Communiqué

SOCIÉTÉ CANADIENNE D'HISTOIRE ET DE PHILOSOPHIE DES SCIENCES

CANADIAN SOCIETY FOR THE HISTORY AND PHILOSOPHY OF SCIENCE

Nº 99 Winter / Hiver 2019

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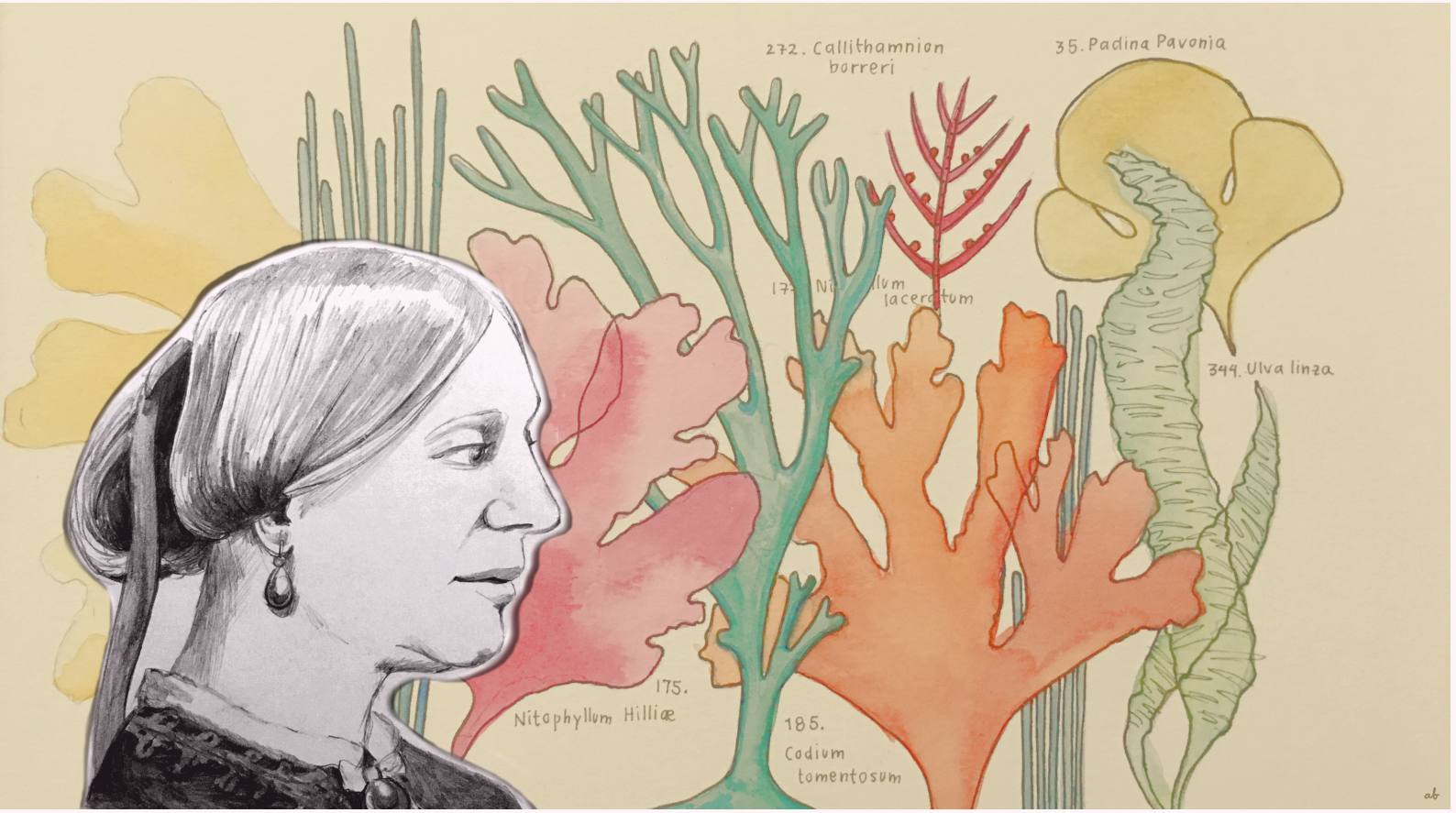
№ 99 Winter/ Hiver 2019

www.cshps.ca / www.schps.ca



Cover Image: *Margaret Gatty* by Alona Bach

Alona Bach holds a B.A. in History of Science and Dramatic Arts from Harvard, and a MPhil in History and Philosophy of Science from Cambridge. She is currently a Curatorial Fellow at Dumbarton Oaks and company member of Night Train Theatre Company.

COMMUNIQUÉ EDITORS

Vincent Gullin
Université du Québec à Montréal
guillin.vincent_philippe@uqam.ca

Jaipreet Virdi
University of Delaware
jvirdi@udel.edu

Issue Contents

Follow on Social Media

CSHPS News
Des nouvelles de la SCHPS

After 3 years of running CSHPS' social channels, Ellie Louson is stepping down to focus on her work at Michigan State. Our new social media coordinator, Anthony Nairn, is already making a splash with the CSHPS twitter feed @CSHPSnews.

Anthony is a graduate student at the University of Toronto, with not-for-profit and military experience. His research interest is why science in popular culture uses sensory affect, and religious-like narration and symbolism. He has been the social media coordinator for the Canadian Club of Toronto and the Ottawa Centre EcoDistrict. He encourages anyone with something to share to email him at anthony.nairn@mail.utoronto.ca.

All relevant announcements sent to the CSHPS listserv will continue to be circulated on Twitter.

EDITORS' MESSAGE

Happy New Year!

By the time you're reading this, it's become obvious that *Communiqué* has undergone a major re-design. With the decision a few years ago to move the newsletter to a completely digital platform, coupled by the use of an open-access publishing software, we were no longer restricted to publishing costs. We originally planned for the new design to be revealed for the 100th issue, but because the Winter issue is usually when we list member updates, we thought there was no better time!

As you'll see, there are new sections for the newsletter. Announcements are spread throughout the pages in pink boxes, including a notice about a new graduate essay prize from the newly-formed HSS Forum for the History of Health, Medicine, and Life Sciences. The 2019 CSHPS meeting will be held at Congress in Vancouver at the University of British Columbia; details about the call for papers (now with an extended deadline) is on page 3. We've launched three new sections. The first, *In Conversation*, interviews with scholars pushing boundaries of HPS scholarship; in this issue, Geoff Bil interviews Kim TallBear. The second, Research Projects showcases digital humanities initatives; for this issue we're featuring the DRAW project from McGill University. The third section, Innovative Pedagogy highlights classroom activites that encourage students to think how to apply HPS scholarship. Also in this issue, Jonathan Turner has revived his Career Corner section, using datasets to examine trends in graduate career outcomes. We also have plenty of member updates & book announcements for you! Thank you all for sending in your updates and keeping our CSHPS community vibrant. We'll like to give special thanks to Alona Bach for illustrating the stunning cover for this issue. Check out her notebook sketches on pages 12 & 22! And finally -- turn to page 32 for a special announcement!

Jai Virdi & Vincent Gullin

2019 CSHPS Conference/Congrès 2019 de la SCHPS

Vancouver, B.C.
June 1–3 / 1-3 juin, 2019

The Canadian Society for the History and Philosophy of Science

Congress of the Humanities and Social Sciences 2019

The Program Committee invites scholars working on the history and philosophy of science to submit abstracts for individual papers or proposals for sessions. We particularly encourage scholars to engage withthe theme for Congress 2019–"Circles of Conversation". Unrelated topics and themes are also welcome.

Extended submission deadline: January 28th, 2019

Submissions:
https://easychair.org/conferences/?conf=cshpsschps2019

Information about Congress registration and accommodation will be available at the CFHSS congress website: http://congress2019.ca

Email contact: program.cshps@gmail.com
Web: http://www.yorku.ca/cshps1/meeting.htm

Program Committee/Comité de programme:
Paul Bartha (UBC), Julien Prud'homme (UQTR), Rebecca Woods (Toronto), Audrey Yap (Victoria) & Alison Wylie (UBC), local arrangements/organisation locale

La Société canadienne d'histoire et de philosophie des sciences

Congrès des sciences humaines 2019

Le comité de programme invite les historiens et philosophes des sciences à soumettre un résumé pour une communication individuelle ou une proposition de séance pour le congrès. Les propositions de séances seront particulièrement bienvenues. Nous sommes notamment à la recherche de contributions sur le thème du Congrès des sciences humaines 2019, «Cercles de Conversation». Les contributions qui ne sont pas liées à ce thème seront également considérées.

Date limite de soumission: 28 janvier 2019

Les soumissions:
https://easychair.org/conferences/?conf=cshpsschps2019

Les informations concernant l'inscription et les possibilités d'hébergement pour le congrès se trouveront sur le site Internet de la FCSH: http://congress2019.ca

congress 2019
OF THE HUMANITIES AND SOCIAL SCIENCES

Helen Longino
2019 International Keynote Speaker

The International Keynote Speaker for 2019 is Helen Longino, Stanford University.

Helen Longino, de l'université de Stanford, sera la conférencière invitée pour l'édition 2019.

Helen Longino received her BA from Barnard College in 1966, her MA in Philosophy from Sussex University in 1967 and her PhD from the Johns Hopkins University in 1973. Her teaching and research interests are in philosophy of science, social epistemology, and feminist philosophy. In addition to many articles, Longino is the author of *Science As Social Knowledge* (Princeton University Press, 1990), *The Fate of Knowledge* (Princeton University Press, 2001) and *Studying Human Behavior,* a study of the relationship between logical, epistemological, and social aspects of behavioral research (University of Chicago Press, 2013). She is C. I. Lewis Professor in Philosophy at Stanford University and recently completed her term as President of the Philosophy of Science Association.

