# Newsletter
## of the History of Science Society

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## HSS@Work Interview with Lindsey Fitzharris

by Jessica Baron, History of Science Society

*This interview is the first in a series conducted on behalf of HSS@Work, a group devoted to improving opportunities and support for historians of science (and related scholars) interested in employment options beyond the academy.*

*Dr. Lindsay Fitzharris is an author and medical historian who received a PhD in the History of Science, Medicine, and Technology from Oxford University. She is the creator of the popular pre-modern surgery blog, "The Chirurgeon's Apprentice," and recently received the prestigious PEN/E.O. Wilson Literary Science Writing Award for her book* The Butchering Art: Joseph Lister's Quest to Transform the Grisly World of Victorian Medicine *(Farrar, Straus and Giroux, 2017). She hosts the YouTube video series* ***Under the Knife*** *and recently signed a contract for her* ***second book*** *"on the birth of plastic surgery told through the incredible story of Harold Gillies, the pioneering and eccentric surgeon who first united art and medicine to address the horrific injures that resulted from World War I." Below she discusses popular writing, historians engaging with the public, and her path away from the tenure track.*



Dr. Lindsey Fitzharris, Photo from The Chirurgeon's Apprentice blog

**JB: In some of your interviews you mention being "burned out" after finishing your PhD at Oxford and moving directly into your postdoc at UCL. At**

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## Fitzharris Interview, cont.

**what point did you decide to pursue a career in writing and public education as opposed to the (less and less traditional) tenure-track job?**

LF: It's true that I had become intellectually burned out during my postdoc. During that time, I started a blog called The Chirurgeon's Apprentice. It was only meant to be a hobby project. I wanted to flex my creative muscles and fall back in love with history again by telling the stories that genuinely excited me. But the blog took on a life of its own, and before I knew it, I was dedicating most of my time to public engagement. I realized then that an academic career was not for me. The problem is that in order to become a full-time freelance writer, you first need a platform. So although I knew that my time in academia was limited, I also knew that I couldn't just leave without having a plan in place. I spent years blogging and engaging with the public about medical history on various social media platforms. I also began a YouTube series called Under the Knife. Eventually, I was able to attract a literary agent, and from there I was able to sell my first commercial book.

**Many people I've talked to who write for a non-expert audience have been accused of "bastardizing" the discipline in some way. What's your response to that sort of judgement?**

I think there is a misconception that writing popular history is easier than writing academic history. Both have their challenges, and just because a person can write one doesn't necessarily mean that same person can write the other. I'm a storyteller first and foremost, and an historian second. I don't apologize for this. Unfortunately, some academics don't see a value in what I do. But the past doesn't belong to scholars alone. It belongs to everyone. My hope is that I can bridge the gap between academia and popular history, and open up new and interesting subjects to a curious public.

**What do you think other historians of science and medicine can be doing to promote the discipline to non-experts?**

Get involved! It's easy to hurl rocks from the outside, but if you're truly interested in raising awareness about your discipline, you have to put yourself out there. Start a blog. Become a historical consultant on a TV series or movie. Pitch articles to popular magazines and newspapers. Collaborate with museum curators on an exhibition. There are plenty of ways to engage the public.

**You're highly involved with the "good death" or "death positive" movement along with a group of writers, morticians, artists, scientists, and activists and have been called**

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History of Science Society

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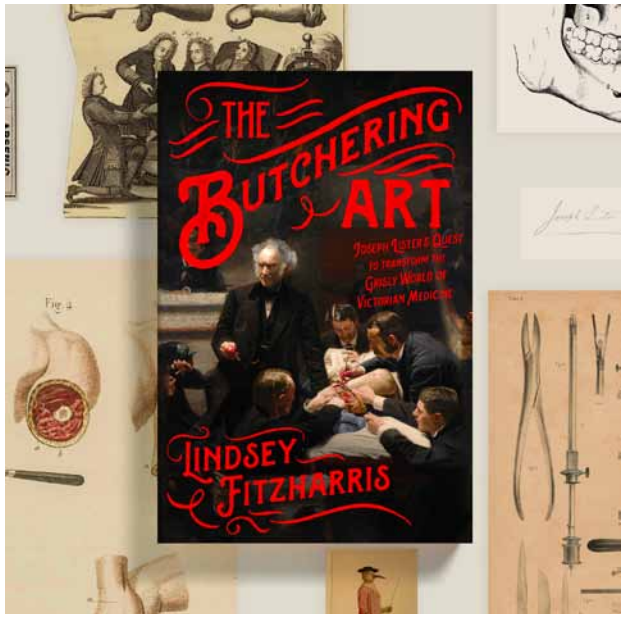
## Fitzharris Interview, cont.

**a "deathExpert." What do you contribute to this movement as an historian (or why do you think it's important to have an historian involved)?**

Caitlin Doughty, founder of The Order of the Good Death, has brought together an incredible community of writers, morticians, artists, scientists, and activists who engage with the public on matters of death and dying. As a medical historian, I try to offer historical context. What constituted a "good death" in the past? When did the process of dying become medicalized? Why were doctors largely absent from the bedside of the dying for centuries? I believe that this context can help people understand how we got to where we are today.

**Much of what you present has a sensational element with lots of blood and gore and screaming and pain—how do you balance entertainment with good historical information?**

This has always been a challenge, and I suspect it'll continue to be a challenge throughout my career. By its nature, medical history can be gruesome. I don't feel that I'm doing the doctors and patients justice if I hold back from describing what it was really like in the past. At the same time, I don't want to be insensitive, and it's always important to remember that these were




*The Butchering Art: Joseph Lister's Quest to Transform the Grisly World of Victorian Medicine,* Photo Courtesy of Dr. Lindsey Fitzharris

real people. It's certainly a delicate balance—one that I don't always get right!

**You mention in your Guardian interview that we don't talk enough about failure, but your big career break came on the back of a less-than-ideal time in your life. What's your best piece of advice for the struggling grad student or early careerist mired in feelings of failure?**

My book came at a low point in my life. My ex-husband had abruptly ended our 10-year relationship and disappeared on me. As a result, I suddenly found myself facing deportation from a country I had called home for many years. My passport was confiscated, and I wasn't allowed to work while my immigration situation was being decided. My ex-husband's lawyers painted a picture of me as a failed writer, which was easy to believe since I had no money, no job prospects, and no right to remain in my home. During those eight excruciating months, I worked on a proposal. And with the support of friends and family who would not let me give up on my dreams (not to mention an excellent agent!), I was able to sell the book. It's now being translated into twelve different languages, and I'm heading to LA soon to discuss the possible movie adaptation of the book.

Failure is essential to success. It informs us, guides us, and pushes us in directions we couldn't have imagined going in the first place.

## Plan Ahead
## Future HSS Meetings

**Seattle, WA:**
**1-4 Nov. 2018**
Joint meeting with PSA

**Utrecht, The Netherlands:**
**23-27 July 2019**

# Interview with Terence Keel

*by Jessica Baron, History of Science Society*

***Dr. Terence Keel*** *is an Associate Professor at the University of California, Santa Barbara (UCSB) where he serves as Vice Chair to the Department of History and holds an appointment in the Black Studies Department and the Department of Religious Studies. His first book,* **Divine Variations** *(Stanford University Press, January 2018) is a study of how Christian thought facilitated the development of scientific racism and shaped the epistemic commitments of the modern study of human biodiversity. He has received awards for his research from the National Science Foundation, the Social Science Research Council, the Charles Warren Center for American Studies at Harvard University, and the University of California Office of the President and is an affiliate of the newly formed* ***Center for the Study of Racism, Social Justice & Health*** *and a senior advisor to the* ***Goldin Institute****, a Chicago based non-profit organization that advocates globally for grassroots leadership, conflict resolution, poverty alleviation and environmental justice.*

*Most recently, he was the* ***2017 recipient of the Harold J. Plous Award*** *at UC Santa Barbara, the highest honor given by the faculty senate to a junior professor for excellence in teaching, scholarship, and service. Keel's Plous Lecture, titled "Divine Variations: How Christian Thought Became Racial Science" will take place on Thursday, May 10th in Corwin Pavilion at UC Santa Barbara from 5pm-6:30pm.*



*Photo courtesy of Terence Keel*

**JB: You started your training in religious studies and have highly interdisciplinary PhD training. At UCSB your primary appointment is in History, but you also have appointments in Black Studies and Religious Studies. At some point in your training did you move away from Religious Studies to become an historian?**

TK: There are many ways to be a historian. Donna Haraway, Hayden White, Peter Harrison, and Ludwik Fleck are all historians even though each carries a different set of intellectual and political commitments, practice varying styles of writing, citation, and operate at different scales of historical analysis. In my case, religion is an important part of my intellectual orientation as a historian. In part, this is a consequence of my training in theology while I was a young student at Xavier University of Louisiana. To study theology, especially in a Catholic setting, involves thinking with and through ancient intellectual traditions, showing their relevance for the present. Theologians really are intellectual historians; it is very difficult to talk about God in Descartes, Hegel, or Martin Luther King Jr. without also having in mind Aquinas, Augustine, William Ockham, or Aristotle. At Xavier, I was shaped by a group of Catholic thinkers who could draw links between Paul's letters, Augustine, Marx, Paul Ricœur, Fernand Braudel, and James Cone—often within a single lecture! This Catholic orientation—with its tendency to think systematically over large periods of time and to see modernity from the vantage point of a once coherent but now denied past (a position I would later reject)—left a great impression on my understanding of historical scholarship. The irony is that I was raised a Pentecostal, which maintains a quintessentially Protestant worldview on God, biblical interpretation, and material redemption. The Catholic orientation toward intellectual

*Continued on Page 5*

## Terence Keel, *cont.*

history helped complete a larger picture about the contentious origins of modern Protestantism and the faith tradition in which I was raised.

**You started off at Harvard's Divinity School, but your PhD training is highly interdisciplinary and you've worked with some of the finest historians of science in the US. How did this transition towards history of science take place?**

When I arrived at Harvard my encounter with feminist biblical scholarship and theology, in particular the work of Elisabeth Schüssler Fiorenza, completed my journey into atheism. It was impossible for me to practice the "faith of the fathers" in any meaningful sense once I took seriously the structures of patriarchy and racism that were integral to the history of Christian thought and practice. I became disinterested in apologetics or redressing the historical missteps of a tradition premised on the subordination of women and people of color. Despite this, I remained interested in the place of religious belief in society but from the vantage point of someone who was aware that I had not emancipated myself from the Catholic orientation toward deep historical reasoning, systematic thought, or the Protestant disposition to use liberationist hermeneutical methods. Whether I liked it or not, it took me some time to realize that these rational practices and intellectual tools—forged initially as a person of faith living under an American culture that was profoundly Christian—had become a part of my intellectual profile as a secular scholar.

**How did this influence your approach to the history of science?**

I carried these dispositions into my study of the history of science, which at the time was unseating the hold of the Draper-White thesis and reimagining the relationship between science and religion beyond the metaphors of conflict, antagonism, and epistemic incompatibility. In a strange and unexpected way I found my own intellectual journey linking up with the scholarly work of Janet Browne, Peter Harrison, Nicolaas Rupke, John Hedley Brooke, and Ronald Numbers who were documenting the links between Christianity and modern science as performed by historical actors who were secular, rational, and the descendants of the Enlightenment. What was clear from my own journey was that our religious heritage is not so easily cast aside. So I brought what Paul Ricoeur called "a hermeneutics of suspicion" to scholarship on the history of biology and anthropology that claimed the modern architects of racial ideas in science were free from the influence of Christian intellectual history.

