contributed chapters to this volume.

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**Chris Young** has taken an extended academic leave from teaching at Alverno College (Milwaukee, WI) to work as a consultant for the **Urban Ecology Center** (also in Milwaukee) where he has served as a volunteer for the past few years, helping the Center to extend the reach of their mission by sharing the distinctive model for engagement for children, families, and community members of all ages with cities around the world.



**Just earned your PhD in the history of science? Congratulations! Here's a free e-membership to HSS.**

Leaving the student world can present challenges.

The HSS would like to recognize your signal achievement by providing a **free electronic membership (one year)** to those who graduated in 2019 or in 2020.

Please go to <https://subfill.uchicago.edu/JournalPUBS/HSSpromotion.aspx> for details.



# HSS News

## My Final Thanks

by Jay Malone, [jay@hssonline.org](mailto:jay@hssonline.org)

Editor's note: *For over 22 years now Jay has been the behind-the-scenes motive force and public face and voice of HSS. So it is with a sense of something unreal, and also deep reluctance that I share the news that such will no longer be the case. I'm sure readers will join me in wishing Jay the best in his future endeavors, but meanwhile, here's a short but heartfelt message from him.*

Shortly after the pandemic began, **Charles Rosenberg reminded us** that such events create stress tests for societies. These kinds of total disruptions reveal the fault lines in all types of collective endeavors, but pandemics can also lead to deep personal reflection and it is in that vein that I have decided to pursue a different path, which is another way of saying that I am stepping down as Executive Director. I am hoping to make the transition as smooth as possible and know that the hundreds of volunteers who dedicate so much of themselves to the HSS will help it continue to thrive.

One thing that has always bothered me during my life as a historian of science is that Tom Kuhn died right before I defended my dissertation. It probably was just a coincidence, and I'm not even sure that Kuhn died the exact day that I defended, but I do remember my dissertation advisor telling me the news right

before my defense. It seemed ominous, and in my belief that the world revolved around me, I have been haunted by the possibility that giving me a PhD was a harbinger of doom for the history of science.

And it seemed that the fates were aligning specifically against the HSS because less than two years later, that same advisor urged me to apply for a newly created position: **Executive Director of the HSS**. That was over 22 years ago, and despite my repeated and regular mistakes, large and small, the Society has somehow endured. The most likely explanation for that endurance is that the volunteers, those who have given so selflessly of their time, have proven the difference. It has been my privilege to work with people who are not only whip smart, but who have been kind and totally committed to the Society. It really has been a thrill to foster interest in the history of science with them; they made the difference in a job that can best be described as "relentless." They made it bearable in the worst of times and deeply fulfilling in the best of times.

So, I just want to close with a sincere thank you to the many members with whom I've worked over the decades. You have been inspirational beyond words and have made life on this "mostly harmless" planet so much more interesting. I am grateful.

—Jay

## 2021 Joseph H. Hazen Lecture in New York



The 2021 **Joseph Hazen Lecture** is scheduled for 23 April at 2 pm (14:00) EST. Rather than a standard lecture, the session is planned as an interactive encounter on “How to turn your PhD into a Netflix series.”

The main speaker is **Latif Nasser**, co-host of the award-winning WNYC Studios show *Radiolab* and host and executive producer of the Netflix science documentary series, *Connected*. Commentary will be offered by **Sarah Pickman** at Yale and **Sarah Qidwai** at the University of Toronto, who will be joined by a special guest interlocutor **Ingrid Ockert**, communications coordinator for the Workforce Development and Education Department at Lawrence Berkeley National Laboratory, and **Alex Wellerstein**,



## HSS News, cont.

Director of Science and Technology Studies in the College of Arts and Letters of the Stevens Institute of Technology will moderate.

Our deep thanks to Jean-François Gauvin, Chair of the HSS Committee on Education and Engagement, and to the many others who have worked so diligently toward organizing this lecture.