Ted Porter
2019 Stillman Drake Lecture

The 2019 Stillman Drake Lecturer is Ted Porter, UCLA

Ted Porter, UCLA, prononcera la Conférence Stillman Drake 2019.

Ted Porter recieved an A.B in History from Stanford University in 1976 and received his PhD from Princeton University in 1981. Since 2013 he is the Distinguished Professor of History at the Department of History in University of California, Los Angeles, specializing in the history of science and human sciences. Much of his research has concerned statistics, quantification, measurement, and numbers, emphasizing their public and political roles as well as scientific ones. His books include *The Rise of Statistical Thinking* (1986), *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life* (1995), and *Karl Pearson: The Scientific Life in a Statistical Age* (2004). His most recent book, *Genetics in the Madhouse: The Unknown History of Human Heredity* (2018), recovers a long-forgotten form of hereditary investigation that took shape in the 1820s.

IN CONVERSATION

Dr. Kim TallBear, Associate Professor in the Faculty of Native Studies at the University of Alberta, an enrolled member of the Sisseton-Wahpeton Oyate, and descended from the Cheyenne and Arapaho Tribes of Oklahoma, will be well known to many Communiqué *readers – if not through her captivating talks at CSHPS and HSS meetings this past year, then surely via her recent criticism of Massachusetts senator Elizabeth Warren's use of a DNA test to "prove" her Indigenous ancestry, or from her fascinating book,* Native American DNA: Tribal Belonging and the False Promise of Genetic Science *(Minneapolis: University of Minnesota).*

Geoff Bil sat down for a Skype interview with Professor TallBear, who reflected on the relationship between Indigenous studies, STS and science, on relationality, queer and two-spirit theory, on her forthcoming book, and sundry topics in-between.

GB: Your work lies at the intersection of indigenous studies, anthropology, STS and HPS to name a few. I wonder if you could speak about how you envision your own scholarly contribution in relation to these fields?

KT: My primary goal is to build indigenous studies as a field that's not limited to the humanities and social sciences, which is where I think it largely is now. STS is the second field that I spend any time on, but I don't think a lot about building STS. I also interact with anthropologists, I read their literature and use anthropological methods, but from my perspective, anthropology doesn't need me so much, and I'm not much interested in indigenizing anthropology or any other discipline. I'm more interested in extracting resources and methods where I can, and using them to build indigenous studies as part of the broader project of supporting indigenous self-determination through knowledge production. I also need history of science to do what I do, but I know I'm not a historian: I don't do that kind of work, though I certainly find it very interesting and helpful. In attending disciplinary meetings, I find I get really basic questions because people aren't in touch with the pulse of indigenous intellectual conversations. There are hardly any indigenous people in a field like history of science, compared with a field like Western history or American or Canadian history. There's also not a lot of indigenous people doing science unless it's med school or something very applied like environmental science.

GB: This kind of gets to the role of disciplinarity in organizing knowledge. This theme comes across a little bit in *Native American DNA*, but it featured quite prominently in your HSS keynote. Is there something inherently colonizing about segregating knowledge rigidly into disciplines the way we often do?

KT: From my perspective, it's hard to have silos around things and not have people become chauvinistic and hierarchical. This is probably why I gravitated toward the history of consciousness, because we have a problem-centered approach there and that's much like the work I've done in indigenous communities. You have a problem that you want to address and you figure out the multiple approaches you need to try and get at that problem. Of course it'll always be a partial solution, but you figure out what works best given your research restrictions and cultural investments. So it doesn't make sense to me to prioritize a particular way of knowing or observing a particular kind of data. Having been trained as a tribal planner before becoming an academic, that's the way you operate in a community. I've never done a disciplinary degree. I think if people get overly invested in their disciplinary identity, they become overly defensive of their mode of investigating.

GB: HPS and STS often tout their interdisciplinarity. Are there tools within these fields that would make them particularly receptive to the kind of work that you do?

KT: Science studies scholars are humanists and social scientists, although they certainly value and are interested in the hard sciences. They tend to be people who've already bought into the idea that there are multiple ways of approaching and understanding the universe, which seems pretty conducive to what I think indigenous studies should do.

One reason why indigenous students don't do a lot of science is that we have been tracked in our education toward humanities, arts and culture. We have been portrayed as being anti-science, when what we're really doing is being critical of the politics of science. But since so many scientists don't understand that their work is inherently political, they discount our critiques by putting us in the culture camp instead of really wrestling with our critiques of power and privilege. So a lot of indigenous scholars have the perception that the humanities and social sciences are more on our side than the hard sciences, and that's just not true. All of those disciplines have come out of a colonial engine. They all also operate according to very similar narratives of enlightenment, the idea that we're vanishing, or that there's a nature-culture binary – they all tell the same stories no matter what

approaches they're using. What that says to me is that all of those approaches can be helpful to us if we consider them in a way that's informed by our particular priorities and problems. So a lot of my time is spent reminding indigenous scholars that the sciences are not any more their enemy than any of the other disciplines. And they in fact could be quite useful for them.

GB: I've also had my own experience speaking to people in the natural sciences who are far less narrowly focused than my training in the history of science would lead me to expect.

"I think we're at an interesting moment where we can have great conversations between indigenous knowledge holders and indigenous scholars and people in the natural sciences because these relational frameworks are being taken up."

KT: Certainly, in earlier periods science wasn't quite so specialized, and I feel now that a lot of the environmental scientists I've worked with are thinking in a much more relational kind of way. I think we're at an interesting moment where we can have great conversations between indigenous knowledge holders and indigenous scholars and people in the natural sciences because these relational frameworks are being taken up. I think that's great.

GB: Relationality is something that comes up quite a bit in your writing and speaking. You also talk about queer and two-spirit theoretical approaches. I wonder if you could elaborate on that.

KT: There seems to be a lot of conversation between young indigenous queer and two-spirit people and non-indigenous queer folks in Canada through their activism and organizing. They tend to agree on the need to get away from gender binaries and other forms of binary thinking. I think a lot of the activism around sexuality is deeply theoretical work, and radical theoretical work. And those kinds of ideas articulate with indigenous environmental activists, many of whom are also women and queer folks in Canada. A lot of queer women and two-spirit people were involved in spearheading Idle-No-More. That was also true at Standing Rock, though I don't think the mainstream media covered that much at all. I'm always disappointed in mainstream media coverage: It's just romanticized bullshit. But from indigenous media, behind the scenes, knowing a lot of people that were activists on the ground in both those places, and seeing what they post to Facebook, what they tweet about and what their conversations are, I can say that queer and two-spirit theory informs our activism and work on the ground. So it makes sense that it should inform our scholarship. Again, a lot of that revolves around dismantling hierarchy and getting away from binaries and thinking more about fluidity and sets of relations. It's very conducive to a relational framework, to being in good relation, to making kin. Queer folks do that really well; they've had to. So it's very natural that indigenous and queer theory should be at the same conversation table. Also crip theory and feminist theory. I draw on all of these things because we're making very similar kinds of critiques about hierarchies in society and the academy. We're all made to be deviant bodies in relation to a straight, white, able-bodied male norm.

GB: Which activists would you say have inspired your own scholarship and activism?

KT: I don't think of myself as an activist, although I realize that more mainstream academics might, because I'm explicitly political in my approaches. Activists wouldn't consider me an activist, but I certainly do look at them as theorists. A lot of the women that were part of the NoDAPL and Idle-No-More movements – I'd rather not name specific names – do a lot of

elder and education work in Indigenous communities. But I am especially impressed with Indigenous women in Canada and the US who provide mentoring and group support for indigenous women who have been involved in the sex trade, which in some cases is facilitated by fossil fuel and fracking industry man camps. Indigenous people in those areas are really concerned about the effects on their communities. From what I have learned from hanging out with indigenous sexual rights activists in Canada, including queer and two-spirit people, they're more willing than indigenous communities in the US to support sex worker rights. It's more sex positive. There's a nuanced conversation happening there about sexuality, about the distinction between consensual sex work and sex trafficking, and the people that are having those conversations are really, really smart and ethical. A lot of those conversations don't necessarily happen publicly because indigenous women are so hypersexualized like black women are in the national racist imagination. But there are a lot of indigenous women and queer folks behind the scenes who are trying to think through this stuff and support one another. Another interesting thing I've seen some of the women in the Dakotas do is try to get away from the implicit sexual purity and gender binary language that happens around ceremony. You see this in Canada too. A lot of queer folks are saying, look, we can't have all this gender binarism in our ceremonies. We can't have men running everything and telling us that we have to wear this or act this way because it's going to exclude a lot of people. A lot of this policing of women's bodies and women's sexuality is there because of the residential schools and forced conversion to Christianity.

The people working with Idle-No-More and NoDAPL are also taking relational approaches in thinking about relations between and among women and indigenous people. They're thinking about colonizer-colonized relations. They're thinking about human-environment relations. They're trying to effect good relations across human-nonhuman and gender boundaries and make things more fluid and relational. They're not using the same kind of academic language that I am, but they're using indigenous language concepts which inhere these very complex ideas that we don't necessarily have access to in English. I'm in contact with them largely through my social media, which is where I gauge what they're doing and learn from them. I would never study them as an anthropological project. I'm another Native woman who gives money in support, and who can write letters and nominate Native students and hook them up with other people. I try to be a good actor in my community, which I talk about in my "Standing With and Speaking as Faith" article. So that's kind of how they influence me and I how I learn from them.

"within the academy, I think we've got the same struggles that we've always had, but at the same time, we're gaining a little more expertise in navigating the academy."