What I have done in *Divine Variations* is recast the history of the race concept in science with careful attention to the influence of Christianity over modern ideas about human biodiversity. Making this connection, I have also attempted to provincialize aspects of modern Western sciences, showing how a very specific Euro-American cultural history shapes how race is understood within biological research. Methodologically speaking, this approach to history still strikes me as being shaped by the Catholic and Protestant intellectual practices that influenced my early entry into historical scholarship. I follow Wittgenstein and post-colonial theorists like Ashis Nandy who argue that the critical analysis we make of a historical problem remains shaped by the very issue we are trying to solve; there is no metalanguage freed from culture or social life.

**So you feel like you're still making direct contributions to the field of Religious Studies?**

Surely yes. I arrived at the work I am doing as a historian of science through the field of theological and religious studies. I would like to think that I am broadening the scope of what it means to be a scholar of religion, a historian, and a science studies scholar. I am uncovering the living legacy of Christian thought in society yet within spaces assumed to be freed from religious influence. This is an unconventional approach as



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## Terence Keel, *cont.*

my actors are often not formal religious figures and the intellectual problems that fascinate me do not appear initially to have any connection to religion (e.g., evolutionary biology, public health research, genetic correlation studies, Neanderthal DNA). I am taking what my colleagues Myrna Perez Sheldon, Ahmed Ragab, and I have called a "critical approach to science and religion." By shifting to new subjects and using a range of critical methodologies (critical race theory, queer theory, and post-colonial theory) we are looking to move conversations about science and religion beyond issues of cosmology and want to instead take up questions with clear political consequences for the lived realities of contemporary communities.

**How did you get to the realization that we have and still think about race from a Christian perspective? Was it a particular piece you read? And, if so, was it something historical or religious or both?**

As a scholar of religion everyone reads Émile Durkheim who wrote in the *Elementary Forms of Religious Life* "religion has not merely enriched a human intellect already formed but in fact has helped to form it. Men owe to religion not only the content of their knowledge, in significant part, but also the form in which that knowledge is elaborated."[1] What would it mean to think about this historically? Could it be possible that modern Euro-American biological sciences emerged out of an "intellect" whose reasoning practices and ideas had been shaped by Christianity? As I thought about this question as a graduate student in religion I was working with Evelynn Hammonds who at the time was convening a race workshop, which was a reading and writing group comprised of social scientists and historians, to evaluate critically the use of race in genetic and scientific research. This was during the early 2000s and was at the height of new genetic correlation studies based on Single Nucleotide Polymorphisms (SNPs) analysis claiming to find meaningful differences between population groups. Despite humans being 99.98% the same genetically, biologists still identified what is believed to be meaningful differences across various "racial" groups that influence health, behavior, and life chances. Heightened attention to racial differences at the molecular level overshadowed and eclipsed notions of shared human ancestry. It was almost as if common human ancestry did not matter at all.

During the time I was involved in the race workshop, Evelyn Higginbotham and Janet Browne introduced me to the work of the 19th century American polygenist, Josiah Nott. Typically, historians and anthropologists think of Nott and the American polygenists as either an example of racist political ideology masquerading as science or an intellectual dead-end along the path toward Darwinian evolution. Polygenists of course denied the plausibility of common human ancestry under the still widely accepted biblical timeline of recent human creation. Key to this position was their ability to measure the racial traits of living racial groups and use inferential reason to reconstruct the biological makeup of each group's ancestral beginnings. This is what Nott argued in his 1844 lectures on the "natural history of the Caucasian and negro races." Reading Nott's writings alongside contemporary genetic correlation studies I began to see clear methodological linkages between present and past constructions of race. Deborah Bolnick's ethnographic analysis of the STRUCTURE sequencing platform used by geneticists to recreate the racial makeup of our ancient ancestors inspired me to argue that this contemporary scientific innovation was in fact reproducing reasoning practices that dated back to American polygenists and a much older tradition of thinking that emerged out of Christian intellectual history. Deconstructing Durkheim's universal claims about so-called

1 Émile Durkheim, *Elementary Forms of Religious Life* trans., Karen Fields (New York: The Free Press, 1995), 8.



*Continued on Page 7*

## Terence Keel, *cont.*

"primitive religion" helped me document and provincialize the formation of race thinking within Euro-American science.

It was the combination of studying contemporary genetic research alongside the claims of 19th-century thinkers that encouraged me to pursue this work. I would have missed or not looked for these connections between race, science, and religion had I confined my analysis to traditional religious actors and institutions, or simply taken for granted the racist political ideology of the American polygenists and the secularity of contemporary research on human biodiversity.

**After all the genetic research that's gone into showing we have no biomarkers for race, why do you think the Human Genome Project wasn't that ultimate wake-up call, for other scientists especially?**

Race in the modern biological sciences has always been expressions of belief that shape the collection, generation, and meaning of data. These beliefs stem from cultural commitments that lead geneticists to reason in racial terms—commitments that serve larger interests within Euro-American culture. Scientific facts do not unsettle the cultural beliefs upon which they stand. Race thinking did not come to an end following the creation of reference human genome sequence in 2000 for the same reason race thinking did not perish after Darwin or following the modern synthesis: we remain culturally invested in race. To diagnose the effects of these cultural commitments we need to humanize the biological sciences, which is to say we need the interpretative work of the humanities. Bruno Latour in his recent Gifford Lectures on natural religion spoke precisely to this issue when documenting the cultural commitments that impede and facilitate climate science:

> "It is impossible to understand what is happening to us without turning to the sciences—the sciences have been the first to sound the alarm. And yet, to understand them, it is impossible to settle for the image offered by the old epistemology; the sciences are now and will remain from now on so intermingled with the entire culture that we need to turn to the humanities to understand how they really function."[2]

I believe this is true for the life and health sciences that study/create human biodiversity. The humanities have much to say about how race in science works. To see race one must first hold a set of beliefs about nature and biology that, in the context of Euro-American science, have their origin in Christian intellectual history and specifically the scholastic worldview that gave modern biology its epistemic characteristics. Race in genetic science is an expression of cultured beliefs about the order and divinization of nature, governmental and pharmaceutical priorities, and the privileging of neo-creationism—via correlation studies—in the research designs of scientists.

Until these latent cultural values and priorities shift we will continue to see genetic studies committed to generating data that claims to explain the source of human biodiversity.

2 Bruno Latour, *Facing Gaia: Eight Lectures on the New Climatic Regime* (Cambridge: Polity Press, 2017), 4.

# Prodding, Proofreading, and Persistence;
## Or, Tales from an *Isis* Proofreader

*by Ian Hesketh (University of Queensland)*

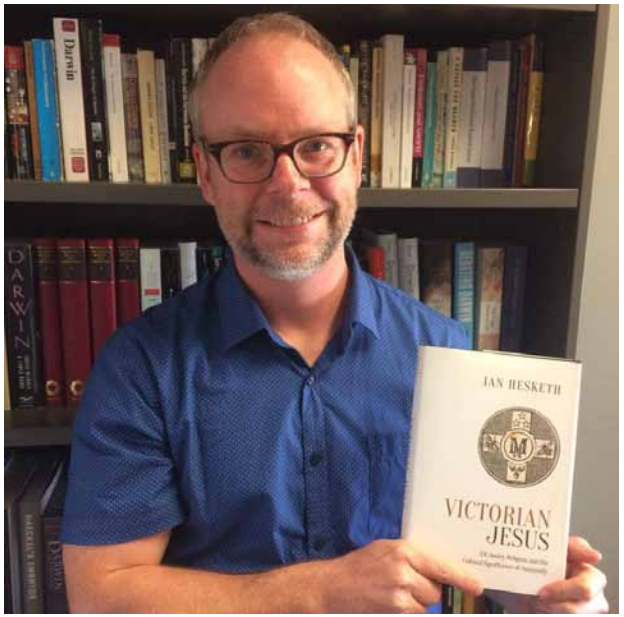
I was recently awarded an Australian Research Council (ARC) Future Fellowship grant, which provides me with a generous salary along with substantial research funds, to engage in a four-year research project at the Institute for Advanced Studies in the Humanities (IASH) at the University of Queensland. The award also comes with an important clause that was included in the host university's letter of commitment, namely that the University of Queensland would agree to offer me a continuing position, should the application be successful. So winning the award not only meant four years of well-funded research; it also meant that my twelve-year long search for job security was finally over.

Reflecting on this search—which has taken me and my family across Canada in both directions, and then to a different country entirely—has made me realize even though I worked for several different universities during that period, I did have one constant during that time: the HSS's quarterly journal, *Isis*.

Doing a PhD in the early 2000s at York University in Toronto had many benefits, including, of course, getting to learn from and work with Bernie Lightman and many other STS-related faculty members such as Marlene Shore, Joan Steigerwald, Katharine Anderson, Ian Slater, Martin Fichman, and Paul Fayter. It also meant the opportunity to work for *Isis*, which began its stint at York University in 2003.

One of my first duties as part of the team was to accompany Lightman on a trip to Cornell University in Ithaca, New York, *Isis*' previous home, in order to get a first-hand look at the daily operations. It was a great experience. And while the drive from Toronto to Ithaca and back again was quite long, Lightman and I bonded over a mutual love of Neil Young and other music from the 70s that helped us pass the time.

Once *Isis* got officially underway at York, most of us graduate assistants worked as Assistant Book Review Editors (or, as I preferred to put it, Assistants to the Book Review Editor), in large part because publishing upwards of one hundred book reviews an issue proves to be quite labor intensive. It was indeed impressive just how many books moved through the office. In the most ideal of situations, the Book Review Editor would examine a given book, come up with a list of possible reviewers, and then give that list to one of the editorial assistants. That assistant would then email the first name on the list, asking if they would consider reviewing the book. After agreeing, the assistant would send them the book and the reviewer would, ideally, send us a review




Courtesy of Ian Hesketh

of that book before the three-month deadline. More often the process involved a seemingly endless series of what we called "prods": emails to authors reminding them about emails they did not respond to, or deadlines that had come and gone, or the books that now needed to be sent back to the journal so that the entire process could begin again. This may seem tedious, but it was a real pleasure corresponding with so many different scholars in the history of science. And it was just plain fascinating to be one of the few people working behind-the-scenes and taking

## Tales from an *Isis* Proofreader, *cont.*

part in the production of a leading journal in the field. Eventually, I was hired to proofread journal issues on a regular basis, largely to seek out errors that had crept in during the typesetting process, correct any remaining stylistic issues, and insert the final authors' corrections. This work was wonderful, as it meant that I was able to be a part of the *Isis* team as I continued to work on my PhD, which I defended in June of 2006, while getting to pour over each issue of *Isis* well in advance of the journal's many subscribers.

After finishing the PhD, I took a two-year Social Science and Humanities Research Council Postdoctoral Fellowship at the University of British Columbia (UBC). While I assumed this meant my proofreading gig for *Isis* would come to an end, I was delighted to discover that I could continue proofreading each issue of *Isis* even though I would now be living in Vancouver. I was still proofreading from print at this point, so this involved a lot of shipping between my place in Vancouver and the home office in Toronto. During this first postdoc at UBC, I published a few articles and I also had my first book in press, which I thought meant that I would be well-positioned to take the next step in my early academic career. But when the postdoc came to an end in the summer of 2008, the stock market had plummeted and the bottom fell out of an already declining job market. I was able to pick up some adjunct teaching at UBC's new satellite campus in Kelowna, which was formerly Okanagan University College where I completed my Bachelor's degree eight years before. This was a tough year. My mother was kind enough to let my partner Cleo and I stay in her basement suite. And I continued proofreading for *Isis*, which was not only a great financial help during a difficult period in that regard, it also helped set me up for my next position.