### **Isis Submissions and Gender During the Pandemic**

The co-editors of *Isis* have **updated their report** from August of last year on the effect that COVID-19 has had on submissions, and its disproportionate impact on women. Six months later, the striking gender gap that arose in the middle months of 2020 has narrowed considerably, but new challenges have arisen. The *HSS Newsletter* hopes to feature a longer conversation about the meaning and implications of this report in a future issue. Stay tuned.

### **Statement from HSS Committee on Advocacy**

As historians of science, we know that robust scholarly institutions have been a foundation for the pursuit of knowledge, the education

of technical experts and a democratic public, and the benefit of society. We also know that universities are expressions of the values and priorities of those who govern them. Only through the wise stewardship of faculty dedicated to research and instruction will universities advance these high purposes. Consistent with its endorsement of the American Association of University Professors statement on Principles of Academic Governance during the COVID-19 Pandemic, the History of Science Society views with grave concern the unilateral actions that administrations of some universities have taken in response to the COVID-19 pandemic, especially those affecting curriculum and instruction, labor and employment conditions (including declarations of financial exigency, furloughs, and terminations), and health protocols. HSS also acknowledges and applauds those universities that have upheld shared governance under challenging circumstances. Moreover, on behalf of historians of science working in museums, archives, government agencies, research institutes, firms, and as independent scholars broadening the impact of our field, we strongly encourage these institutions and communities to maintain or strengthen support for freedom of inquiry, job security, and inclusive decision-making processes.

### **HSS Congratulates New AAAS Fellows!**

The following HSS members were formally inducted as Fellows of the American Association for the Advancement of Science on 13 Feb 2021. **The event may be viewed on YouTube.** The **full list of Fellows can be found on the AAAS website.**

#### **SECTION ON HISTORY AND PHILOSOPHY OF SCIENCE**

**Colin Allen**, *Univ. of Pittsburgh*

For his significant contributions to philosophy of science, philosophy of biology, philosophy of cognitive science, and in logic, computation and artificial intelligence.

**Rachel Ankeny**, *Univ. of Adelaide (Australia)*

For her contributions to our understanding of the foundational roles that organisms play in biological research and her leadership in history and philosophy of science.

**David Cassidy**, *Hofstra University*

For distinguished contributions to the fields of history and physics, his broader scholarship linking physics and societal challenges, and communicating science to the public.

## HSS News, cont.

**Marsha L. Richmond**, *Wayne State Univ.*

For foundational contributions to the history of evolution and genetics, particularly the role of women investigators, and distinguished service to the history of science profession.

### SECTION ON MATHEMATICS

**Karen Hunger Parshall**, *Univ. of Virginia*

For outstanding contributions to the history of mathematics, combined with extraordinary service to the mathematical and historical sciences.

### **Matt Shindell, Curator**

*An HSS@Work Career Profile*

At the History of Science Society's Virtual Forum this past October, I had the pleasure of participating in one of the panel discussions about the future of the profession. Most of what I was able to contribute to this discussion concerned the job market, and how the profession should consider broadening the training graduate students receive to make them good candidates for jobs in alt-academic or academic-adjacent jobs. As someone who has been lucky enough to spend my early career in a research institution, I am privileged to have found a job in which I am able to continue to

research and publish. But there are many other dimensions of my job as a Smithsonian curator for which I did not train, benefiting rather, from extracurricular experiences that helped me present myself as a potential museum person.

I realized that I loved the history of science when I was an unhappy pre-med major at Arizona State University. Halfway through my sophomore year, I decided to undeclare myself. In the course catalogue I saw something called "History and Philosophy of Biology." I signed up. This first history of biology course introduced me to my first real mentor, Dr. Jane Maienschein, and more courses with Jane followed. The history of science opened up to me new ways of understanding and questioning science. I finally felt like I had found my thing. Or one of them. I also gravitated toward creative writing. I took some undergraduate writing workshops and eventually started taking graduate workshops. Rather than go directly to graduate school for history of science—which I had already decided I would do—Jane advised me to pursue writing first. I applied and was accepted to the University of Iowa's Writers' Workshop, where I spent two years writing poems and thinking of myself as a writer.