GB: What would you say are works in history of science and critical theory that have most influenced your approach?

KT: Vine Deloria Jr.'s work was incredibly important. That's where I first learned, before I could read, that the academy was extractive, that we were their objects to be gazed upon, poked, prodded and measured. I knew that at the age of four because Deloria's work was being translated into activists' language and the music of Native singers and songwriters and artists back then. I was born in 1968. My mom was a student at the time and involved in American

Indian Movement activism. Her articulation of resistance to white supremacy deeply shaped my sense of the world when I was a small child. She was my second formative theorist. And then in school I studied with Jim Clifford and Donna Haraway. They helped me to find new language to describe sentiments I already had. Jim's notion of Indigenous articulation really jived with my sense of how, having been a tribal planner and growing up in tribal communities, we articulate the old and the new to develop approaches to living today. Donna was really good at communicating the idea – this is something I grew up with – that we all tell stories about the world and stories help create the world that we live in, so we might want to give deep consideration to the kinds of stories we tell if we want to live in a different kind of world. Her notion of feminist objectivity was influential too. She introduced me to Sandra Harding, and they continue to be mentors of mine. I had a couple of planning advisors as well at MIT and UMass Boston who were really influential in terms of helping me think about how one works in community in collaborative ways, Mel King and Marie Kennedy respectively. But community planners don't always have the same angst disciplinarians do about giving back and all that. Their research is always for social change. So it was interesting for me to come into the social sciences and humanities and see people struggling with how do I give back? How do I do ethical research? In my undergraduate and graduate planning degrees every research project we had was contracted by a community. We developed the process together, and the research deliverables were deliverables the communities could use. Evelyn Fox Keller was also really helpful to me in my first year of graduate school in terms of historicizing the field of biology. Her work is a bit more straightforward history of science, which is also really useful. Both types of work are useful. They do different things. When anthropologists of science say that we find history of science so useful, I don't mean to say that we couldn't do what we do without you guys like you're the bricks that we step on. Though that might be why historians of science don't read as much anthropology of science. Maybe they don't need it to do what they do, but I think we certainly need history of science to do what we do.

GB: Speaking as a historian, it's always exciting when we discover something in anthropology or another discipline that we can actually use. But in relation to some of these developments both within and outside academia, are there any hopeful signs in STS, HPS or the academy more generally in relation to 20 or 30 years ago?

KT: I think the take-up of relational frameworks in some of the natural sciences is really important. I've also seen a movement in a small section of genome sciences toward more collaborative research. That's the result of a lot of hard work and vociferous patient groups and indigenous critique since the 1990s. It's not only us, although people have said that indigenous people are always the canaries in the coalmine for figuring out how to do more collaborative and ethical work. I especially see that as I've worked with engineers and people in astronomy or physics who are saying really outrageous stuff that geneticists have learned not to say in the last 25 years. Women, I think, would say the same thing. You have a lot more women and feminist involvement in biology than you do in engineering and physics, for example. It's still really tough for women in those fields.

At the Sydney 4S meeting they even spearheaded a whole indigenous STS stream, but then they said that they're looking to North America because they feel like we're infusing indigenous STS with more queer STS. And there was a queer STS group started by graduate students at 4S in Denver. I feel like the queer and indigenous STS stuff will come to the fore, particularly in Canada, Australia, New Zealand, and to a lesser extent the US just because Indigenous erasure is greater there than in say Canada and New Zealand. Indigeneity is also a more contentious word in Europe, because European colonialism after leaving the Americas was heavily focused in Africa and South Asia, where indigeneity is not as straightforward a category. So the infiltration of indigenous thinking and queer theory are things that are really encouraging to me. We're just about to release a vital topics

forum in the *American Anthropologist* this next month – we pitched to the *American Journal of Physical Anthropology* but they didn't take it – called "How Academic Diversity is Transforming Scientific Knowledge and Biological Anthropology." The forum not only situates young scientists in relation to discrimination or marginalization in their field; they're also talking about how being particularly situated has deeply shaped their science in ways they think is making the science better. I think the forum will be assigned across the disciplines because these are really short, accessible essays that show how the science can be changed. Not only can people change their cultural and ethical approach in the field, but the actual knowledge produced can change in ways that are beneficial.

GB: On the other hand, do you see any worrying signs in academia that threaten to scupper some of these advances?

KT: We have a continuation of the perception that indigenous people are trying to contaminate research with politics. But we've been dealing with that our whole lives, right? A lot of the time the hardcore materialist, atheist scientists, who are against all forms of what they would call religion or spirituality, tend to think that they are on opposite sides of the fence from the Christian creationists, and they tend to place indigenous people in the same group. And I'm like, no, you guys are all on that side of the fence together with your colonial universalizing worldview and indigenous people are over here trying to tell you that there are multiple ways to understand the universe. So I do feel sometimes that while critical scientists can really be our allies, uncritical scientists are in the same lot as the Christians who tried to missionize and forcibly convert us to Christianity. Their debates might be heating up, with the rise of the fascist Christian right being anti-science and so on. But they're also simultaneously anti-indigenous. So within the academy, I think we've got the same struggles that we've always had, but at the same time, we're gaining a little more expertise in navigating the academy.

GB: Can you tell us anything about your upcoming book?

KT: The working title is *Disrupting Sex and Nature, Remaking Relations*. It's going to segue from *Native American DNA* by talking about genomic origins versus indigenous relations. Genome scientists say that we have these mythological origin stories, whereas I'm going to talk about the fact that they're actually the ones hanging onto an origin story. I'm also going to talk about what I'm calling molecular death, which is the idea that vanishing indigenous people were brought back from the brink of death through the discovery of Native American DNA in previously non-indigenous bodies using consumer genetic ancestry testing. And I'm going to talk about that as a form of appropriation of our identities and vital sustenance in an ongoing support of the colonial state.

Then I'm going to look at eco-sexuality and indigenous eco-erotics. One of the things I want to do in this book is to completely disaggregate the objects sex and nature, which are cohered in a non-indigenous ontology as objects. If we think about being in relation, sex and nature don't have to be things anymore. They're not things in an indigenous ontology to be managed, conserved, kept pure, whatever you want to do with them. I'm going to use the eco-sexual movement as a case study because I've got good friends in that movement, and while it doesn't appeal to indigenous people, it has been really good for the theoretical work I want to do around sex. Because if I'm like, why is the term eco-sexuality bothering me? It's the sexual part. It's objectifying those relations with non-humans into this thing we call sex, which won't work for indigenous people, but I think it's a movement in the right direction. And then I'll look at the indigenous eco-erotics work that's beginning to happen. My friend Melissa Nelson at San Francisco State is writing on that now. I'm going to probably go after the idea of consent being sufficient. One of my native students said there's no consent in nature, and some of our non-native students said they don't like eco-sexuality because trees don't consent to have sex with humans. But if not consent, then what? My

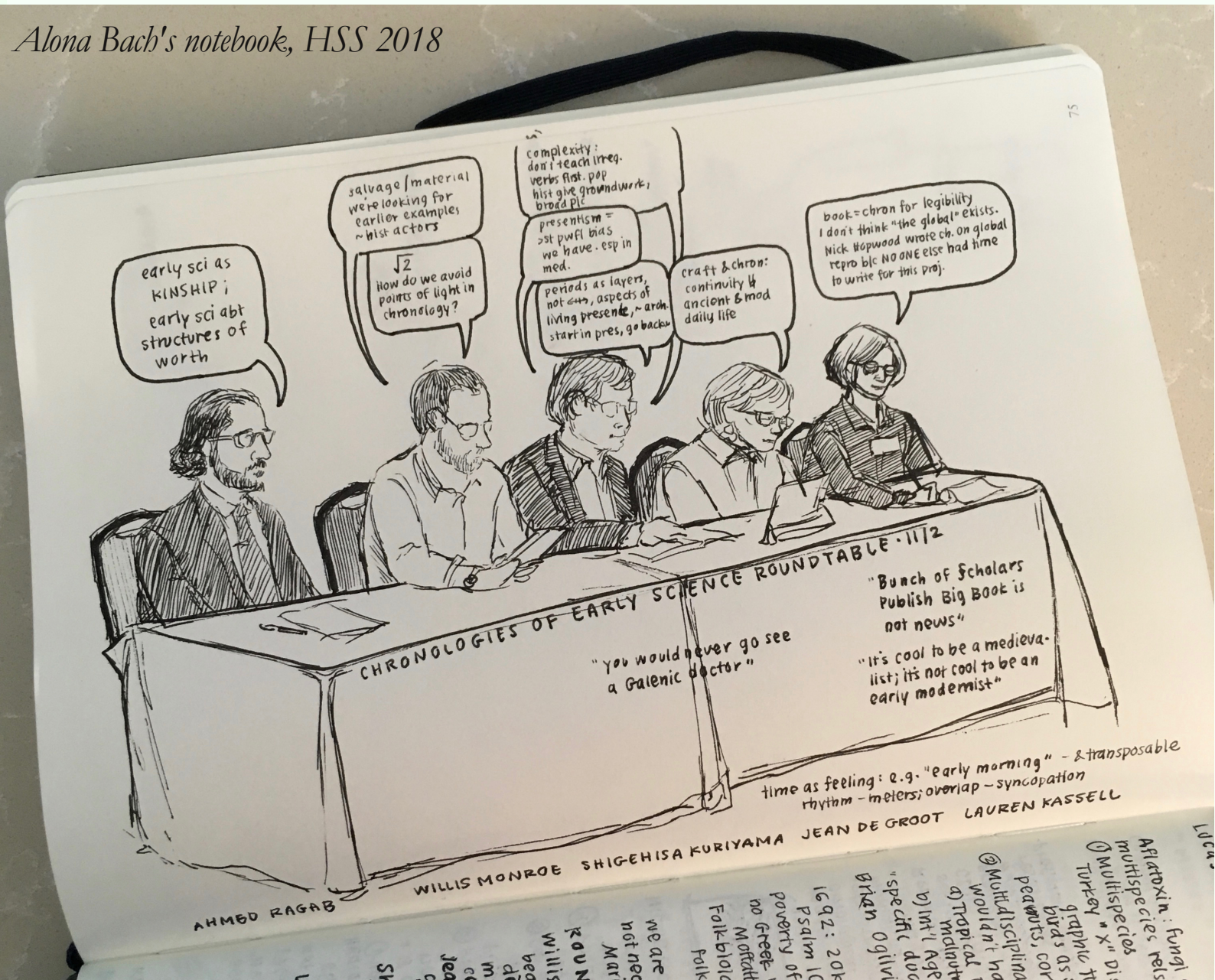
sense is there's a very non-indigenous history to that word and ethic, and I want to think about what other sort of ethical framework we can use to understand our relations with other-than-humans.