At some point while I was teaching at UBC-Okanagan, I became aware of a massive project under the direction of Daniel Woolf, Professor of History and Dean of Arts at the University of Alberta in Edmonton, to produce a five-volume, edited collection on the history of historical writing from a global perspective, from the ancient period right up to the present. This would eventually be published as *The Oxford History of Historical Writing* (2012–2015). I contacted Woolf immediately, in the hopes that I could contribute something on British historical writing in the nineteenth century. But I also mentioned my editorial experiences and suggested that I'd be keen to contribute to the project in whatever way that I could. What I didn't realize at the time was that Woolf was beginning to think about hiring someone to help coordinate the activities of the over 150 authors and several different editors and, ultimately, shepherd the five volumes through the publishing process. My editorial experience, more so than my research, was key to being considered for what would turn out to be a three-year managing editor position at Queen's University, Kingston. And as I can attest, the "prodding" skills I honed to perfection in the *Isis* book review office were indispensible throughout the managing of this project.

I should say that I continued to proofread *Isis* throughout this three-year editorship. I also managed to find time to continue researching and writing, completing my second book and securing an advanced contract for my third. I also kept applying for tenure-track positions in relevant fields but was unable to make it onto any shortlists for the few positions that were advertised during that period. Towards the end of my time at Queen's, I began applying for short-term appointments as well, and even began looking more systematically for positions overseas. A three-year position was advertised for a postdoctoral fellow at the University of Queensland to work with Peter Harrison, Director of the Centre for the History of European Discourses (now IASH), on another large-scale project, this one dealing with historical

## Tales from an *Isis* Proofreader, *cont.*

and evolutionary modes of explanation. While this position aligned quite closely with my research, my now extensive editorial experiences were seen as a great asset for a position that would also involve organizational and editorial duties.

I'd like to say that it was a difficult decision to move overseas, particularly given that Cleo and I now had a one-year-old daughter to think about, but there were no other options. The position looked like a wonderful opportunity and has indeed worked out for the best. That three-year postdoc eventually led to a senior research fellow position, which set me up to apply for the ARC Future Fellowship and, ultimately, secure a continuing commitment from the University of Queensland. I was also able to keep proofreading *Isis*, as well, despite moving to Australia, and despite the editorial transition that occurred in 2014 when *Isis* moved to The Netherlands under the editorship of Floris Cohen. I was more than happy to be kept on as the *Isis* proofreader, and hope that I can continue on now that we approach another editorial transition.

Reflecting on these last twelve or so years makes me realize just how lucky I was to stay in academia while I continued to pursue an academic career. There were the lengthy periods when it seemed like there wouldn't be another job on the horizon and many thoughts of pursuing a career outside of academia. But new positions seemed to materialize at just the right moment, and we were always willing and able to move long distances when those opportunities arose, despite the strain those moves inevitably had on family and new and old friendships. It also helped knowing that I could continue working for *Isis* throughout those transitions, which in part made them possible in the first place.




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# The 2018 George Sarton Lecture

## Imperial Science: Victorian Cable Telegraphy and the Making of "Maxwell's Equations"

Bruce J. Hunt (University of Texas) delivered the 2018 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) in February. The theme of the meeting was "Advancing Science: Discovery to Application," focusing on how fundamental scientific research makes its way into practical use. Hunt set out to flip that over, or perhaps complete the cycle, by looking at how technological applications can sometimes stimulate and shape even the most fundamental science.

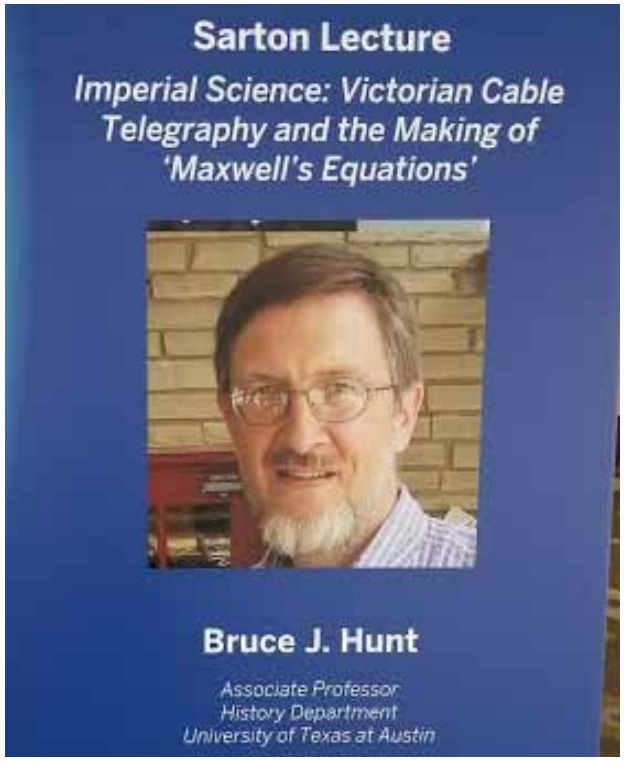
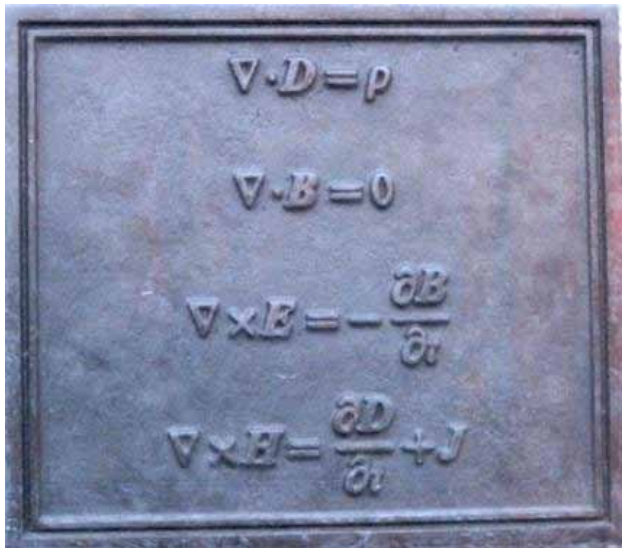



Photo courtesy of Jay Malone

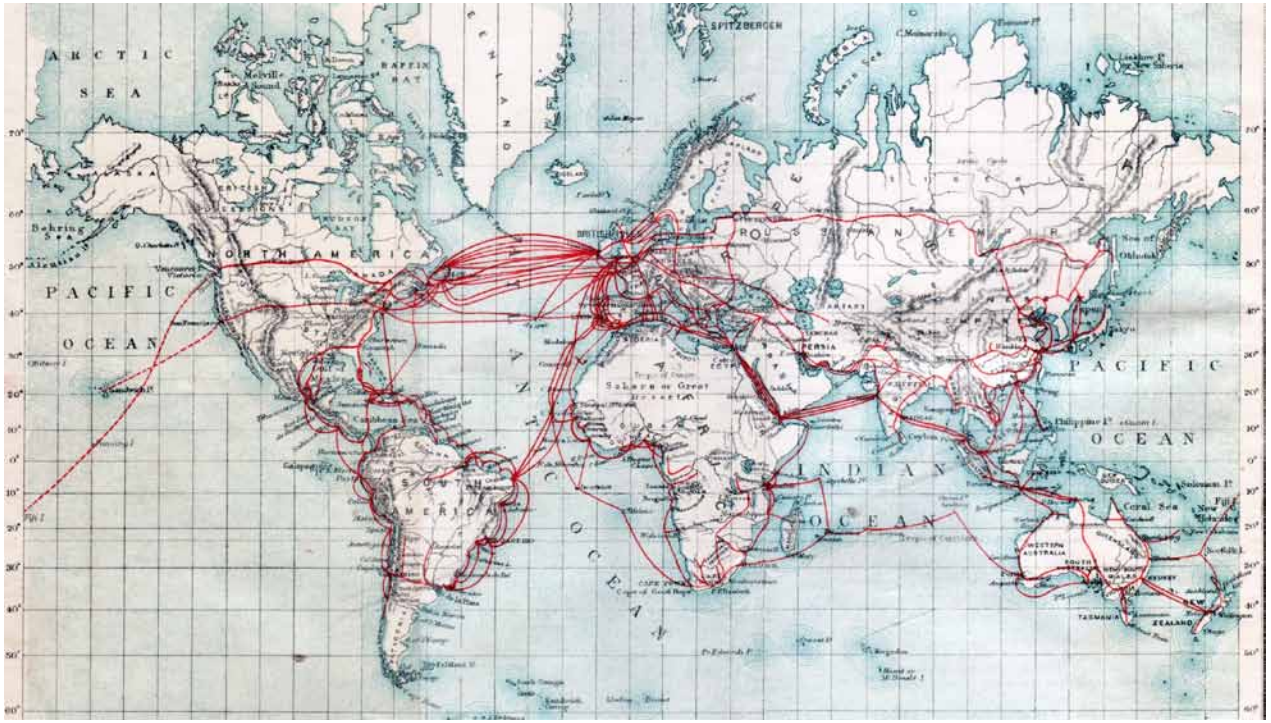
Consider one of the great scientific achievements of the 19th century: the formulation of "Maxwell's equations" of the electromagnetic field. These four vector equations are now among the most highly regarded in all of physics; they govern everything from the propagation of light and radio waves to the workings of the electric power system, and they grace not just textbooks but t-shirts and are inscribed on the base of the statue of James Clerk Maxwell that stands in his native Edinburgh (see picture). How did these equations come to look the way they do? Why were they formulated in Britain, and why in the late 19th century? In particular, why were they cast into their canonical form not by Maxwell himself, but by Oliver Heaviside? The answers, Hunt argued, lie in submarine cable telegraphy, one of the characteristic technologies of the British Empire in the Victorian era.

From the time the first undersea line was laid across the English Channel in 1851 until the industry began to decline after the First World War, the global cable network was dominated by British firms and British expertise. As a maritime trading nation and the leading commercial, industrial, and imperial power of the day, Britain had both the greatest need for cables and the greatest capacity for making and operating them. In turn, cable telegraphy deeply shaped British work in electrical science. In particular, the peculiarities of signalling along cables led British physicists and engineers to pay far more attention to electromagnetic propagation phenomena than was required of their counterparts in Germany, France, or the United States, whose overhead landlines were electrically much simpler. Cable telegraphy played an especially important part in Heaviside's thinking, including his formulation of "Maxwell's equations."




"Maxwell's equations," from the base of Alexander Stoddart's statue of James Clerk Maxwell, George Street, Edinburgh (photograph by Angela Smith).

## Imperial Science, *cont.*




Cable map of the world, 1901, from W. Clauson-Thune, A.B.C. Telegraphic Code, 5th ed. (London: Eden Fisher & Co., 1901), courtesy of Bill Burns.



Oliver Heaviside in the early 1890s, courtesy of IET Archives.

Heaviside was an unusual man; his best friend once described him as "a first-rate oddity" but "never... a mental invalid." After growing up poor in London, he left school at age 16 and went to work assisting his brother Arthur, a telegraph engineer at Newcastle. Oliver soon shifted to a job on a newly-laid cable across the North Sea, where he was frustrated by the way electrical distortion limited the rate at which signals could be sent along the cable. Hoping to solve this problem, he took up the study of electrical theory and, at age 24, "retired" from the cable company. Returning to London to live with his parents, he devoted all of his time and considerable talents to the mathematical analysis of telegraphic problems.

Heaviside read Maxwell's *Treatise on Electricity and Magnetism* soon after it appeared in 1873. Like many readers, he found it rich but not always elegantly expressed. In particular, Maxwell's chapter on the "Fundamental Equations of the Electromagnetic Field" did not give the set of four vector equations now known as "Maxwell's," but instead a list of thirteen main equations involving the vector and scalar potentials and other quantities that do not appear at all in the famous four equations. As he dug into what he called that "mine of wealth, Maxwell," Heaviside worked out many implications of the theory that Maxwell himself had not recognized, and also strove to cast it into a clearer and more readily usable form.