I came back to Arizona with an MFA and a stack of poems. I still planned to apply to

a history of science graduate program, but I didn't know what I wanted to study. I decided to spend a year taking courses at ASU and figuring out what questions I wanted to ask. Based on my MFA, I landed a graduate assistantship in the Public Information Office (PIO), where I wrote press releases and helped manage relationships with science writers. I also started writing stories of my own. One of the hottest stories at ASU in the early 2000s was Mars exploration. Geologists on campus were involved in orbiting Mars missions and were gearing up for NASA's Spirit and Opportunity rover mission. I spent a lot of time in their offices and became fascinated with the history of how geology became an interplanetary discipline. I convinced one of them to let me tag along with his team of graduate students and postdocs to NASA's Jet Propulsion Laboratory in Pasadena, California for the rover mission, and I spent the winter months of 2004 driving back and forth between Phoenix and Pasadena.

With the topic of my master's thesis settled, I applied to PhD programs. After a few campus visits and chats with potential mentors, I decided to move to the University of California, San Diego to study with Naomi Oreskes, whose research in the history of the earth sciences seemed like a good fit for my planetary science interests. It was. I ended up continuing

## HSS News, cont.

my studies of planetary science by writing a dissertation about the isotope geochemist, Harold C. Urey—work that last year became **my first academic book**.

The job market when I finished my PhD in 2011 was not good. I spent the next four years in three postdocs, the last of which was in Harvard University’s History of Science Department, where I taught and continued my research for a year-and-a-half more. Then in 2015 I saw a job listing that seemed perfect—the position of curator of planetary science at the National Air and Space Museum. But although my research interests and expertise made me a good fit for this job, I didn’t know much about being a curator. Besides the requisite research and publication experience, the position also had requirements beyond my formal training.

Fortunately, I had accumulated a lot of extracurricular experience that helped me approach these new responsibilities. I had written for the public in my job in the PIO, and this helped with the public history component of my job. I had also held graduate assistantships in the special collections library at UCSD, where I had learned to work with collections and had helped design and carry out an oral history project. And I had spent time

working for Jane as an editorial assistant for a journal and later as an intern at the American Association for the Advancement of Science and the NASA History Office, where I learned a few project management skills. In other words, the fact that I hadn’t spent all of my time as a graduate student on fellowship, or pursued exclusively teaching assistantships, meant that I had developed skills that were useful beyond the academy.

The job market has, unfortunately, not improved much or at all, since 2011 and has deteriorated after the pandemic. If I take any lesson from my experience it is that graduate students need to be as versatile as they can when they enter the market. They should take any opportunities available to them to develop skills that will help them qualify for jobs that aren’t limited to research and teaching.

## JSTOR for HSS Members

In its strategic plan, HSS identified professional development as one of our six goals. Specifically, the Society is focusing on supporting the “professional development of emerging history of science scholars in and outside the academy.” One of the ways in which the HSS can help our members advance their research and teaching is to facilitate access to the literature, and we are pleased to work with JSTOR to offer a **50% savings on a one-year JPASS subscription for members** (regularly \$199). JPASS, available as monthly or yearly plans, allows you to read whatever journal article you like and enjoy up to 120 PDF downloads a year from the JSTOR archive, an archive with over 7 million articles from 2 thousand journals (including *Isis* and *Osiris*), representing some 50 academic disciplines.