I'm going to end with a section on more-than-monogamy and other critical relations. I don't want to use the word non-monogamy anymore. When you look at the language of the more-than-human, I want to bring that into the idea of non-monogamy, and of making love in relation beyond settler, sex and family. I'm also probably going to write a chapter in defense of adultery, redefining fidelity, because I think the core problem is compulsory monogamy and state-sanctioned marriage, and adultery, as you would call it, is just a symptom of that problem. And the last part is going to look at land-body stuff. I'm writing against the idea of mother earth as an example of the idea of the spiritual. Because again, the spiritual is another kind of object that is not a good translation of being in relation. So anyway, the book's going to go after nature, sex and spirituality as objects and disaggregate them all back into relations.

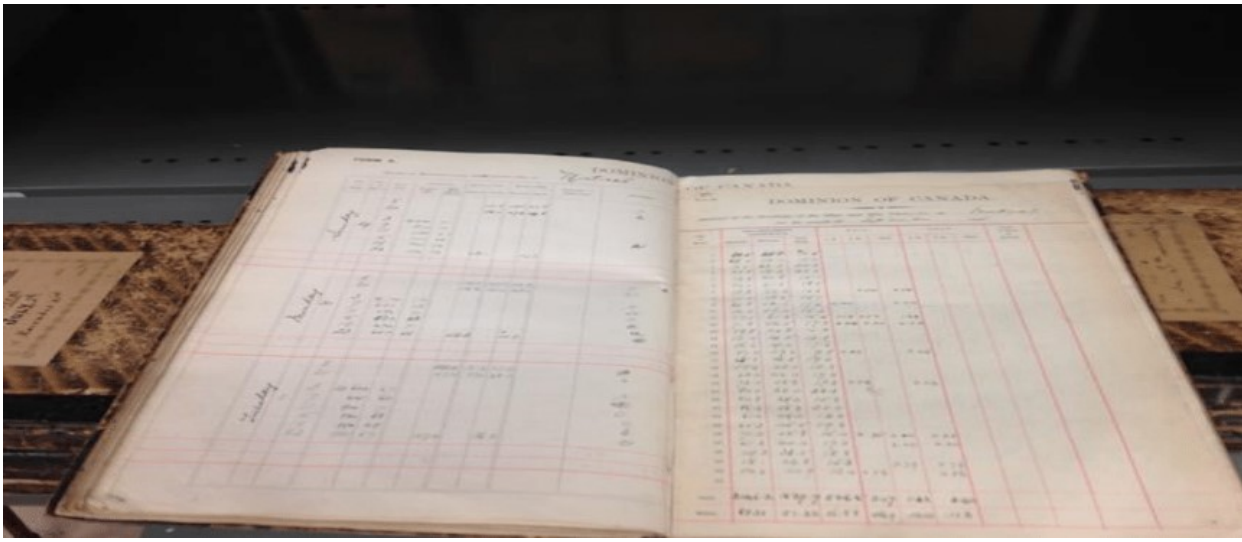
GB: Is there an approximate timeline for publication?

KT: Pieces of it are already written. I want to get through a draft of the book by the end of the summer, but I'm sure it'll still be a couple years.

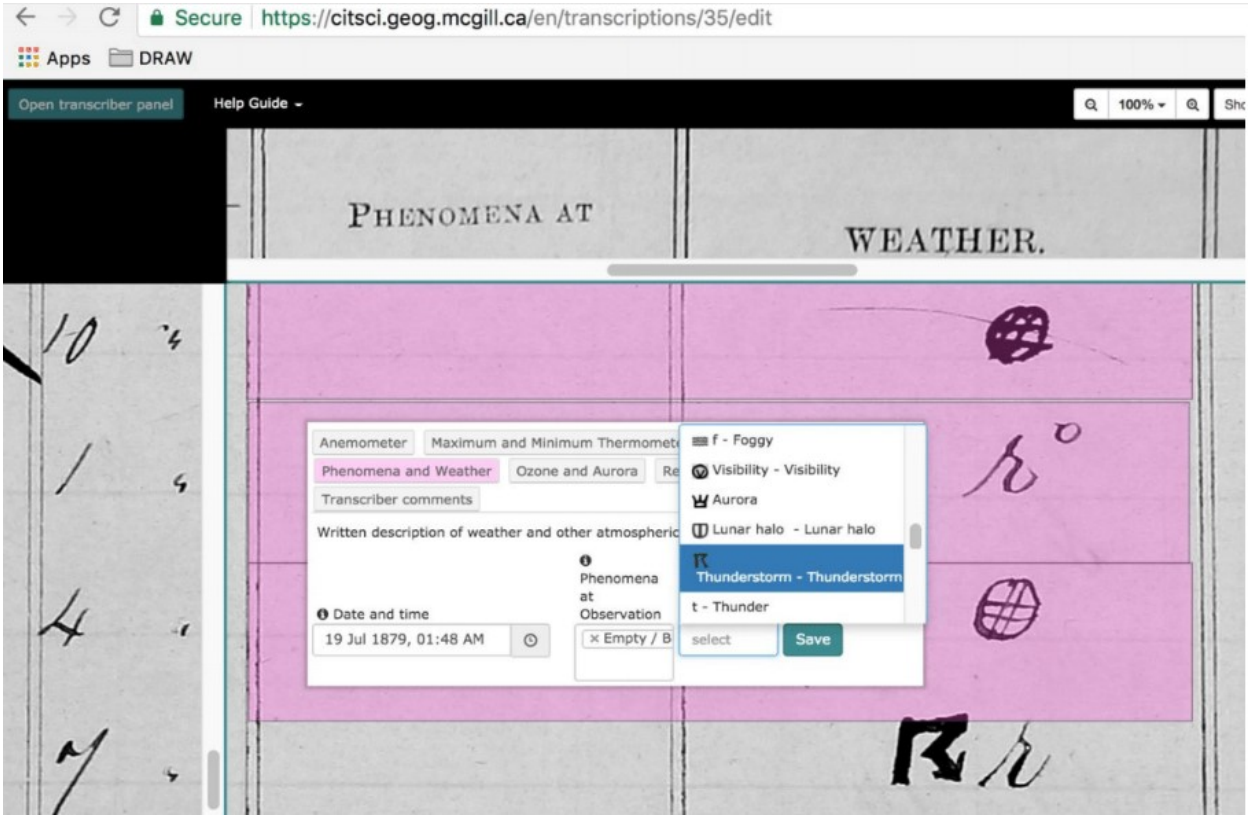
Alona Bach's notebook, HSS 2018



RESEARCH PROJECT



DRAW is an interdisciplinary project involving researchers and students from across McGill in the Faculty of Science, Arts and from the Library and Archives.



The aim of the initiative is to make the meteorological observations of the McGill Observatory, founded in 1863 by Dr. Charles Smallwood, digitally available for scientific analysis by means of a citizen science web platform. At the same time, we wish to preserve the historical context and archival integrity of the collection.

The current team members are:Victoria Slonosky, Renée Sieber, Gordon Burr, Robert Smith, Lori Podolsky(on leave), Frédéric Fabry, Drew Bush, Sara Allan, Rachel Black, Eun Park,and Yves Lapointe.

The McGill Observatory collection covers over a century of observations, recorded as frequently as eight times a day with up to 40 or more individual elements recorded at each observing time. The collection comprises hundreds of register logbooks with tens of thousands of pages, containing millions of observations. The registers were initially microfilmed in the 1970s, and digital images captured from the microfilms. Methods and protocols for cataloguing both the paper and digital image files were devised and implemented, included filename and other metadata standards for ensuring traceability and transparency of the data at all stages.

Given the enormity of the task, and the interest of the researchers in public outreach and citizen science, transcribing the meteorological information by engaging the Montreal public via citizen science was envisioned as a key part of the project from the outset. This influenced several project design decisions. A web app was designed to enable transcription directly from the digital images of the logbooks to a back-end data base linked to the website user interface, avoiding intermediary steps such as spreadsheets.

Students from McGill's Schools of the Environment and Information Studies have been extensively involved in DRAW since its inception in 2015, preparing, scanning and cataloguing image files, and testing the web app to incorporate user feedback. A student project from December 2017 reported 96% accuracy on DRAW's citizen science transcribed data. DRAW was also the basis of part of a course module at Dawson College on the connections between historical climate and social science research in the spring semester of 2018. We are currently working onmaking the course module accessible online and on extending the scope to other courses and to high schools.We are now in the launch phase of DRAW, as we explain the DRAW project and appeal for volunteer transcribers (citizen scientists) through traditional and social media. Further plans include community outreach in museums, community libraries and schools.Plans for future research include analyzing citizen science participation, motivation and accuracy, evaluating the durability and flexibility of the database and app design, considering how it could be applied to other archival datasets to make them more accessible for research and available to the public, testing methods of validating the data, and evaluating historical aspects of climate change in Montreal.