## Imperial Science, *cont.*

Maxwell had given formulas for how energy is distributed in the field around a charge or current but had not discussed how that energy might move around when the fields changed. Heaviside tackled this question in 1884 in hopes of shedding light on how energy gets from one end of a cable to the other. After a series of roundabout mathematical transformations, he hit upon a striking result: the energy flow at any point in the field is simply the vector product of the electric and magnetic intensities at that point. This had some surprising consequences, including that the energy conveyed by an electric current does not flow along within the wire, as everyone had always assumed, but instead flows through the space outside it, the wire serving only as a guide, not a pipeline. Convinced that such an important result should follow indirectly from the fundamental electromagnetic equations, Heaviside worked back from his energy flow formula and recast Maxwell's list of thirteen equations into the compact set of four we now know as "Maxwell's." (As it turned out, the Cambridge-trained physicist J. H. Poynting had worked out the energy flow theorem a few months earlier; that is why it is now called the "Poynting flux" rather than the "Heaviside flux." But Poynting was not as close as Heaviside to the problems of telegraphy and electromagnetic waves, and the flow formula did not lead him to the kind of deep restructuring of electrical theory that Heaviside undertook.)

Heaviside published his new equations early in 1885 in *The Electrician*, a London trade journal owned by cable interests. Calling them "Maxwell redressed," he used them almost exclusively in his own work from then on. His papers on the subject attracted little notice at first, but in 1888, experimental work by Oliver Lodge and Heinrich Hertz drew physicists' attention to electromagnetic waves, and they were delighted to find that Heaviside had already worked out the theory of such waves in great detail—in connection with telegraph problems. His work was soon taken up avidly by other "Maxwellians," his papers were collected and republished in two thick volumes, he was elected a Fellow of the Royal Society, and by the mid-1890s his set of "Maxwell's equations" was taking its place in textbooks. Einstein learned Maxwell's theory from a textbook based quite directly on Heaviside's work, and physics students ever since have studied essentially the equations Heaviside laid down in 1885. Few of them have had any idea how deeply rooted those equations were in the cable industry of late Victorian Britain.

This case study of Heaviside, cables, and "Maxwell's equations" illustrates the value of examining scientific work in the broadest possible context. It might not seem on the surface that in order to understand why Maxwell's equations look the way they do, or why they were formulated when and where they were, that we should first look to the role telegraph cables played in the British Empire—only when we put the equations in this context, however, can we see how deeply problems of telegraphic propagation and energy flow shaped their evolution, and so gain more insight into the reciprocal relationship between science and technology, between discovery and application.



Celebratory Lunch at Café Blue: From Left to Right: Nancy Nersessian (Chair of Section L); Harry Lucas (HSS Supporter); Janet Browne (Retiring Chair Section L); Betty Smocovitis (Chair Elect Section L); Jay Malone (HSS Director); Peter Hunt (Bruce's and Elizabeth's son); Bruce Hunt (Sarton Lecturer); Elizabeth Hedrick (Bruce's spouse); Melinda Gormley (Section L Secretary).

# Hands-on HPS at the Marine Biological Laboratory

*by Daniel Liu, Hanna Lucia Worliczek, and Michelle Lynne LaBonte*

How much science does a historian of science need to know? Some of us come in with PhDs in the sciences, some become artificially uninformed (*à la* Latour's *Laboratory Life*), and the remainder of us learn on the fly. With the current emphasis on the analysis of scientific practice and the scientist's encounter with material objects, as well as the continuing emphasis on tools and instruments, more historians are participating in the laboratory experience as a way of gaining analytical insight that supplements archival, written sources.

Last November 13–17, the Marine Biological Laboratory (MBL) at Woods Hole, with generous financial support from the James S. McDonnell Foundation and the National Science Foundation, hosted the three of us (Michelle, Dan, and Hanna) for a one-week microscopy workshop, "The Life Cycles of Microscopic Imaging in Biology." The MBL McDonnell Initiative, run by Kate MacCord (MBL), Jane Maienschein (Arizona State University and MBL), and David Mark Welch (MBL), aims, in the McDonnell initiative's words, to bring "history and philosophy of science and the life sciences together to transform discovery." We—two graduate students, one postdoc—are all students of the history of advanced twentieth-century microscopy, and only one of us had expertise in anything beyond basic, high school classroom-level microscopy.

The workshop was conceived and organized by Karl Matlin (University of Chicago and MBL) and Kate MacCord, to explore the possibilities of "doing HPS in the laboratory" with two goals. First, to "determine if close interaction of historians and philosophers of science and active laboratory investigators influenced how each group thought about their own work." And second, to "explore microscopic imaging in biology, an old field that is rapidly developing because of new technological innovations."[1] We worked in conjunction with scientists in their laboratories, experts from the Central Microscopy Facility, and librarians of the MBL for four days, trying to see if three historians of science could ask novel questions about the history and practice of microscopy.

Many readers of this *Newsletter* know what these MBL study sessions are like: a small group of historians and philosophers talking together, studying together, eating in the MBL cafeteria together, and crashing in dormitories. What we learned in four days would have taken each of us individually weeks, if not months, and a small fortune in laboratory equipment to achieve.

The workshop began with a crash course on post-Abbean (ca. 1872) physico-mathematical theory of optical microscopy by Louis Kerr (MBL) and Jim McIlvain (Carl Zeiss): overviews of dark field, phase contrast, differential interference contrast (DIC), several varieties of fluorescence microscopy, Airy scan, and TEM (Tunneling Electron Microscopy) and SEM (Scanning Electron Microscopy), as well as several new optical techniques and systems such as Köhler illumination, infinity-corrected optics, wide field deconvolution, wide field apotome, and single-photon imaging. And this was just day one! For all of us, the speed and depth of experience gained by this hands-on training was well worth it.

Michelle and Dan spent time in the labs of Tomomi Tani and Rudolf Oldenberg—two MBL scientists who work primarily on developing new optical instruments and software for processing image data. One of Rudolf's postdocs, Mai Tran, obtained some fresh, gravid sea urchins for Michelle and Dan to extract eggs from; then, Michelle and Dan were given free rein to use two of the lab's (older) polarization scopes, each of which was connected to current software. What was eye-opening was the degree of contrast control current hardware and software allows, compared to what was available only fifty years ago: from relatively simple histogram manipulation (similar to *curves* manipulation in Photoshop) to the LCD-based polarizing LC-PolScope universal compensator hardware

1 Workshop report, p. 1



*Continued on Page 15*

## Hands-on HPS, *cont.*

Ruldof invented in the 1990s (Figure 1). Even more physically impressive was the microscope and laser illumination setup Tomomi built in his lab. (It was a remarkably warm place to be in November, heated as it was by a bank of computer equipment and a mini-fridge-sized laser generator.)

At one point, Tomomi off-handedly remarked that the fundamentals of light microscopy have remained stable for the last 150 years; this was certainly not the impression you'd get looking around the laboratory, even if the building itself is just over a century old. Although the basics of forming a light path through a specimen may have remained the same, just about every accessory and device around the light path has been continuously altered and updated. The result is a visible accretion of skills, equipment, and techniques, as well as a clear division of labor. Here, the division is not necessarily between the inventors and users, but between scientists working at the cutting edge of microscopic technique and the skilled technicians like Kasia Hammar (MBL), who might be responsible for *making* images from specimens using a wide range of available, often older instruments.



Figure 1.

Since Dan was particularly interested in specimen preparation technique, Kasia showed him some of the newer and older rotary microtomes used for thin-sectioning plastic-embedded specimens, before imaging by TEM. While thin sectioning is nothing new, computer-controlled serial sectioning has recently made it possible to construct three-dimensional TEM images of entire cells and tissues. This technique today is automated, but data-intensive, and serves as a reminder that, historically, using two-dimensional micrographs to reconstruct a three-dimensional picture was difficult and labor-intensive.

Meanwhile, Hanna spent time in the lab of Jessica Mark Welch, a specialist in the spatial structure of microbial communities and the methods used to study them. Hanna wanted to learn not only how microscopy images were created by Jessica and her lab, but also how they are selected, interpreted, and disseminated across the experimental process. Jessica and her postdoc Tabita Ramirez-Puebla invited Hanna to participate in the imaging process of an ongoing project on biofilms. Using confocal fluorescence microscopy—a serial image capture technique that captures a stack of optical sections and digitally reconstructs a single, three-dimensional image—they explored cuttlefish tissues and the associated colonizing bacteria. These had not been investigated before, and therefore represented a novel kind of microscopic sample. Hanna, Jessica, and Tabita examined them while acquiring images with the microscope, and discussed them in comparison with images of well-known samples, displayed side by side on the monitors of the imaging system (Figure 2).[2]

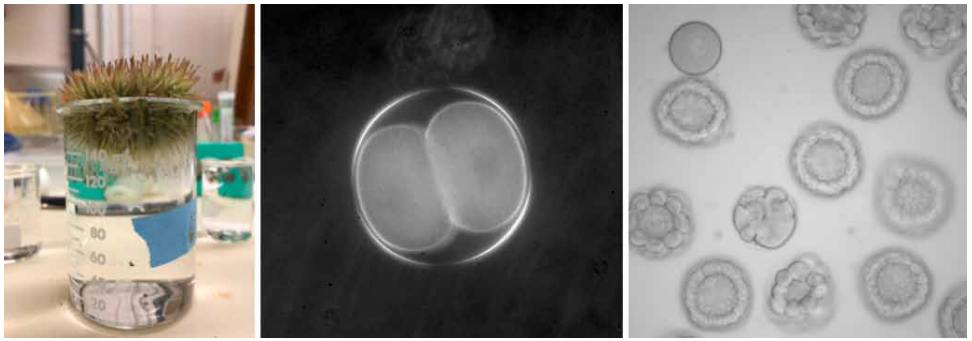


Figure 2.

2 A short description of this method can be found on Jessica's website: **http://www.mbl.edu/jbpc/staff/jmarkwelch/** and more detailed in Alex M. Walm et al., *PNAS* 2011, 108 (10) 4152-4157

*Continued on Page 16*

## Hands-on HPS, *cont.*

Through the auspices of this workshop, Hanna participated in a complex teaching process between an experienced researcher and her postdoc, where both theoretical knowledge and practical skills were being disseminated. Moreover, Hanna, Jessica, Tabita and Louis Kerr (who heads the MBL's Central Microcopy Facility), discussed aspects of their work with images that often remained hidden from outsiders: the roles of beauty and affection, the artistic aspects of biological imaging, the selection of "representative images," strategies to sell new knowledge to an audience, conflicts of those aspects with "pure science," and interactions of all of the above with best practice standards in the scientific field. Notably, Hanna's direct participation in the production of knowledge about bacterial communities and fluorescence microscopy leaned on her prior experience as a microbiologist. In this particular case, it was essential to have a common language to converse with scientists and to understand the biological questions that motivate the lab's experiments.

The most striking aspect for Hanna, herself interested in historical practices of image interpretation and dissemination of visual knowledge, was to participate in this teaching process and to learn what motivates various decisions made during imaging and image interpretation, especially how thoughtful aesthetic aspects were weighed against scientific accuracy.

Translating HPS theory into questions about what was happening at a particular moment allowed for a relaxed and thoughtful conversation, one that enabled a dissection of tacit and explicit knowledge applied to each step of knowledge production. As a result, Hanna gained a new analytical perspective on the dissemination of visual knowledge for her historical research project and a fundamental understanding of the modes of this process and the scientific and non-scientific motivations for decisions.