In addition to past issues of *Isis* and *Osiris*, members may find the following journals of particular interest:

- *The British Journal for the History of Science*
- *Journal of the History of Medicine and Allied Sciences*
- *Science Progress*
- *Science, Technology, & Human Values*

JSTOR adds new titles to JPASS every month so you’ll have a growing collection of the world’s leading scholarly journals only a click away. **Sign up here.**

## Notes from our Bibliographer

### Survey Says...

by Stephen P. Weldon

Readers may recall that a couple of years ago, I worked together with Kathleen Sheppard (Missouri S&T) and Margaret Gaida (Caltech) on a survey on “Digital Technology in Scholarly Research for Historians of Science and Allied Disciplines.” The first half of the survey covered digital technology in scholarship generally while the second half concerned the IsisCB specifically. There were 28 questions, both defined response and open response. We advertised the survey with members of HSS and SHOT as well as through H-NET and the Mersenne listserv, and over the course of just over three months, from 30 October 2018 to 5 February 2019, we received 465 completed responses. Here I share some of the findings of that first part of the survey.

We received responses from a cross-section of the discipline. The three most identified subject areas of research were history of science (64%), history (23%), and history of technology (22%). Half of the respondents were HSS members and 15% were SHOT members; in addition, 18% were members of the British Society for the History of Science, and 11% affiliated with the European Society for the History of Science.

Most of the respondents were teaching/research faculty (33%), graduate students (16%), researchers (15%), or retired/emeritus faculty members (11%). The regional focus was primarily North America and Western Europe, 51% and 36% respectively, although we did have participation from all over the globe, including Africa, Oceania, South and Central America, India, and the rest of Asia. In terms of race and ethnicity, the vast majority identified as White (76%) or European (7%), with a small number identifying as Jewish, Black, Asian, and mixed race. We had a male/female split of 55% to 44%. The age range was widely distributed with 26% below the age of thirty-six, 37% between thirty-six and fifty-five, and 35% fifty-six and above.

The survey asked participants about their preferences related to functions and features of online scholarly resources, focusing on those things they would like to see and use in their research or teaching. Using a Likert-like scale with four preferences ranging from low interest (“would not use” and similar phrases) to high interest (“extremely useful” and similar phrases), we were able to assess the responses to 29 different functions or features that researchers might encounter when using web-based scholarly resources. In Table 1, I show the top eight items that had an average score above 3.0—in other words, the most desired items—and in Table 2, the bottom seven items with an average score below 2.0—the least desired.

**Table 1. The Top Most Valued Features or Functions.** The table below shows the top eight most valued features based on an average score of 3.00 or greater. The scale runs from 4 (like) to 1 (dislike). The first column refers to the question number and item. **Key to the full text of the questions can be found on this sheet.**

Feature/function	Count				Total	Avg	Rank
	4	3	2	1			
Links to archival material (Q15)	324	120	15	2	461	3.66	1
Access to published work (Q15)	311	127	22	1	461	3.62	2
Document access (Q14)	307	122	28	3	461	3.59	3
Biographical info (Q14)	224	168	63	7	463	3.31	4
Bib management (Q14)	221	146	76	15	463	3.22	5
Access to unpublished work (Q15)	195	158	92	15	460	3.16	6
Digital resource info (Q15)	160	189	95	13	457	3.09	7
Value of collaborative resources (Q17)	148	230	37	25	455	3.04	8

## Notes from our Bibliographer, cont.

**Table 2. The Least Valued Features or Functions.** The table below shows the bottom seven least valued features based on an average score of 2.00 or less. The scale runs from 4 (like) to 1 (dislike). The first column refers to the question number and item. **Key to the full text of the questions can be found on this sheet.**

Feature/function	Count					Avg	Rank
	4	3	2	1	Total		
Blogs (Q18)	9	77	246	112	444	1.96	23
Computational tools (Q18)	45	64	133	197	439	1.90	24
Academia.edu (Q18)	25	66	176	182	449	1.85	25
Awards/honors (Q15)	22	56	200	177	455	1.83	26
Twitter (Q18)	17	57	121	254	449	1.64	27
Social media (Q14)	17	54	133	236	459	1.59	28
Facebook (Q18)	3	25	103	320	451	1.36	29

As you can see people valued access to full-text resources, ranging from archival material to published and unpublished documents, more than almost any other feature. Also high on the list are biographical and other “information about authors, publishers, and professional activities,” as well as help with bibliographical management tools and information about digital resources. Completing the list of most valuable features was a general interest in collaborative resources, for example, resources like Wikipedia that contain material collected and/or curated by many scholars.