For more information, please contact victoria.slonosky@mail.mcgill.ca or draw.archives@mcgill.ca

The Khan Academy Approach to Teaching the History and Philosophy of Science

Donald R. Forysdyke
Department of Biomedical and Molecular Sciences
Queen's University

I here outline a series of on-line videos that use an approach like that of Salman Khan of the highly successful "Khan Academy" (Thompson, 2011; Parslow, 2012).While sadly lacking Khan's eloquence –but one must start somewhere –in a series of short videos I have followed him with pen-tablet and Camtasia Studio software to explain evolutionary principles and their historical development in everyday terms (Forsdyke, 2012a,b).

The history begins after a first series of twelve videos on evolutionary principles. Rather than a complex pageant of life forms –wiggling nematode worms, gracefully contracting jelly fish, cuddly koalas –key elements common to all these forms are presented abstractly: A evolving to B, or diverging into B and C.

Then enter Darwin, Mendel, and much more (Cock & Forsdyke, 2008; Forsdyke 2001, 2016). The second series (twelve videos) is on natural selection, proceeding from Patrick Matthew in the 1830s to Samuel Butler in the 1870s. The third (twelve videos) is on blending inheritance with input from Francis Galton and Fleeming Jenkin. The fourth, entering the modern era, is on introns and exons. There are currently 54 videos, each around 15 minutes in length, for a total of 14 hours viewing. As back up, there are also some formal conference lectures (Forsdyke, 2012b).

A recurring point is that, to really understand a subject you need to understand its history. But, paradoxically, to understand the history you need to understand the subject. So, ideally, studies of a subject and of its history should go together, hand in hand. To understand the principles of a subject, any subject, it is often best to follow, step-by-step, how those principles first gained recognition and were reconciled with the facts of the subject, to arrive at the view we now have. In this way we can see how, although confronted with the samefacts, different people weigh them differently and arrive at different interpretations, and why one interpretation is now seen as better than another. And that's nice, because history is about people –some good, some not so good –and we all like a bit of gossip! For further background please see the History of Science Society Newsletter (Forsdyke 2014).

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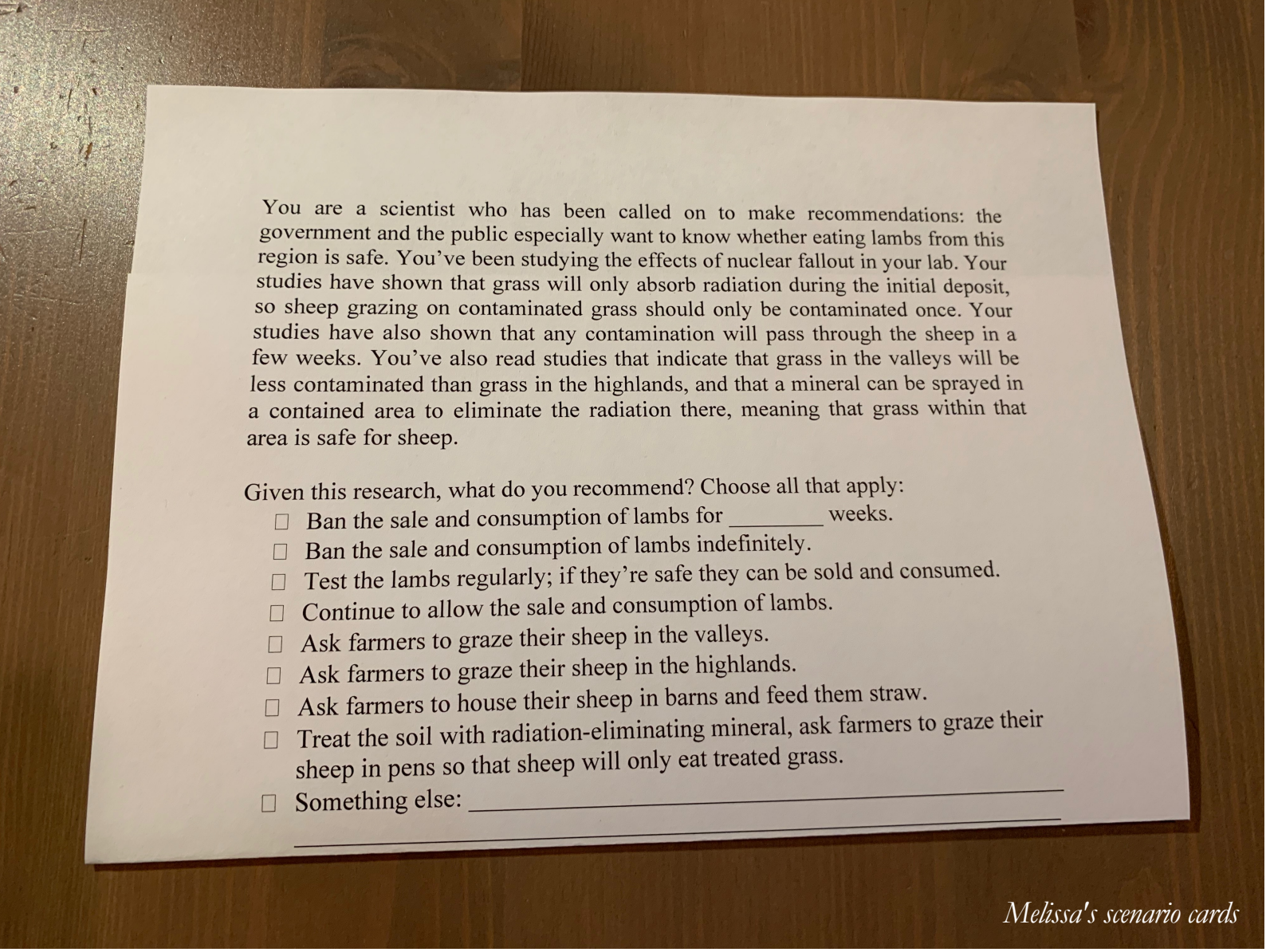


Melissa's scenario cards

"We fire all our scientists"

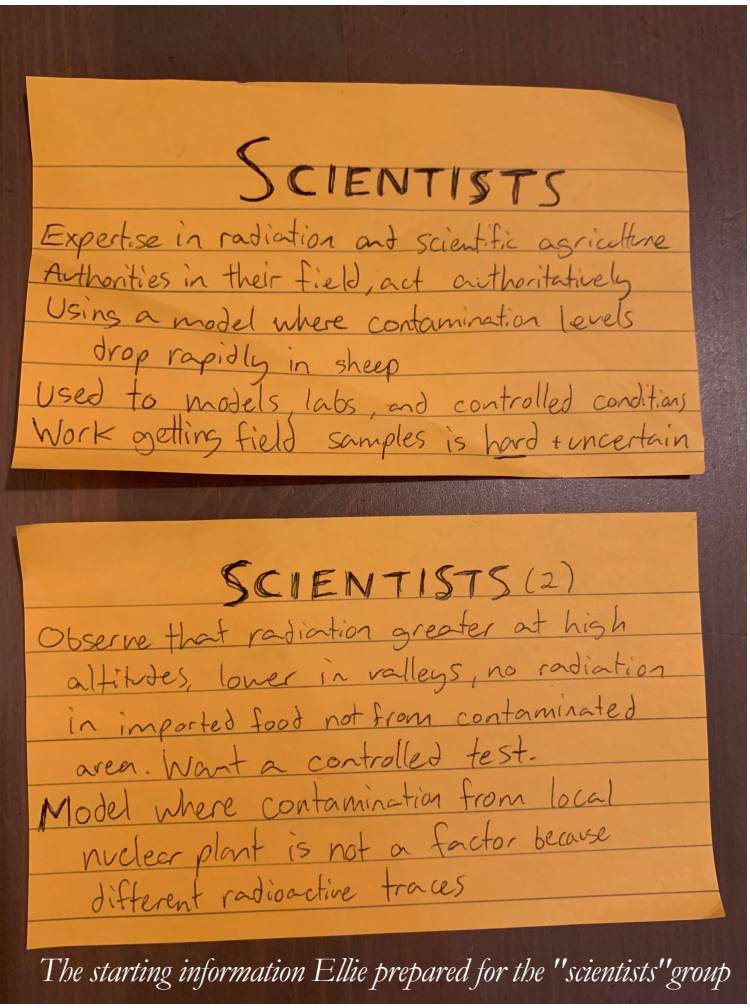
The Sheepfarmer Case as Engaged Learning

Melissa Charenko & Ellie Louson
Micigan State University

This pedagogical activity uses "The science of the lambs: Chernobyl and the Cumbrian sheepfarmers" chapter of Harry Collins and Trevor Pinch's *The Golem at Large* to encourage students to consider whose knowledge counts in scientific decision-making. Collins and Pinch's short, accessible chapter, based on a case investigated by Brian Wynne (1996), describes the consequences of Chernobyl's radioactive fallouton sheep and farmers in Cumbria. Collins and Pinch describe the British government's non-transparent response to the crisis. Like Wynne, they emphasize the farmers' mistrust of the scientists dispatched to study how sheep, soil, and vegetation reacted to the fallout, and how the scientists' lack of appreciation for farmers' local and situated expertise made the crisis worse.