Besides the lab experience, we participated in a reading group, and archival research prior to and after the workshop. The last day of the workshop featured our own and our host's reflections of the shared lab-experience and presentations by several guest speakers: Jutta Schickore (Indiana University, HPS), Laura Perini (Pomona, philosophy), and the team of Hari Shroff (NIH, bioengineering) and Patrick La Rivière (University of Chicago, biophysics). Other participants included Cathleen Schlundt (Helmholtz Centre for Ocean Research Kiel and MBL), Beatrice Steinert (Brown University), Yoshi Yoshida (University of Minnesota), and Talon Chandler (MBL and University of Chicago).

So what does an historian of science gain from an experience like this? We are not sociologists of science, and our goal was never to study the laboratory as such. What we left with is a sense of where microscopy is going, and a sense for the wide array of apparatuses and techniques that will be used going forward. It was an invaluable experience for all of us to witness and experience tacit practices interacting with stated aims, methods, and epistemic strategies. Listening to the MBL's scientists and technical staff talk about "science in the making" also required us to partially leave aside our own historiographical or philosophical interest for some conversations. For the MBL scientists and technical staff as well, the workshop became an opportunity for them to decelerate their usual research dynamics in exchange for lengthy conversations about every step of their work, leading to reflections on their own scientific practices and modes of disseminating knowledge.

If such an experience conditions us as historians to look for different clues in the archival record, then the value of this workshop is clear. Besides the archival work two of us did in the MBL library, the whole place, in a way, was a living archive: a collection of technologies, techniques, and theories that are all still in use today—and in its living and adapting scientific personnel, much more than that.

Dan, Hanna, and Michelle would like to thank Kate, Karl, Jane, the generous financial support of the McDonnell Foundation, and the staff and scientists of the MBL for making the workshop happen.

# Report on HSS-sponsored Panel, "The Emergence of Racial Modernities in the Global South," at the 2018 American Historical Association Meeting

*by Sebastián Gil-Riaño (University of Pennsylvania) and Sarah Walsh (Universidade de Lisboa)*

Braving an extremely cold January weekend, a number of scholars gathered in Washington, DC to discuss race science in the Global South at the American Historical Association's 2018 Annual Meeting in a panel sponsored by the History of Science Society. Responding to the conference's larger theme of "Race, Ethnicity, and Nationalism in Global Perspective," Sebastián Gil-Riaño (University of Pennsylvania), Miranda Johnson (University of Sydney), Ricardo Roque (Universidade de Lisboa), and Sarah Walsh (Universidade de Lisboa) presented papers that examined the complex ways that scientific conceptions of race and ethnicity have been activated across the Global South in the twentieth century. The panel was especially meaningful as it marked the concluding event of the Australian Research Council Laureate Fellowship project "Race and Ethnicity in the Global South," whose director, Warwick Anderson (University of Sydney), served as chair.

The panel, "The Emergence of Racial Modernities in the Global South," was envisioned as an opportunity to reflect on, "the comparative and transnational dimensions of race science in the southern hemisphere…to show how the human sciences, including human biology, look different from southern standpoints." The four presenters were especially encouraged to consider the role of indigeneity and indigenous peoples in the Global South, "whether as the subject of attempted elimination or erasure, or as a legitimating constituent of modern racial formations, or as ambivalent and oppositional presence in modernizing programs." This emphasis on indigeneity was not simply a heuristic to create connections between scholars whose areas of expertise include the potentially disparate fields of the history of science and anthropology, indigenous studies, and Latin American history. Rather, the panel showed that across various regions the human sciences have played a similar role in simultaneously racializing and pathologizing indigenous peoples in settler societies while also providing tools for indigenous elites to discredit those claims.

The panel began with Sarah Walsh's presentation, titled "The Chilean Exception: Racial Homogeneity, Mestizaje, and Nationalism," in which she argued that the acceptance of race mixing among racial theorists, eugenicists, and physicians had the surprising result of contributing to a reframing and reinstatement of racial hierarchy in early twentieth-century Chile. By demonstrating how the myth of Chilean racial exceptionalism in the early twentieth century was predicated on the idea that some types of racial mixture were better than others, Walsh explained how multicultural settler societies have acknowledged the reality of racial mixture while maintaining belief in a racial hierarchy.

Miranda Johnson's presentation drew from her new research project examining the fashioning of identities and the making of racial subjects in the early twentieth century Pacific and focused on the conceptual and affective work conducted by a cohort of young, university-educated and professionally-trained Māori leaders. These founding figures of the "Young Māori Party" grappled with a demographic landscape in which the fate of the Māori population shifted from an expected decline and disappearance to a remarkable and rapid increase. In response, they sought to appropriate settler discourses of racial amalgamation to show that, as racially-mixed subjects, they were uniquely poised to become future-makers. At the same time, Johnson demonstrated how their enterprise was riddled with self-doubt, professional uncertainty, and cultural ambivalence.

Sebastián Gil-Riaño's paper examined debates sparked by an ambitious 1955 conference titled "Race Relations in World Perspective" held at the University of Hawai'i in Honolulu and how social scientists endeavored to turn race relations research into an international and



*Continued on Page 18*

## The Emergence of Racial Modernities in the Global South, *cont.*

value-neutral field of scholarly inquiry. The conference was organized by white sociologists who were graduates of the Chicago sociology department who imagined the meeting as a sober and objective counterpoint to the Bandung conference, which they described as driven by an overly affective and communist-leaning politics that risked unleashing, in their minds, a global tide of anti-white antagonism. However, as Gil-Riaño's analysis showed, Chicago sociologists' descriptions of Hawai'i as a model of interracial harmony and proposals for an international society made little mention of indigenous peoples and reveal the ways in which the anti-racist politics of social science during the Cold War was informed by orientalist and settler colonial perspectives.

In his presentation, Ricardo Roque focused on the Timorese field work conducted by Portugal's leading anthropologist during the first half of the twentieth century: António Mendes Correia. Correia was primarily a physical anthropologist, theorist, and self-described "armchair" scholar, yet in 1953 he took part in a major anthropological expedition sent by the Portuguese empire's Ministry of Overseas to the colony of East Timor. Correia's month-long sojourn in Timor afforded him with an opportunity to follow up on reports about an anomalous "red-haired race" living in the Timorese village of Aituha and during the month Correia spent on the island he did not concern himself with anthropometric measurements and instead put what little skill he had in field research to work in collecting origin stories from Timorese elders that sought to confirm this story. By demonstrating how Correia used ethno-historical methods to conceptualize racial origins, Roque invited us to think more carefully about the ways in which twentieth-century race science has also appeared under the guise of ethnographic endeavors "aimed at recovering and interpreting indigenous oral traditions as biological ethnogeny."

Although the participants agreed that the panel was a success, they also regretted the fact that it marks an end to REGS (the name we used for our Australian Laureate project). Though REGS has ended in a formal sense we can take immense comfort in the fact that it has laid the groundwork for future collaborations and for continued exploration of what it means to study racial conceptions and the human sciences from the perspective of the Global South. We might also take inspiration from the fact that securing the legacy of REGS coincided with important institutional changes taking place within the American Historical Association. Indeed, a couple of weeks after our panel in frosty D.C., the *American Historical Review* published an essay titled "Decolonizing the *AHR*," which is now listed as its most read piece. In this essay, the *AHR*'s current editor Alex Lichtenstein acknowledged that when it comes to "decolonization" the *AHR* has a long way to go and that it is now time to take the risk of confronting its own "potential complicity" in the history profession's past lack of openness "to scholars and scholarship due to race, color, creed, gender, sexuality, nationality, and a host of other assigned characteristics"—which might also include geography. Lichenstein's essay describes a series of actions that the *AHR* is taking in order to begin decolonizing, including diversifying its Board by expanding from thirteen to sixteen members and asking Board members to do outreach work in conferences such as the Berkshire Conference of Women Historians, the Native American and Indigenous Studies Association, the Association for the Study of African American Life and History, and the National Association of Chicana and Chicano Studies. As we learned during our time with REGS, decolonizing the ways we write, teach, and produce history is an ongoing process that requires sustained and difficult effort. At the same time, as the geographic, linguistic, and racial diversity of our panel topics attests, the work of decolonization benefits immensely from collaboration between scholars with differing regional, disciplinary, and theoretical standpoints and we hope that the Global South will continue to act as an organizing rubric for future work.

# Graduate and Early Career Caucus: Activities Update

The Graduate and Early Career Caucus has come out if its winter hibernation and is thrilled to offer a belated snapshot of our activities, both completed and forthcoming. This past year in Toronto, GECC offered a record-breaking amount of programming. In addition to annual events such as the Graduate and Early Career Mixer, the Mentorship Program, the Women's Mentorship Event, and the CV review, the caucus also sponsored a roundtable titled "Diversifying the Profession: Perspectives of Diversity, Inclusivity, and Equity in the History of Science" as well as a roundtable on "Writing Skills for Graduate Students." Our diversity panel was especially successful and provoked a great deal of conversation about the ways in which we can do more to support students of diverse backgrounds in our institutions and to encourage diversity within the profession. GECC is committed to continuing to discuss and promote diversity within our caucus and in the larger HSS community. We welcome all input and are especially interested in collaborating or coordinating with other caucuses.

Moving forward, GECC will be undertaking two major initiatives in 2018. The first is an overhaul and update of the GECC website (more details of which will be featured in the summer newsletter). The second concerns the development of our mentorship program. This program was developed by GECC and inaugurated at HSS 2008. It was, and is, specifically designed to put mentees in contact with individuals beyond their own institutions, people with whom they might not otherwise have had a chance to converse. The program has been successful due to the enthusiastic involvement of many participants over the past decade, but we are always looking for more mentors and mentees.

We would like to emphasize that mentorship, as we define it, requires neither a lifetime commitment nor an extensive CV. It does not even require a PhD. We would like to strongly encourage candidates at the end of their programs to consider mentoring those who are just beginning their dissertations. The goal of our program is to get people talking: talking about writing, research strategies, conferences, travel, work/life balances, and anything else that has the potential to demystify the profession. The goal of mentorship is to share information, to circulate the kind of tacit knowledge about academia that one does not learn in school (so to speak). Many of you were graduate students once; tell us what you wish that you had known when you were us!

A formal call for participants will be circulated later in the year. But it is never too early (or too late) to think about the ways in which your experience(s) can be of aid to aspiring academics and future PhDs. Moreover, contributing to a culture of openness and transparency, collaboration and support, is one of the ways that you can help ensure that the next generation of scholars is as diverse and inclusive as possible.

GECC is also searching for a new Diversity Officer (or officers) who would begin their duties at the 2018 conference in Seattle. Interested parties are asked to reach out to Co-Chair Kristine Palmieri (**kpalmieri@uchicago.edu**) to discuss the position.



*Continued on Page 19*

# Member News

**Lindsay Alberts** (Boston College) has recently published an article in the September 2017 edition of *Journal of the History of Collections (Oxford)*: "Francesco I's Museum: Cultural Politics at the Galleria degli Uffizi." To read, please visit **the journal website**.

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In November 2017, **Theodore Arabatzis**' (National and Kapodistrian University of Athens) article, "What's in it for the Historian of Science? Reflections on the Value of Philosophy of Science for History of Science," was published in the *International Studies in the Philosophy of Science Journal* (31:1 (2017), pp. 69-82).

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**Andrew Butrica** recently finished drafting a history of the IEEE (Institute for Electrical and Electronics Engineers), and it is currently undergoing review in preparation for publication.

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**Rebecca Charbonneau** (National Radio Astronomy Observatory), was **recently awarded** a **Gates Cambridge scholarship** to pursue her PhD in the History and Philosophy of Science at the **University of Cambridge**. Charbonneau's research regards space history and the history of radio astronomy.

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**Barbara Di Gennaro** (Yale University) has recently published an article in the April 2017 edition of the *Annals of Science*: "Craft, Money and Mercy: An Apothecary's Self-portrait in Sixteenth-century Bologna" (74 (2): pp. 91-107).