At the other end of the scale, we found surprisingly little enthusiasm in social media of

various kinds. Question 14 asked about whether the respondent would like to see “integration with existing social media tools” while Question 18 asked about how useful specific tools are for the person’s research, and for this question, we asked specifically about Facebook, Twitter, and Academia.edu. The results showed that the majority of respondents were as starkly opposed to social media as they were in favor of full-text resources. My cursory study of those people who embrace social media indicates that there is nothing in the demographic profile that stands out; gender, age, and even region seem to be generally disassociated with strong desire for increasing social media integration in research.

For those who want to see the whole list and how the rankings vary across age groups and regions, **please see the Google Sheets file with the three sheets (Whole Survey, Age Comparison, and Region Comparison) here.** Looking through these various cross sections of the population, I have not been able to find any dramatic differences in the rankings of the top or bottom of the list.

These general results point to a discipline in which access to resources and managing those resources through bibliographical tools are strongly sought after. In an increasingly digital world, our interest is closely focused on the data that we need to do our work. We tend to find collaboration critical to our work, but few of us are especially enamored with the current set of social media tools that we have at our disposal.

I would love to have someone with more data analytical experience than I look at the survey to see what else we might find in this fairly interesting collection of data. Meanwhile, those who are interested in **access to the cleaned and anonymized raw data for the whole survey can view it here.** Please contact me directly at [stephenweldon@gmail.com](mailto:stephenweldon@gmail.com) if you would like more information about this survey or if you have insights into that data that you’d like to share.

## News from the Profession

### 2021 Everett Mendelsohn Prize

The *Journal of the History of Biology* is pleased to announce the winner of the **2021 Everett Mendelsohn Prize: Jean-Baptiste Grodwohl**, whose essay, “**Animal Behavior, Population Biology and the Modern Synthesis (1955-1985)**,” appeared in the Special issue on the Modern Synthesis in volume 52, issue 4 (2019), pp. 597-633.

We also recognize three additional essays as highly commended:

**Clare Button**, “**James Cossar Ewart and the Origins of the Animal Breeding Research Department in Edinburgh, 1895–1920**,” *JHB* 51, 4 (2018): 445-477

**Alexandra Rizhinashvili**, “**Production Hydrobiology in the USSR under the Pressure of Lysenkoism: Vladimir I. Zhadin’s Forgotten Theory of Biological Productivity (1940)**,” *JHB* 53, 1 (2020): 105-139.

**Marga Vicedo**, “**The ‘Disadapted’ Animal: Niko Tinbergen on Human Nature and the Human Predicament**,” *JHB* 51, 2 (2018): 191-221.

All of these articles will be made freely available on the *JHB* website in March and April 2021.

### Consortium for History of Science, Technology and Medicine (CHSTM) Updates

Available now is a new episode of **perspectives on the history of race science and scientific racism** by Elise Burton, who talks about the development of race science and racial genetics in the Middle East, the similarities and differences between race concepts in the Middle East and North America, and how race science has influenced contemporary politics and medicine in the Middle East and beyond. **Listen to the discussion on our website**, or **on YouTube where closed-captioning is also available**.

CHSTM also invites proposals for new online working groups that will meet during the 2021-2022 academic year, focusing on specialized topics in the history of science, technology or medicine. Applications are due no later than **1 May 2021**. **Complete details may be found here on the consortium’s website**. Contact **info@chstm.org** with any questions regarding working groups.

### Registration for the 26th International Congress of History of Science and Technology is Now Open

The ICHST conference, scheduled for 25-31 July 2021, will be a virtual affair instead of in Prague, as originally planned. The theme is “Giants and Dwarfs in Science, Technology, and Medicine.” Further information and registration can be found on the conference website: <https://www.ichst2021.org/>.