Melissa originally developed this activity for a teaching demonstration during a job interview: she was asked to teach a 45-minute lesson to first-year HPS students on any topic. Students could not be assigned reading before class. Melissa began by telling students that it is 1986 and Chernobyl has just exploded. Five days later, the nuclear cloud has travelled 4,000 kilometers and reached northern Britain where it releases radioactive material over Cumbria's sheep farms. With this informnation, Melissa asked students to work through a series of scenario cards in

small groups. Students began by role-playing scientists who sought to determine whether it was safe to eat lambs contaminated during the initial deposit. The first scenario card listed some

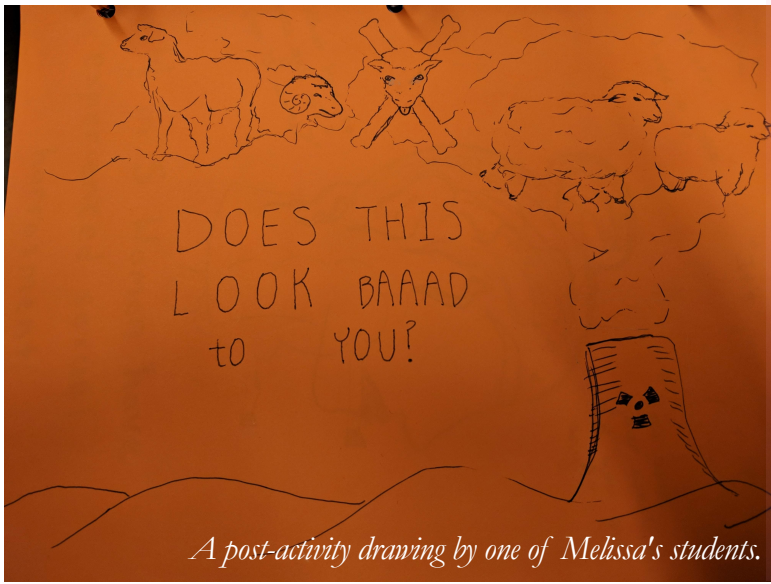


The starting information Ellie prepared for the "scientists" group

of the information that scientists would have known at the time. The card then gave students a series of possible recommendations (e.g. "Ban the sale and consumption of lambs for ____ weeks" or "ask the farmers to graze their sheep in the valleys") to select. The next card asked students to role-play a farmer who has just received the scientists' recommendations. Students were asked to write what the farmer might think of these recommendations. The third card asked students to role-play the scientists again, once they had received more information on conditions in Cumbria, and the fourthasked for a farmer's feedback on the new recommendations. After each group worked through their scenario cards independently, Melissa led a discussion on the types of knowledge each stakeholder had and whether the public should be involved in scientific decision-making. She was offered the job based in part on this activity.

"This could be amazing, or it could be a total disaster" is how Ellie introduced this activity to her first-year HPS students. Originally planning to replicate Melissa's activity, Ellie modified it into a roleplay (similar to Dungeons and Dragons) where the teacher directs the game, describing the passing weeks and the outcomes of the groups' decisions. She divided the class of 24 into five groups: farmers, scientists, government, the local community, and the broader public. Each group began with a note describing their roles and areas of knowledge. Ellie prompted the groups to decide whether to take certain actions, and the crisis progressed based on those actions. For example, when the government decided to ban sheep sales, the farmers were asked how this affected them and how they wanted to respond. To encourage neutrality, the students read the case study *after* the roleplay, and in the following class Ellie led a discussion comparing the in-class groups to the historical actors.

Even though Ellie's stakeholder groups began the activity intending to collaborate to solve the crisis, they soon fell into entrenched positions. The farmers became frustrated that the scientists didn't ask for their advice, and the scientists were frustrated that other groups looked to them for definitive answers. The government, irritated by a series of wrong predictions, exclaimed "that's it, we fire all our scientists." The public decided to stop buying lamb altogether. The locals, who believed that the nearby Sellafield nuclear plant fire 3 decades before contributed to radiation levels, resented that this concern was never taken



A post-activity drawing by one of Melissa's students.

seriously; they were eventually vindicated, to the delight ofthose students. Leaders emerged over the 50-minute activity, and they shaped its direction in ways Ellie did not predict. For example, the farmers were adamant that they were entitled to compensation for the damage to their livelihood and demanded a government subsidy or else they would elect a new government.In terms of learning gains, the activity was success. For the rest of the unit, Ellie's students could identify and analyze stakeholder groups of other controversies both from course readings and in their final projects. It was easier to explain why HPS scholars try to approach controversies with symmetry after students had inhabited roles with opposing perspectives. One student from the "locals" group wrote about social interaction within science foran essay: "we saw how many problems resulted in the non-positive or utter lacking of communication between the scientists and the people of the community. This also formed a lot of distrust between the two groups." Another student, in the "scientists" group, emphasized the importance of local knowledge when writing about expertise: "a scientist who wants to research sea creatures might need help from a fisherman or an expert on where to find lots of sea creatures. This scientist would be an expert of specific species of fish but might not know how to sail a boat or find where specimens would be. This is where the expertise of the fisherman would come in to help." Many students wrote about the roleplay as a highlight of the course in their journals, and one student commented "play the dungeons and dragons game more often" in their course evaluation.

Roleplaying stakeholders can be hugely rewarding in a HPS class. It takes a compelling case study or controversy and some prep time. In the "Dungeons and Dragons"version, most of the effort takes place during the activity, as the teacher needs to respond to groups' real-time actions and decide when to share new information

FHHMLS/CUP Graduate Student Essay Award

The Forum for the History of Health, Medicine and Life Sciences and Cambridge University Press invite submissions for our inaugural Graduate Student Essay Award. The award will be given for the best original, unpublished essay in the history of health, medicine and the life sciences submitted to the competition as judged by the FHHMLS's assessment panel. This award advances the FHHMLS mission of encouraging scholarship that addresses conversations occurring across and between the histories of science, medicine, and technology broadly conceived. The author of the winning essay will receive 5 books of their choosing from the current book list of the Cambridge University Press.

Guidelines: We welcome submission of unpublished manuscripts in English on any aspect of the history of health, medicine and life sciences written by students registered part-time or full-time in a graduate degree or completing their degree in 2019. Submissions should bridge the histories of science, medicine and/or technology.

Submissions should be no more than 10,000 words in length (inclusive of footnotes and all references). Entries should be accompanied by a one-page cover letter detailing how the research fosters new conversations between the histories of medicine, science and/or technology. The deadline for submissions is **30 April 2019**.

Entries should be sent to fhhmls.hss@gmail.com. Please submit cover letters and essays as two separate files. The essay file should only include the title, with all author information removed. The winning submission will be announced at the 2019 HSS meeting in Utrecht. Authors do not need to be members of HSS at the time of submission. We are grateful to Cambridge University Press for their generous sponsorship of this prize.

FHHMLS Steering Committee:
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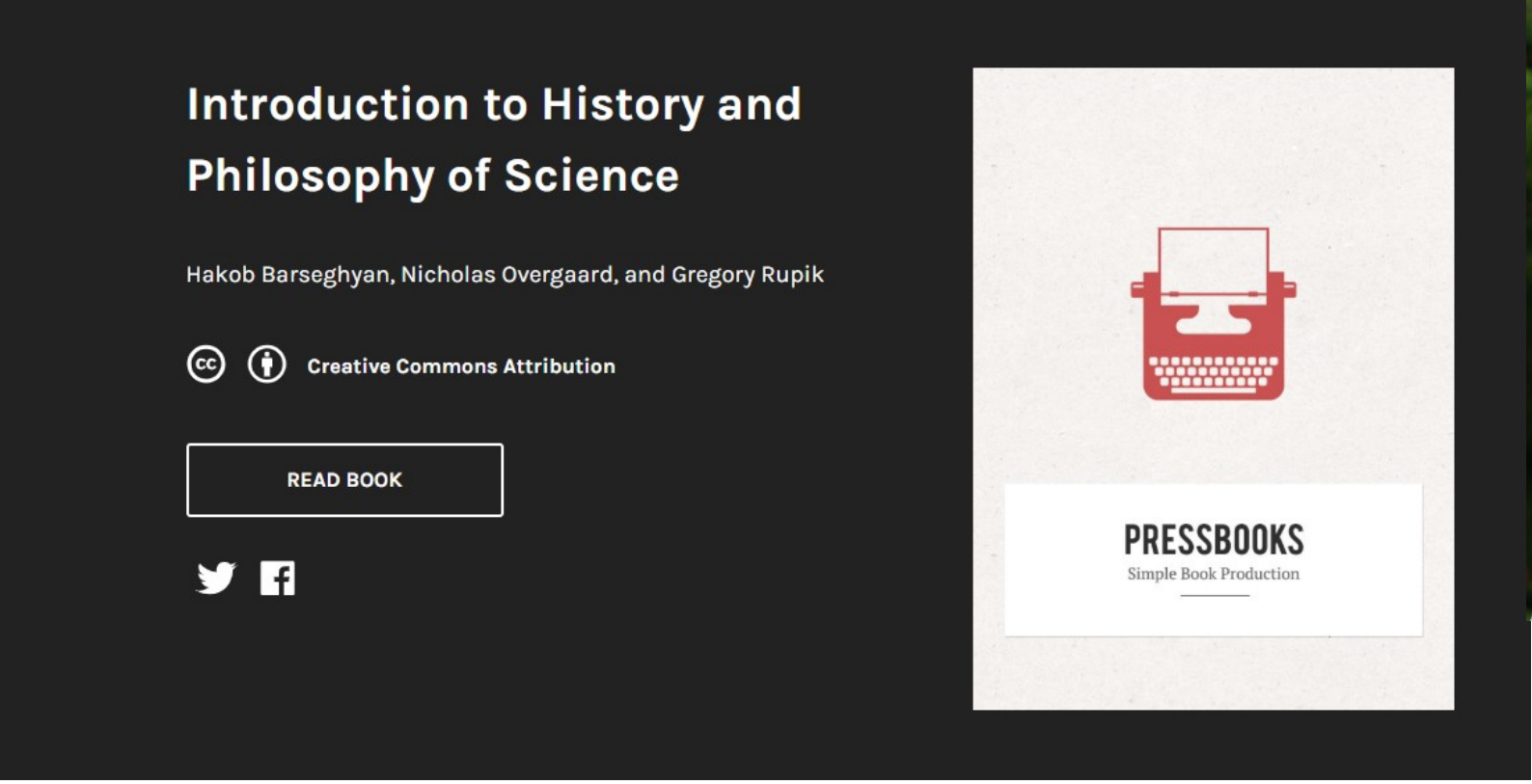


As part of the eCampus Ontario Open Content Project at the University of Toronto, Hakob Barseghyan, Nicholas Overgaard, and Gregory Rupik co-authored an open-access eTextbook entitled *Introduction to History and Philosophy of Science*, published online in the fall of 2018. The text divides its focus evenly between the philosophy and history of science. The first half of the chapters tackle philosophical topics such as the possibility of absolute knowledge in empirical sciences, scientific progress, and pseudoscience. The latter chapters introduce readers to Aristotelian-Medieval, Cartesian, Newtonian, and Contemporary scientific worldviews, with attention to those historical communities' shifting theories and methods.