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**Nahyan Fancy** (DePauw University) recently hosted and organized the Second Annual Undergraduate Research Conference on Science, Technology, Medicine and Society, which took place on 9-11 March 2018 at DePauw University in Greencastle, Indiana. For more information, **please visit the conference website**. Two of Fancy's articles have been published within the past year. "Post-Avicennan Physics in the Medical Commentaries of the Mamluk Period" was published in the *Intellectual History of the Islamicate World*, Volume 6 Issues 1-2 on pages 55-81. In 2017, "Womb Heat versus Sperm Heat: Hippocrates against Galen and Ibn Sīnā in Ibn al-Nafīs's Commentaries" was published in *Oriens* Volume 45, Issue 1-2, on pages 150-175.

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Chicago University Press has recently published **Yulia Frumer**'s (Johns Hopkins University) book, ***Making Time: Astronomical Time Measurement in Tokugawa Japan*** (2018).

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A documentary film on Copernicus, "Tajemnice De Revolutionibus" ("Secrets of De Revolutionibus"), directed by Michał Juszczakiewicz and produced by Robert Szaj of the Nicolaus Copernicus Foundation, has been televised on Polish public television including interviews with **Owen Gingerich**, **André Goddu** (Stonehill College), Daniel Pietro Omodeo, Jarosław Włodarczyk, and Jerzy Sikorski. The director is preparing an English version. An English translation of the announcement is available on Google by searching: Premiera filmu dokumentalnego "Tajemnice de revolutionibus."

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**Amanda Golbeck** (University of Arkansas for Medical Sciences) recently published her book ***Equivalence: Elizabeth L. Scott at Berkeley*** (Chapman and Hall/CRC).

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**Daniel Halverson**'s (Case Western Reserve University) article, "Monographs on the Universe: Americans Respond to Ernst Haeckel's Evolutionary Science and Theology, 1866-1883" was accepted for publication by *Past Tense Graduate Review of History* and is due to appear in the upcoming 2018 issue.

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**Gary Hatfield** (University of Pennsylvania) published an article titled "Helmholtz and Philosophy: Science, Perception, and Metaphysics, with Variations on Some Fichtean Themes" in the *Journal for the History of Analytical Philosophy* 6.3 (2018), 11-41. It appeared in a special issue on "Method, Science,

## Member News, cont.

and Mathematics: Neo-Kantianism and Analytic Philosophy."

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**Hans J. Haubold** (United Nations) would like to report that The United Nations is implementing an initiative for the development of astronomy world wide (UN BSSI). They published the report on UN BSSI covering the period from 1991 to 2012 and beyond. The report provides information on planetariums, astronomical telescopes, space weather instrument networks, and publications generated by UN BSSI.

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The section for history of science and technology (GNT), directed by **Prof. Dr. Klaus Hentschel** (University of Stuttgart, Germany), just celebrated its 50th anniversary since its foundation right after the transformation of the former Stuttgart Polytech into a University. Its chairs have been professors Armin Hermann (for 33 years), Moritz Epple and (since 2006) Klaus Hentschel. Specialities of GNT in Stuttgart are: history of the physical sciences and of research technologies, biographical & prosopographic studies & databases (such as DSI on illustrators), visual cultures of science & technology; comparative history; interplay of experimentation, instrumentation & concept formation; gender studies & history of mentalities.

A large jubilee volume with many photographs and full documentation of publications, talks, teaching and research activities throughout these years has just been published by Klaus Hentschel (ed.) **"50 Jahre GNT," Stuttgart, Berlin & Diepholz, 2018, ISBN 978-3-86225-110-0. html**. For information about the program, please visit **www.uni-stuttgart.de/hi/gnt**.

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**Emily Herring**'s (University of Leeds) article, "'Great is Darwin and Bergson his Poet': Julian Huxley's Other Evolutionary Synthesis" was published in the *Annals of Science* 75(1), pp. 40-54. **It is available online.**

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As part of the University of Michigan's celebration of its bicentennial, Dea Boster and **Joel Howell** (University of Michigan) co-authored a new history of the medical school, *Medicine at Michigan: A History of the University of Michigan Medical School at the Bicentennial* (University of Michigan Press, 2017).

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**Edward Jones-Imhotep** (York University) was awarded the Abbot Payson Usher Prize from the Society for the History of Technology for "Malleability and Machines: Glenn Gould and the Technological Self," *Technology and Culture* 57 (2016): 287-321. He has also recently published *The Unreliable Nation: Hostile Nature and Technological Failure in the Cold War* (MIT Press, 2017).

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**Henk Kubbinga** (University of Groningen) published *Making molecularism III. Catalogus librorum &c. Selected papers III* (Groningen University Press) as part of a series on the history of the atomic and molecular theory. The focus this time is on the role of libraries, from Piso's library at Herculaneum—where Lucretius, about 60 BCE, forged his *De rerum natura*, in praise of the atomic theory—over the library of the inventor of the molecular theory, Isaac Beeckman (who, ca.1620 CE, used Lucretius' poem), to that of a modern specialist in the field. The book is at once a massive plea for the creation, under the wings of the European Physical Society at Mulhouse (France), of the Albert Einstein Library, as a safe haven for the paper ware of the past that made the history of Physics and which, in our e-Era, counts among the endangered species.

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**Susan Lamb** (Hannah Chair in History of Medicine at the University of Ottawa) was invited to give the prestigious Heberden Society Lecture at the New York Academy of Medicine. Professor Lamb's public lecture was introduced by Rosemary Stevens and explained why the ideas of psychiatrist Adolf Meyer remain at the center of debates in American psychiatry today more than a century after their introduction.

## Member News, cont.

In 2017, **Ed Larson** (Pepperdine University) and **Michael Ruse** (Florida State University) published the book, *On Faith and Science*, with Yale University Press. In 2018, Ed published the monograph, *To the Edges of the Earth: 1908, the Race for the Three Poles, and the Climax of the Age of Exploration*, with HarperCollins. An advance review in Booklist noted that it is, "a fine psychological study, a story of bravery and obsession and men who pushed themselves to the edge of sanity. Larson, who won a Pulitzer Prize in history for his book about the Scopes Trial (*Summer for the Gods*, 1997), is a meticulous writer, telling us not just what happened on the three expeditions but-whenever possible-why and how the success or failure of these voyages of discovery would impact the very future of exploration itself."

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**Lewis Laska** (Tennessee State University) has been working on *A Cumulative Index to Scientific American, 1845-1947* for several years and the end is now in sight with 340,000 entries. There is currently no cumulative index to Sciam, which led to Laska's work. If you would like to assist in this venture, please contact him at Lewis L. Laska, P.O. Box 252, Madison, TN 37116, (615) 491-2928, **llaska@verdictslaska.com**.

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**Daniel Lewis**'s (Huntington Library) book ***Belonging on an Island: Birds, Extinction, and Evolution in Hawai'i*** will be published in April 2018 (Yale University Press).

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**David Luesink**'s (Sacred Heart University) article, "**Anatomy and the Reconfiguration of Life and Death in Republican China**" was published in the *Journal of Asian Studies* 76, no. 4 (November 2017): 1009-034.

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In late 2017, Smithsonian Secretary David O. Skorton named **Michael J. Neufeld** (Smithsonian National Air and Space Museum), a Senior Curator at the National Air and Space Museum, a Smithsonian Distinguished Scholar, the highest research honor of the Smithsonian Institution.

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**Agustí Nieto-Galan** (Universitat Autònoma de Barcelona) has been promoted to a Full Professorship in History of Science at the Universitat Autònoma de Barcelona.

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**Sayaka Oki** (Nagoya University) recently published an article "Œ/Économie and Science in France during the Age of Social Reform: Agronomy, Natural History and Political Arithmetic" in *The Foundations of Political Economy and Social Reform: Economy and Society in Eighteenth Century France*, edited by Ryuzo Kuroki and Yusuke Ando published by Routeledge in January 2018.

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**Hyung Wook Park** (Nanyang Technological University, Singapore) has published "Managing Failure: Sir Peter Brian Medawar's Transplantation Research," *Notes and Records: The Royal Society Journal of the History of Science* 72 (2018), pp. 75-100.

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**Kevin Schindler** (Lowell Observatory) has written a new book with planetary scientist Will Grundy titled ***Pluto and Lowell Observatory: A History of Discovery at Flagstaff*** (History Publishing, 2018).

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**Angela Shaffer** (American Public University System) is currently instructing "Medieval to Modern World 800 C.E. - 1750 C.E." and "World Mythology" at Front Range Community College, Boulder County Campus, Colorado. The former assists scholars with embodying personages from the Scientific Revolution in an active learning setting. Segments include Think-Tank Challenge and Thought Experiments in which scholars use imaginary time travel in order to relate to the medieval mindset. World Mythology makes a case for an evolutionary perspective of antiquity as told through myth,

## Member News, cont.

examining reality with a strong focus on natural philosophy.

Shaffer also completed and submitted her first grant proposal for an undergraduate scholarly journal that demands interdisciplinary research methodology and objective writing. Uniting art and science, the Humanities Mythology conference will introduce accomplishing associates to academic society, preparing scholars for further study in higher-education.

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**Willis Shirk**'s (Meraki Enterprises LLC) latest book, *A History of the Atomic Space Age and Its Implications for the Future* has just been published (Dog Ear Publishing, 2018). More information can be found at **https://www.wshirk.com**.

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Asteroid 1978VT8 (which describes when it was discovered) has been renamed after **Virginia Trimble** (University of California, Irvine) and is now called 9271Trimble. Virginia has also just been elected a Patron of the American Astronomical Society (whose Historical Astronomy Division she formerly chaired) by its Board of Directors.

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The Science History Institute has released a documentary film that **Roger Turner** (Science History Institute) has worked on as a researcher for the last two years. "The Instrumental Chemist" explores the life of Arnold Beckman, including beautifully filmed scenes of people who continue to use today's descendants of the scientific instruments Beckman developed. For more information, visit **https://www.sciencehistory.org/arnold-o-beckman-legacy-project**.

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**Peter D. Usher** (The Pennsylvania State University) has published "**Shakespeare's** *Antony and Cleopatra* **and the New Astronomy**." *Notes & Queries* 65:1, 81-83, 2018.

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**Ronald Vasile**'s first book, ***William Stimpson and the Golden Age of American Natural History***, will be published in June 2018 by **Northern Illinois University Press**.

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**Elizabeth Watkins** (University of California, San Francisco) was named the 2018 American College of Obstetrics and Gynecology Fellow in the History of American Obstetrics and Gynecology. This grant will support archival research for her project, "IUDs and Implants: How Long-Acting Contraception Made a Comeback in 21st Century America."

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**Simon Werrett** (University College London) and **Lissa Roberts** (University of Twente) are pleased to announce the publication of an edited volume of essays, titled *Compound Histories: Materials, Governance and Production, 1760-1840* (Leiden: Brill, 2017). **The book is available to download for free via Brill's Open Access site.** *Compound Histories* offers a new view of the period during which Europe took on its modern character and globally dominant position. By exploring the intertwined realms of production, governance and materials, it places chemists and chemistry at the center of processes most closely identified with the construction of the modern world. Rather than emphasize revolutionary breaks and the primacy of innovation-driven change, the volume highlights the continuities and accumulation of incremental changes that framed historical development. Contributors are: Robert G.W. Anderson, Bernadette Bensaude Vincent, José Ramón Bertomeu Sánchez, John R.R. Christie, Joppe van Driel, Frank A.J.L. James, Christine Lehman, Lissa L. Roberts, Thomas le Roux, Elena Serrano, Anna Simmons, Marie Thébaud-Sorger, Sacha Tomic, Andreas Weber, and Simon Werrett.