### CSMBR Webinar Series: Expanding the Limits of Academic Medicine

The **Centre for the Study of Medicine and the Body in the Renaissance** (CSMBR) in Pisa, Italy will be hosting the next event of its 2021 webinar series via Zoom on 22 April 2021 from 4-7 pm Central European Time. **Expanding the Limits of Academic Medicine: Pedagogy, Magic, Anatomy, & Surgery** explores the different ways in which medicine developed beyond the traditional boundaries of an academic discipline.

The event is free to attend but registration is required. The CSMBR website contains **further information about how to register and about the series**.

## News from the Profession, cont.

### Inviting Submissions to *Backchannels*, the 4S Blog

The Society for Social Studies of Science (4S) invites submissions for its blog, *Backchannels*, which provides an outlet for students and scholars of Science & Technology Studies (STS) to publish shorter, timelier, media-rich communiques of interest to the global STS community. We are particularly keen to showcase more contributions from Asia, Africa and South America and accept submissions throughout the year. Please **reference their editorial guidelines** and write [joseph.satish@gmail.com](mailto:joseph.satish@gmail.com) directly to submit anything.

### SIHS Article Prize for Medieval and Early Modern Italian History

The Society for Italian Historical Studies invites applications from its members for the **SIHS Article Prize for Medieval and Early Modern Italian History** to be awarded to the best English-language peer-reviewed journal article published in 2020. Full details of eligibility and criteria are available on the society's website. The award will be presented at the annual SIHS meeting at the American Historical Association in January 2022.

### Call for Papers: Art of Illness; History of Medicine and Bioethics

Submissions are invited for a new volume of the **Routledge Advances in the History of Bioethics** series: *Art of Illness; History of Medicine and Bioethics*, edited by Wendy Turner, professor of history and adjunct professor of health policy at Augusta University. Please contact Dr. Turner directly via email at [wturner1@augusta.edu](mailto:wturner1@augusta.edu) with abstract and title if interested. All papers engaging with the themes of the art of illness and deceptions and truths around health and bodies are welcome. Finished papers are due by **1 August 2021**. More details about the scope of the volume and what to submit are available on the publisher's website available via the link above.

### Call for Submissions: SHNH W.T. Stearn Student Essay Prize

The **Society for the History of Natural History** is now accepting submissions for the **2021 William T. Stearn Essay Prize**. The Prize is awarded to the best original, unpublished essay in the field of the history of natural history by an undergraduate and postgraduate student

in full or part-time education. All entries must be received by the Secretary by **31 July 2021**. **Guidelines for submission and entry form** can be found on the society's website and a poster promoting the prize can be downloaded from this page. The winning entry will normally be published in the Society's journal *Archives of Natural History*. The winner receives a cash prize of £300 and a one-year free membership of the Society for the History of Natural History.

### National Humanities Alliance Lauds Latest Round of NEH Grants

The following grants from the National Endowment for the Humanities may be of interest to our members:

**Gabrielle Hecht** (Stanford University), "Inside-Out Earth: Residual Governance Under Extreme Conditions."

**Benjamin Breen** (University of California, Santa Cruz), "Experimental Drugs, Cold War Science, and the Future that Never Arrived, 1945–1965."

**Lakshmi Krishnan** (Georgetown University), "The Doctor and the Detective: A Cultural History of Diagnosis."

## News from the Profession, cont.

**Bianca Premo** (Florida International University), “The Smallest Subject: History, Science and Peru’s Youngest Mother in the World.”

NEH/AHRC New Directions for Digital Scholarship was awarded to the project “Digital Approaches to the Capture and Analysis of Watermarks, Using the Manuscripts of Isaac Newton as a Test Case,” directed by **William Newman** (Indiana University) as together with co-directors Joel Klein and James Voelkel.

**Olivia Weisser** (University of Massachusetts, Boston), “Sex and Disease in Early Modern London.”

**Ann Kibbie** (Bowdoin College), “Obstetrics and the Disabled Maternal Body in Nineteenth-century Great Britain.”

The Humanities Initiatives: HSIs was awarded to “The HIV Storytelling Project: Narratives from South Texas,” directed by **Rachel Pearson** (University of Texas Health Sciences Center, San Antonio).