The textbook was written as a complement to the authors' online undergraduate course, "Introduction to HPS" (HPS100) at UofT's IHPST. HPS100 is the University of Toronto's largest online undergraduate course, attracting over 800 students per semester, and typically offered in both the fall and winter terms. The course utilizes pre-recorded lectures (hosted on Youtube), weekly live, interactive tutorials (using Blackboard Collaborate), collaborative writing assignments (facilitated by peerScholar), and online exams (with the Canvas learning management system).

The authors encourage other educators to incorporate relevant portions of the textbook into their own syllabi and reading lists. We would appreciate hearing about the ways the text is used in other contexts, and also welcome any feedback to incorporate into future editions. Please contact Gregory Rupik (greg.rupik@mail.utoronto.ca) with any questions or comments about the textbook, or about the online course HPS100.

John Wallis at 400

Royal Society Publishing has just published a special issue of *Notes and Records* - John Wallis at 400: Science, mathematics, and religion in seventeenth-century England organized and edited by Adam D Richter and Stephen D Snobelen. This content can be accessed at http://rsnr.royalsocietypublishing.org/content/72/4

CAREER CORNER

Humanities PhDs overwhelmingly want to be professors. The lowest estimate, Jonathan Turner reports, is in the Humanities Unbound study – 74%.

However, a number of studies over the past five or six years have given varying evidence about whether humanities PhDs are becoming professors. The Conference Board of Canada, parsing Statistics Canada data, found that less than 20% of PhDs from all disciplines living in Canada were working as full-time university professors; for humanities the number is slightly higher, but still less than 30%. The Higher Education Quality Council of Ontario responded to the Conference Board by suggesting that 30% of PhDs who graduated from an Ontario university in 2009 were working as professors (with the caveat that half of them are working at a Canadian university). The TRaCE project suggests from its pilot project that 34% of humanities PhDs trained in Canada are working as professors. The University of British Columbia found that about 70% of its humanities PhDs are professors. All of these studies have limitations in methodology and results, as does the most comprehensive recent study of PhD career outcomes from the University of Toronto.

In this column, I am going to parse the data to raise a number of questions we should be asking about HPS and STS graduate education in Canada. In the next column I will look at practices in graduate education in the disciplines we study, as well as emerging best practices in graduate professional development and professionalization, for ideas of steps forward.

The 10,000 PhDs project from the University of Toronto is the nicest data set to work with and an important study, because the University of Toronto produces a significant percentage of Ontario's and Canada's PhDs (as well as a significant percentage of Canada's professors) – consequently driving the numbers behind TRaCE, HEQCO, and the Conference Board. It is, unfortunately, the only public data I have access to that gets to HPS and STS specific numbers, but IHPST is not the be-all and end-all of HPS and STS graduate education, nor is this analysis intended to be about IHPST exclusively.

From the 10,000 PhDs data we see that 20.69% of IHPST alumni (2000-2015) were working as tenure track (research) professors in 2016. Comparatively, 54.67% of philosophers and 48.59% of

historians were working as professors. History is better at producing teaching stream faculty (5.65%) than either IHPST (3.45%) or philosophy (3.33%). IHPST has higher percentages of alumni in itinerant or unstable roles like postdoc and contract instructor than either philosophy or history. However, these University of Toronto trends (history of science compared to history) are not repeated in American Historical Association findings – not that the national contexts are comparable, but it's still indicative of how challenging it is to know what is really happening.

The TRaCE project, 10,000 PhDs, and an earlier Statistics Canada report show that men are more likely to become professors than women, but I have never seen the desire to become a professor broken down by gender in publicly available data. Women are more likely to be in non-profit, self-employment, and other lower paying and less stable sectors than men. Women are less likely to have publicly available career information, on which many of the studies rely for information.

One of the challenges with all of the studies is that they are cross-sections, or snapshot studies. We don't know from the data what steps individuals took before they got to the position they were in at the moment of the study. If we compare the 2000-2003 and the 2012-2015 cohorts using 10,000 PhDs we see three trends. Tenure stream (research) faculty roles take time to acquire and/or are reducing as an outcome – 37.5% of the oldest cohort are in tenure stream (research) faculty roles compared to 13.04% of the newest cohort. Taking a postdoc is either increasingly the step required to get a tenure stream position, or is a means of delaying the transition to a role that is not teaching or research in postsecondary education – 34.78% of the newest cohort are postdocs, compared to 0% for all previous cohorts. Only 12.5% (one individual) of the oldest cohort was working outside of a teaching or research role in postsecondary education, compared to 26.1% (six individuals) of the newest cohort.

The career aspirations data that institutions will have access to after this iteration of the Canadian Graduate and Professional Student Survey will be particularly helpful in determining next steps for HPS and STS graduate education. We will know more about career interests and feelings of preparation for various careers.

Do the career aspirations of HPS and STS graduate students match the career outcomes that we are seeing in all of these studies? (I would love to run or see a study of career outcomes of master's degrees, but Alex Usher highlights why there might be resistance to the idea.) Are HPS and STS PhD students less interested in becoming professors than their peers in history and philosophy?

If so, what does that suggest about curriculum and programming?

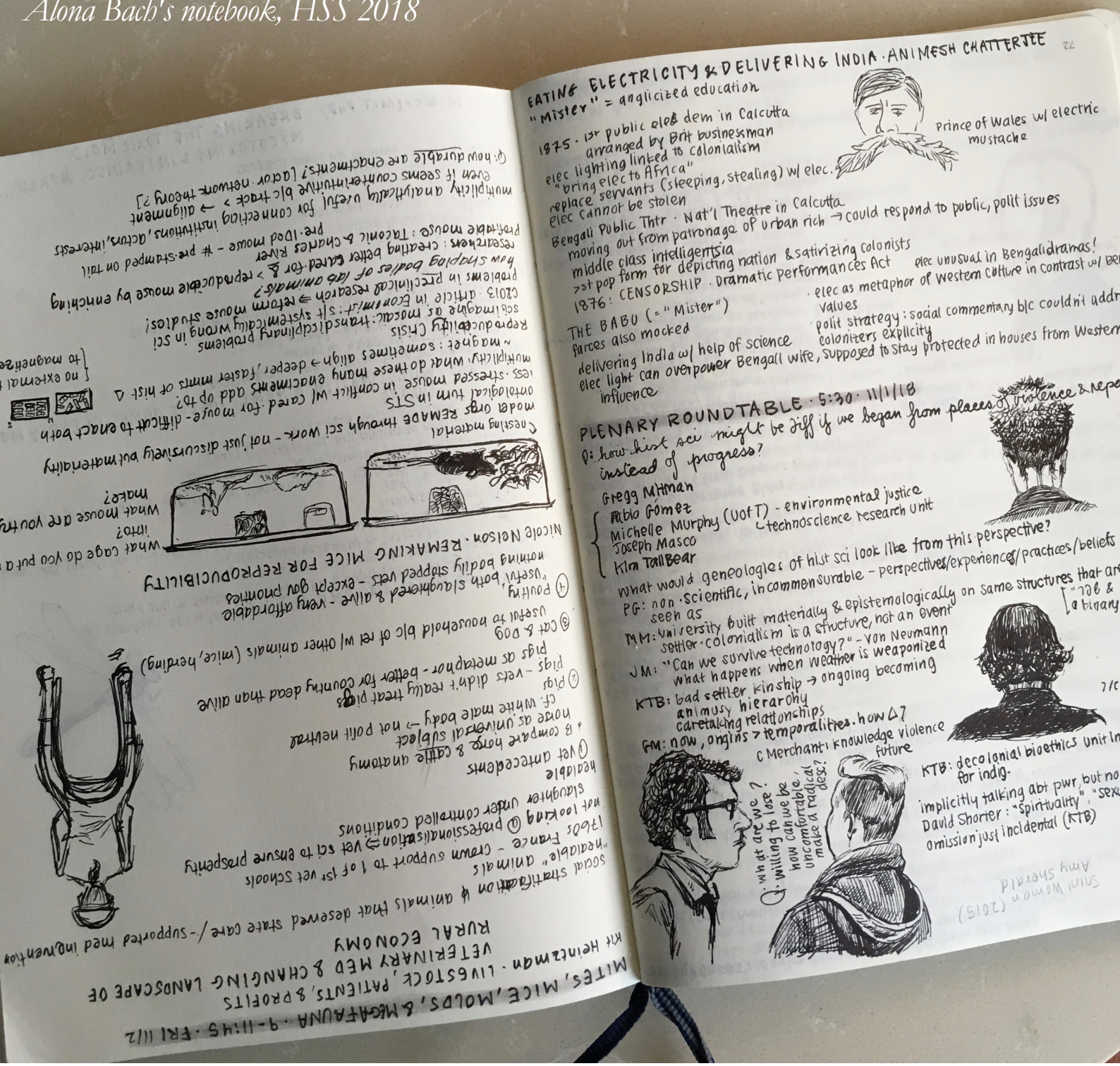
If not, why should graduate students pick HPS and STS programs if the potential career outcomes don't match their career aspirations?