## A Day in the HSS Executive Office

*by Jay Malone, History of Science Society*

Borrowing a page from our Editorial Office, I thought members might be interested in learning more about a day in the Executive Office. I would say a "typical' day, but none are typical. The activity on this sunny day last Fall was framed by the impending annual audit and the annual meeting in Toronto, which was approaching like a freight train.

During the morning, I made two conference calls, one to Stephen Weldon, chair of our Technology and Communications Committee, and one to Michael Gordin, who is chair of our Committee on Publications (CoP). For the former, I was joined by HSS's Director of Media and Engagement, Jessica Baron, and HSS's still-then-new Coordinator, Ryan Feigenbaum. I had arranged to speak to each of our committee and caucus chairs in preparation for their biannual reports, which were coming due. In our conversation with Stephen, we discussed progress on HSS's statement on digital humanities (part of our strategic plan); the committee's efforts on digital scholarship, with an ambitious goal of dedicating a portion of our website to digital history of science; the fate of our social media policy, which could be paraphrased as "don't be a jerk," and has proven somewhat controversial; possible new members for the committee (I later went in to look at the volunteer spreadsheet, where members offer to help with HSS business (see **https://hssonline.org/wpgforms/volunteer-info/**), and sent him some suggestions; discussed arrangements for the committee for the Toronto meeting; and various other topics. With Michael Gordin, the conversation centered around the search for a new Society Editor, which has been the Committee on Publications' focus this past year (we plan to name the new Editor in June 2018). I shared with Michael some of the procedures that we followed in our prior search, along with some of the relevant documents. (The Committee interviewed the prospects in Toronto.) And since the Technology Committee is linked to the CoP, I also relayed to Michael a synopsis of the conversation I had enjoyed with Stephen Weldon.

As a follow up to the calls, I sent a draft of the social media policy to our insurer to make sure that it was in accord with our coverage and also asked our lawyer for a template for such policies so that we could check the draft against the template (I talk to our lawyer more than I speak to my mother on the premise that "an ounce of prevention" is good advice).

I then spoke to our lawyer about a proposal from Unite Here, a union that organizes hotel workers, which had asked HSS to join their Fair Hotel movement. I corresponded with our site selector, Craig Hendrick, on this subject, asking about the ramifications on site selection if we did sign the agreement. I combined their comments and sent them to the chair of Committee on Meetings and Programs, Karen Scholthoff, so that the Committee could discuss this and make a recommendation to Council.

I then followed up with our Reingold Prize winner, Patrick Anthony, whose phone number I had surreptitiously secured so that our Reingold Committee Chair, Helen Curry, could phone him with the good news (Helen, a former Reingold Prize winner herself, remembered her own phone call and thought that this was a happier way to deliver the news than in an email message). As with all prize winners, I asked him for a recent photo, for how he would like his name to appear on the prize plaque, confirmed his invitation to the prize winners' reception in Toronto, and other administrative tedium. I then relayed the results to a major donor to the Reingold Prize and invited this generous benefactor to the prize reception to meet Patrick. After that, I proceeded to contact each of the 12 students who had submitted an article for the Prize to thank them for their participation in

## HSS News, cont.

the process, which elevated the overall quality of the Reingold submissions. **(If you are a student, please submit your essay for the 2018 prize: deadline 1 June).** Members can read Patrick's essay, "**Mining as the Working World of Alexander von Humboldt's Plant Geography and Vertical Cartography**," in the March issue of *Isis*.

My next task was to contact the Executive Committee members to confirm their arrival and departure times for Toronto so that we could coordinate their stays with the conference hotel (since the officers arrive the Tuesday evening of the conference week, meet all day Wednesday, and then again on Thursday morning, followed by the Council meeting on Thursday afternoon, HSS pays for expenses that are not covered by their home institutions). For Executive Committee and Council meetings, I work in conjunction with the HSS President to set the agendas, as well as assemble the materials for the briefing books (some several hundred pages). Our officers spend long hours on Society business, and I am grateful for their time.

Other parts of the day featured a mash of fulfilling requests from our auditors, including an estimation of the number of volunteer hours spent on Society business. Since I do not ask volunteers to record their hours, I make educated guesses. For our officers alone that amounted to some 317 hours over the fiscal year. When we include all of the volunteers—Council members, committee members, caucus and interest group leaders, etc.—the total number of hours jumps to 3,475. When I say that the Society could not possibly function without its volunteers, I am not exaggerating.

Finally, because I am always worried about the Society's finances, I worked with our hotel a/v provider to see if we could save money without compromising quality (I always tell the providers that it is essential that the equipment work properly and that technicians are standing by—presenters at our conference do not get a second chance). Audio/visual and wifi expenses are among the higher priced items at our annual conference, and I was pleased that our final costs came in around $35,000 US, a nice savings over the expected (and budgeted) $42,000 US. The annual meeting has thousands of such pieces, and I am grateful for the wonderful staff and volunteers we have to help assemble the puzzle.

## GDPR is Coming

Many of our readers may not be aware of the General Data Protection Regulation that is slated to take effect on 25 May 2018. The GDPR is a part of the Charter for Fundamental Rights of the European Union. Its deceptively simple declaration appears in Article VII of the Charter, stating that everyone has the right of protection of personal data concerning him or her. The Charter was published in 2016 but has assumed a pressing urgency in the wake of Cambridge Analytica, Facebook, Equifax data breaches, and other misuses of personal information. The Regulation will affect all EU countries, as well as Iceland, Norway, and Liechtenstein, and all organizations, irrespective of where they are located, will need to abide by its rules. This is not a cybersecurity regulation but rather an effort to give individuals control over their personal data. Personal data carries a broad definition and includes any information that identifies (or makes identifiable) any person through IP addresses, cookies, location data, and any factor specific to physical, genetic, mental, economic, cultural, or social identity, among other identifiers. HSS is working with the University of Chicago Press to make sure that we are compliant when the regulation takes place. If you have any questions, please do not hesitate to contact the Executive Office at **info@hssonline.org** or 574.631.1194.

## 2017 HSS Meeting Report

With 679 total attendees, a near 10% increase from last year, the 2017 HSS meeting in Toronto attests to a growing, strong interest in the history of science. Additionally, over 82% of attendees were HSS members, which is higher than usual and indicative of attendees' commitment to the discipline. (See Figure 1, next page, for more attendee demographics.)

### Meeting Satisfaction

Not only was the meeting well attended, but it was also enjoyable, at least according to the 237 attendees who responded to our post-meeting survey. Over 92% of them rated their experience positively, and not one person rated it negatively (See Figure 2, next page). In particular, attendees enjoyed the meeting program, quality of papers, layout and services of the hotel, charm of the host city, mentorship opportunities offered by the Graduate and Early Career Caucus (GECC), rooms designated for quiet study and nursing mothers, engaging plenary and distinguished lectures, and much more. The book exhibit, deftly organized by Michelle Marvin, was again a hit, with over 90% of attendees paying it a visit. Many of the visitors were bibliophiles, apparently, since over 40% bought one or more books. Additionally, about 85% of respondents welcomed the alteration of the meeting program so that Saturday evening was open, and over 87% of respondents favored the continued inclusion of a Poster Reception. As pleased as we are with these results, we hope to better the experience for next year, which is why we solicit and carefully consider the responses to our post-meeting survey.

| 2017 Meeting | | 2016 Meeting | | 2015 Meeting | |
|---|---|---|---|---|---|
| Book Exhibitor | 23 | Book Exhibitor | 36 | Book Exhibitor | 24 |
| Guest | 4 | Guest | 0 | Guest | 5 |
| HSS Member | 335 | HSS Member | 277 | HSS Member | 370 |
| HSS Member (Low Income) | 38 | HSS Member (Low Income) | 41 | HSS Member (Low Income) | 42 |
| HSS Member (Student) | 145 | HSS Member (Student) | 95 | HSS Member (Student) | 103 |
| HSS Member (One Day) | 12 | HSS Member (One Day) | 11 | HSS Member (One Day) | N/A |
| Non-Member | 77 | Non-Member | 58 | Non-Member | 111 |
| Non-Members (Low Income) | 15 | Non-Member (Low Income) | 25 | Non-Members (Low Income) | 31 |
| Non-Member (One Day) | 19 | Non-Member (One Day) | 10 | Non-Member (Student) | 47 |
| Non-Member (Student) | 20 | Non-Member (Student) | 38 | One Day | 14 |
| Staff | 3 | Staff | N/A | Staff | 4 |
| Volunteer | 23 | Volunteer | 28 | Volunteer | 35 |
| No-Shows | -35 | HBCU | 2 | Press | 2 |
| | | No-Shows | -18 | VIP | 5 |
| | | | | No-Shows | ?? |
| Total Attendance | 679 | Total Attendance | 603 | Total Attendance | 793 |

### Meeting Critique

This year's responses highlighted several areas for improvement. Though the meeting program was generally praised for distributing similar topics and providing a diversity of themes overall, some attendees noted that, at times, we double-booked sessions with the same topic or contained too many concurrent sessions. Attendees remarked that these arrangements led to a diminution of the audience in certain sessions. Respondents also mentioned the inconvenience of slow elevators in the Richmond Tower; the lack of coat room(s), signage, and adequate information for session chairs (especially regarding the technology available in breakout rooms); and confusion over the opening and poster receptions. Finally, many had very strong opinions about coffee: there was

## HSS News, cont.

too little, too infrequently! In all seriousness, though, we read these criticisms and suggestions actively, and we are already incorporating changes based on them into our planning for the meeting in 2018 and thereafter.

### Meeting Accessibility

Accessibility is another area in which we hope to improve the meeting. We are again indebted