### News from the Hagley Museum

The “Capitalism and the Senses” conference, organized by the **Hagley Museum and Library**, explored the sensory history of capitalism—the

ways that seeing, hearing, tasting, smelling, and touching have shaped, and been shaped by, capitalist processes and social relations. Collectively the papers stress how capitalism has drawn on the embodied power of the senses and, in turn, influenced how sensory experience has developed. Fourteen presentations are available at [www.hagley.org/research/conference/2020-fall-conference](http://www.hagley.org/research/conference/2020-fall-conference). Copyright is retained by the authors.

Also available on the website are new episodes in the Hagley History Hangout, featuring interviews with authors of books and other researchers who have use of our collections, and members of Hagley staff with their special knowledge of what we have in our stacks. History Hangouts as part of the **Hagley from Home** initiative by the Hagley Museum and Library.

### HIST: Bulletin for the History of Chemistry Outstanding Paper Award for 2017

The recipient of the 2017 **Paul R. Jones Outstanding Paper Award** of the Division of the History of Chemistry of the American Chemical Society is Emeritus Professor of Chemistry **Carmen Giunta**, Le Moyne College, Syracuse, NY, for his paper “**Isotopes: Identifying the Breakthrough Publication**,” *Bulletin of the*

*History of Chemistry*, v42 (issue 2), 2017, pp. 103-111. The award is presented to the author of the best paper published in the *Bulletin* during the previous three years 2015, 2016, 2017.

### Philosophy of Science to be Published by Cambridge University Press

The Philosophy of Science Association is delighted to announce that they have reached an agreement with Cambridge University Press to publish their flagship journal, *Philosophy of Science*, beginning in 2022.

More details about this move may be found on the PSA’s website, **in their news section** (scroll down for this item) and in **a statement by President Alison Wylie**.

### Explore 150 Years of British Science History

Experience 150 years of British science history from the scientists’ perspective in our newest archive to launch on the Wiley Digital Archives platform, the **British Association for the Advancement of Science—Collections on the History of Science (1830s-1970s)**. Available online for the first time ever, this archive collection is the ultimate interdisciplinary and



## News from the Profession, cont.

interinstitutional archive. This archive comprises the previously uncatalogued BAAS materials and collections from prestigious British universities, selected by a team of leading History of Science scholars.

### **Asian Medicine Journal Special Issue TOC: “Medicines and Memories in South Asia”**

We are happy to draw your attention to a Special Issue of *Asian Medicine* that might be of interest: <https://brill.com/view/journals/asme/15/1/asme.15.issue-1.xml>

### **SHAC Morris Award: Call for Nominations**

The Society for the History of Alchemy and Chemistry solicits nominations for the 2021 **John and Martha Morris Award for Outstanding Achievement in the History of Modern Chemistry or the History of the Chemical Industry**. This award honors the memory of John and Martha Morris, the late parents of Peter Morris, the former editor of the Society's journal, *Ambix*, who has contributed the endowment for this award. The recipient chosen to receive the Morris Award will be expected to

deliver a lecture at a meeting of SHAC, where the awardee will be presented with an appropriate framed photograph, picture or document and the sum of £300. The award is international in scope, and nominations are invited from anywhere in the world.

### **New Report from NCSES: Survey of Earned Doctorates**

In the last few weeks, the **National Center for Science and Engineering Statistics within the U.S. National Science Foundation** had issued **several reports**, to include the *Survey of Earned Doctorates*, an annual census of individuals who receive research doctoral degrees from accredited U.S. academic institutions. This annual report calls attention to major trends in doctoral education.

A few takeaways from the 2019 data:

- In 2019, the number of doctorate recipients increased to 55,703. This represents a 1% increase from 2018, below the 3.2% average annual growth since the survey's inception.
- The number of underrepresented minority doctorate recipients (Black or African American, Hispanic or Latino, and American Indian or Alaska Native) grew to 5,480 in 2019. This represents a 6.7% increase from 2018.