Figure 1. Meeting Demographics

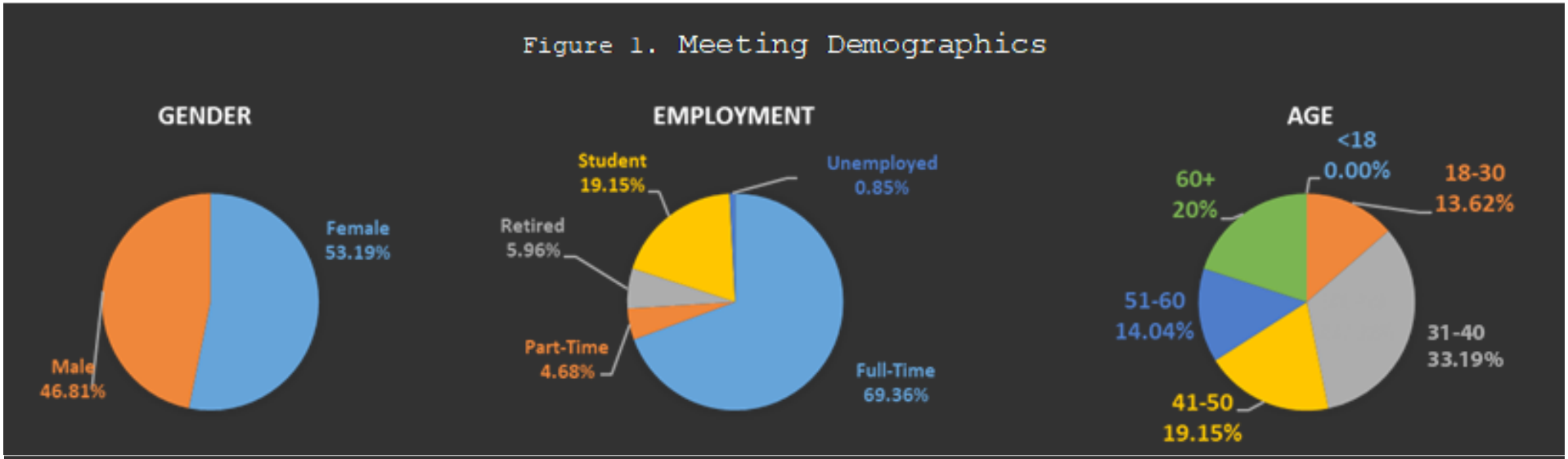
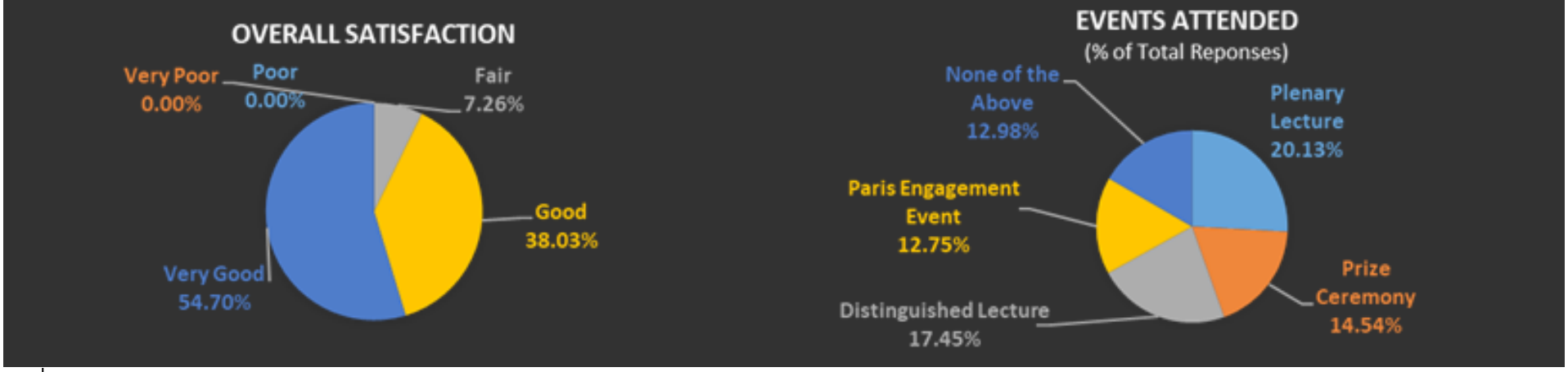



Figure 2. Meeting Satisfaction & Attendance



# HSS News, cont.

to Kate Jirik for providing an accessibility report concerning the accommodations provided (or not provided) by the Sheraton Centre Hotel, the city of Toronto, and the Society. In her estimation, the hotel was hit and miss; for example, while the accessible room offered ample space to move around, bars for hanging clothes could not be reached from a wheelchair. She found Toronto to be a "very inaccessible city." Lack of elevators and other accessible pathways, especially for public transit, made navigating the city onerous and expensive. On a whole, Jirik noted, the Society could provide more and better information to improve meeting accessibility. This could be facilitated, she recommended, by reaching out to those who use wheelchairs in future host cities, as well as to local Disability Centers. In addition to Jirik's report, we also received several suggestions from survey respondents about limiting flash photography because of light sensitivity, better labeling of food at receptions, and more accommodations for food allergies.

## Meeting Technologies

Though our Society's bailiwick may be the study of the past, we are not opposed to embracing the future. We employ several digital and technological resources to organize and facilitate the annual meeting and to communicate with attendees. Part of our post-meeting survey sought information about which resources attendees used and their satisfaction with them. The survey revealed that attendees used the PDF of the printed program more than any other resource, followed closely by the meeting Wi-Fi. While most respondents were very satisfied with the digital and technological offerings, several people expressed concerns that the PDF of the printed program was not available soon enough and that the meeting app (Guidebook) initially contained errors in the schedule. We have already taken steps to address these concerns by reviewing and simplifying internal workflows, the results of which will be apparent to attendees at the 2018 meeting in Seattle.

## Meeting Sustainability

The benefits provided by these digital and technological resources also extend to the environment. Digital programs and the continuation of our paperless discount reduced the environmental cost of printing and shipping paper programs. By improving our digital offerings and maintaining a paperless financial incentive, we hope to provide further inducements to forgo the paper program altogether. We also continued our policy of having the hotel refrain from distributing bottled water, which significantly reduces plastic consumption. This year, we are happy to report a new initiative: biodegradable name tag holders. Ideally, attendees will reuse their name tag holders year after year. Sometimes, however, that is not possible, which is why we are happy to report that this year's name tag holders are fully biodegradable. They can even be safely discarded in a local compost bin. The HSS has a responsibility, in the words of our distinguished lecturer, Sverker Sörlin, to "do more," because a large academic conference, by nature, is environmentally resource intense. We thus remain committed to making the meeting more sustainable wherever possible, and we welcome any suggestions toward this end.

## Meeting Purpose

The HSS meeting also requires resources of another kind: that of the scholars who produce the research and writing at the heart of each day's sessions. It is likely no surprise, then, that when asked why attendees go to HSS meetings, they responded, "To hear and share history of science scholarship!" Yet, this was not the most frequent reponse. While attendees mentioned other motivations like the book exhibit, host city, prize ceremony, and Council responsibilities, the most frequent reason given for attendance was to network with colleagues. At HSS 2018 in Seattle, we intend to encourage the growth of our amiable community by offering attendees more opportunities for networking with fellow historians of science. Our new abstract management and meeting registration system allows attendees to connect, share which sessions they are attending, and much more.

# News from the Profession

## Recently Released Darwin Documents

To celebrate Charles Darwin's 209th birthday, the Darwin Correspondence Project, Cambridge Digital Library, and English Heritage Trust, have released online for the first time, two albums of portrait photographs presented to Darwin in 1877. They were sent by his admirers in Germany and Austria, and in the Netherlands. Also online for the first time are the texts of a series of poems written in Darwin's honor by Friedrich Adler, a young lawyer from Prague. **See the albums and poems here.** The albums provide a snapshot of networks of supporters of Darwin on the Continent and will also be a useful resource for people studying Dutch, German, and Austrian social history. Very little is known about many of the people featured in these albums. If you can help to identify any of them, please get in touch by contacting the Darwin Correspondence Project.

Dr Francis Neary
Editor, Darwin Correspondence Project
University Library, West Road
Cambridge, CB3 9DR, UK
Email: **fjn26@cam.ac.uk**
Website: **www.darwinproject.ac.uk**

## Call for Submissions of Essays on Goethe in the History of Science

The Goethe Society of North America invites the submission of essays on Goethe's contribution to the history of science and on Goethe in the history of science.

The Richard Sussman Prize is awarded annually for the best essay published in 2017 in an academic journal on Goethe's contributions to the history of science and on Goethe in the history of science. The prize carries a $500 award.

Besides his literary accomplishments, which inaugurated a new era in modern German culture, scientific studies also played a significant role in the life of Johann Wolfgang von Goethe (1749-1832). Goethe's research coincided with the emergence of modern scientific disciplines and their institutional establishment within the university system, thereby supplanting earlier scientific practices and methods. As rector of the scientific institutes at the University of Jena, Goethe stood in close contact and corresponded with scientists in Germany and beyond.

The completion of the Leopoldina edition of his scientific writings allows the opportunity for a new assessment of Goethe within the context of science as it was emerging during his lifetime and within the history of science in general. This award seeks to foster scholarship in this area.

Please submit a copy of the essay (electronic version preferred) by **May 1, 2018** to the Society's Vice-President, Catriona MacLeod: Department of Germanic Languages & Literatures, University of Pennsylvania, 745 Williams Hall, 255 South 36th Street, Philadelphia, PA 19104-6305 (**cmacleod@sas.upenn.edu**).

The following articles are eligible:

i. articles written by a North American scholar (defined by institutional affiliation at the time of publication); or
ii. articles written by a current member of the GSNA; or
iii. articles published in the *Goethe Yearbook*.

NB: Articles by current GSNA board members are not eligible. GSNA members are encouraged to submit their own articles for consideration.

## Latest Dissertations

The latest batch of recent doctoral dissertations harvested from the issues 78-03 A and B and 78-02 A and B of Dissertation Abstracts that pertain to the broad scope of history of science, medicine and health care **are now available at this URL**. ProQuest has altered how they release their individual issues. No longer do they correlate

to one month, so the dating is more random. Thus titles will range from 2017—yes they have some 2017 dates—back into the early 1900s. You may find duplicates in this list, not only for this month but from past months. ProQuest has been adding over 25% duplicate titles to its list of dissertations.

## Frederick Burkhardt Residential Fellowships for Recently Tenured Scholars

The American Council of Learned Societies has announced the 2018 Frederick Burkhardt Residential Fellows. The Burkhardt Fellowship program, which supports recently tenured faculty as they pursue ambitious scholarship at a consequential stage of their careers, is made possible by a grant from The Andrew W. Mellon Foundation.

Burkhardt Fellowships carry a $95,000 stipend and a $7,500 research budget, and allow awardees to take up year-long residencies at institutions whose resources and scholarly communities are ideally suited to facilitate the proposed research project. One set of awards, which is open to recently tenured faculty at all US-based colleges and universities, supports residencies at 13 national and international research centers that partner with ACLS for this program. Another set of awards, reserved for faculty from liberal arts colleges, enables fellows to carry out their residencies at any research university-based humanities center or academic department in the United States. The fellowships are designed to accommodate long-term, multi-year research projects and thus may take place in any of the three academic years following the fellow's selection.

"A central tenet of the program is that the residential fellowship experience fosters multidisciplinary conversations and encourages connections among faculty from different backgrounds and different types of institutions," said Matthew Goldfeder, ACLS's director of fellowship programs. "This experience enriches fellows' individual projects and fosters long-lasting scholarly networks, preparing the fellows for careers of far-reaching research and leadership in the humanities."

Projects that may be of interest to HSS members are listed below. **Further information on this year's awardees is available here.**

- **Katherine Epstein** (Associate Professor of History, Rutgers University-Camden)
  *State Secrets: Computers, Defense Contracting, and the Origins of the National-Security State*
  Institute for Advanced Study, School of Historical Studies in 2018-2019

- **Paul Fyfe** (Associate Professor of English, North Carolina State University)
  *The Age of Transmission: From Victorian Media Cultures to the Digital Humanities*
  National Humanities Center in 2018-2019

- **Mitra Sharafi** (Associate Professor of Law, University of Wisconsin-Madison)
  *Fear of the False: Forensic Science in Colonial India*
  National Humanities Center in 2020-2021

The fellowships are named for the late Frederick Burkhardt, president emeritus of ACLS, whose decades of work on *The Correspondence of Charles Darwin* constitute a signal example of dedication to a demanding and ambitious scholarly enterprise.

Contact: Matthew Goldfeder, **fellowships@acls.org**

The American Council of Learned Societies, of which HSS is a member, is a private, nonprofit federation of 75 national scholarly organizations. It is the preeminent representative of American scholarship in the humanities and related social sciences. Advancing scholarship by awarding fellowships and strengthening relations among learned societies is central to ACLS's work. This year, ACLS will award more than $20 million to over 350 scholars across a variety of humanistic disciplines.

## ISH Off-Year Workshop at the MBL in Woods Hole

The Marine Biological Laboratory (MBL) in Woods Hole, Massachusetts will host an International Society for the History, Philosophy, and Social Studies of Biology (ISHPSSB) Off-Year workshop, on the theme of "Regeneration Across Complex Living Systems: From Regenerating Microbiomes to Ecosystems Resiliency," from October 21-24, 2018. The workshop will include around twenty speakers in four sessions, with extended discussions of the papers following each session. Please save the date and consider submitting an abstract. The coordinators will be Kate MacCord (MBL) and Kathryn Maxson Jones (Princeton, MBL). A Call for Papers will be circulated in early May, but in the meantime please contact Kate (**kmaccord@mbl.edu**) with questions.