- Women continue to be more than half of doctorate recipients in life sciences, psychology and social sciences, education, humanities and arts, and other non-science and engineering (non-S&E) fields. However, they constitute about a third of those in physical sciences and earth sciences and a quarter of those in engineering and in mathematics and computer sciences. You can find this report here: <https://nces.nsf.gov/pubs/nsf21308/>

If you'd like to set up a Zoom interview with the NSF staff behind this report, please email [mnegron@nsf.gov](mailto:mnegron@nsf.gov).

### **The Golden Goose Award**

The **ninth annual Golden Goose Award ceremony, held on 1 December 2020**, recognized three teams of scientists whose research has greatly benefited society. For its 2020 recipients, the Golden Goose Award highlighted outstanding examples of researchers whose federally funded research is informing scientific responses to COVID-19, including the development of vaccines and treatments that have the potential to help tackle the global pandemic. This year's awardees are: **Kizzmekia Corbett, Barney Graham, Emmie de Wit, and Vincent Munster; Jason McLellan and Daniel Wrapp; and James Crowe.**

## News from the Profession, cont.

### HPS&ST Newsletter

Check out past HPS&ST newsletters for related information such as positions, conferences, publications, books, and more: <https://www.hpsst.com/hpsst-newsletter.html>.

Contributions to the newsletter (publications, thematic issues, conferences, Opinion Page, etc.) are welcome and should be sent to the editor: Michael R. Matthews, UNSW, [m.matthews@unsw.edu.au](mailto:m.matthews@unsw.edu.au). If you want to subscribe to the list or if you have friends, colleagues or students who would like to subscribe to the list, send a message to: [hpsst-list-subscribe@lists.unsw.edu.au](mailto:hpsst-list-subscribe@lists.unsw.edu.au).

### Online Symposium on Governing Science and Technology

A group of scholars from the Centre Alexandre Koyre in Paris, have organized an online symposium, **Governing science and technology, governing through science and technology: what was at stake for women? (From the late 19th to the early 21st century)**, to be held 1-2 July 2021. Organized in the memory of **Larissa Zakharova** (1977-2019), a specialist of the Soviet Union who devoted much of her work to the history of technology, this symposium replaces the conference which

should have been held in Moscow in June 2020. It will be comprised of seven panels conceived as spaces for research and discussion. The symposium was officially launched on 2 March 2021, with a special session featuring a presentation on the subject of “**Governance meets Gender: Retelling Narratives of Authority in Science and Technology**,” followed by a discussion among participants, which included HSS members **Donald L. Opitz** (DePaul University), **Brigitte Van Tiggelen** (Science History Institute), **Marsha Richmond** (Wayne State University) and **Pnina Abir-Am** (Brandeis University).

### 2021 Dan David Prize Laureates

Historians of science and medicine Allison Bashford (University of New South Wales), **Katharine Parks** (Professor Emerita, Harvard University), and **Keith Wailoo** (Princeton University) were named as the **2021 Dan David Prize** laureates, for their contributions to the history of health and medicine, the chosen field for the “Past” category of the prize, which recognizes achievements that “expand knowledge of former times.” This international prize was established in 2001 by the **Dan David Foundation** to recognize and encourage innovative and interdisciplinary research

that cuts across traditional boundaries and paradigms. **A recording of the announcement of the 2021 laureates may be viewed on YouTube.**

### ACLS Leading Edge Fellowships

The American Council of Learned Societies is pleased to announce the third competition of the **Leading Edge Fellowship program**, which places recent humanities PhDs with nonprofit organizations committed to promoting social justice in their communities. Applications, which are due on **6 May 2021 by 9pm EDT**, will be accepted only through the **ACLS Online Fellowship Application system**. Full details of the fellowship and eligibility requirements may be found via the weblink provided above.