While all of the studies caution that there might not be statistical significance to the different outcomes based on gender, the numbers align with everything we know about patriarchy. What steps can STS and HPS graduate programs take to review and assess practices of equity, diversity, and inclusion (gender, sexuality, racialization, indigeneity, disability, neurodiversity, etc.)?

In the next column, I will introduce and discuss some of the many ideas for revitalizing graduate education that we could consider for HPS and STS programs and will address these four questions.

About the author: Jonathan Turner has a PhD in the history of science from the University of Toronto. He works in university administration and operates a consulting business. He can be reached at bcw.director@gmail.com with questions or ideas for future columns.

Alona Bach's notebook, HSS 2018



Richard HaddenAward 2019 / Prix Richard

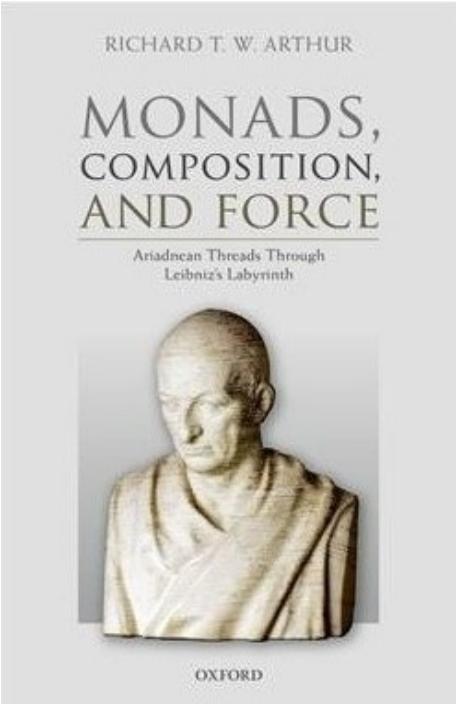
The Canadian Society for the History and Philosophy of Science offers the Richard Hadden Award, a book prize for the best student paper presented at its 2019 Vancouver meeting.To be considered for the award, students should submit a copy of their paper by e-mail (program.cshps@gmail.com) by **May 3rd, 2019**. Details of this prize can be found at: http://www.yorku.ca/cshps1/HaddenPrize.html.

La Société canadienne d'histoire et de philosophie des sciences décerne le prix Richard Hadden pour la meilleure communication étudiante présentée lors de son congrès 2019, à Vancouver. Les candidats qui souhaitent concourir devront envoyer par courriel (program.cshps@gmail.com) une copie de leur texte avant le3 mai 2019. Pour plus d'information sur le prix, voir: http://www.yorku.ca/cshps1/HaddenPrize_fr.html.

MEMBER UPDATES

Richard T.W. Arthur

Philosophy, McMaster University, ON

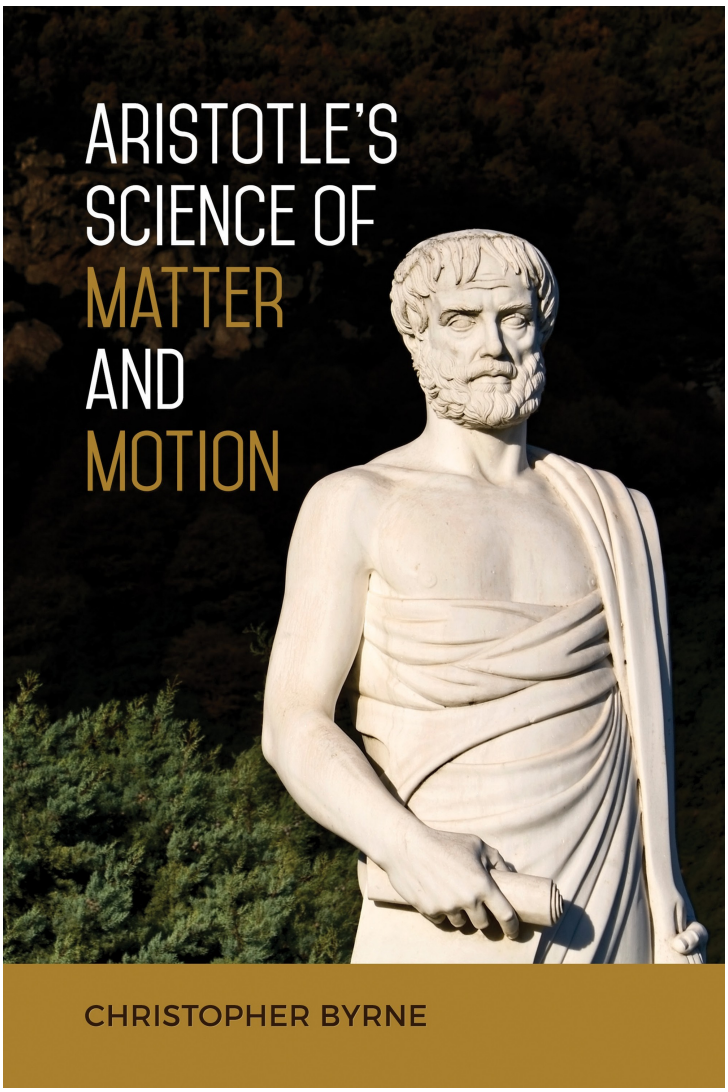


This year was a productive one for me. I gave 13 talks, 12 of them invited, in six different countries (Irvine (US), Ottawa, Dubrovnik, Milan, Montreal, Paris and Prague). In Milan (where I was a Visiting Research Fellow) I co-organized and co-hosted a workshop, "Philosophy of Time: A View from the Past", and gave 5 lectures to the Department of Philosophy and the Centre for Philosophy of Time. My new book on Leibniz, *Monads, Composition, and Force: Ariadnean Threads through Leibniz's Labyrinth* (xv + 329 pages) just came out with Oxford University Press. In it I offer new insights into Leibniz's theory of substance based on his solution to the labyrinth of the continuum, presenting it as a highly original account of the composition of bodies and motions that is neither phenomenalist nor materialist Also, my "Leibniz's Syncategorematic Actual Infinite" was published in *Infinity in Early Modern Philosophy*, eds. Ohad Nachtomy and Reed Winegar, Springer Verlag, 2018, pp. 155-179. I retired as of July 1, 2018, and am now Professor Emeritus at McMaster University.

Geoff Bil

New York Botanical Gardens, NY

In July 2018, Geoff Bil commenced as an Andrew W. Mellon Postdoctoral Fellow at the New York Botanical Garden, where he is researching a new project on ethnobotany and ethnoecology in twentieth-century Southeast Asia, Latin America and the Pacific, entitled "Fields of Empire: Science, Ethnoscience and the Making of the American Century." He is also a 2018-2019 Fellow with the Consortium for History of Science, Technology and Medicine. Additionally, in December 2018 he published an article in the *British Journal for the History of Science* entitled "Imperial Vernacular: Phytonymy, Philology, and Disciplinarity in the Indo-Pacific, 1800-1900.



Christopher Byrne

Philosophy, St. Francis Xavier University, NS

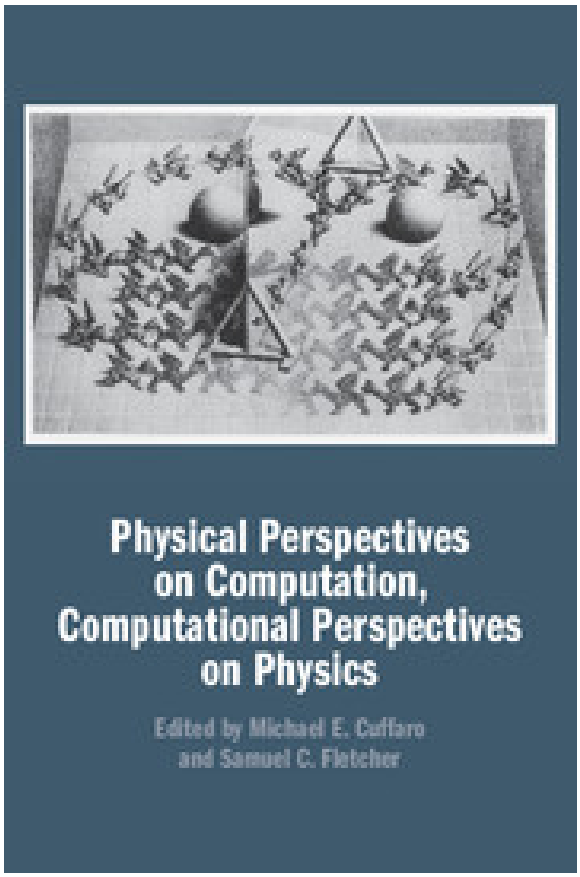
Christopher's book, *Aristotle's Science of Matter and Motion* (University of Toronto Press, 2018), is now available. Although Aristotle's contribution to biology has long been recognized, there are many philosophers and historians of science who still hold that he was the great delayer of natural science, calling him the man who held up the Scientific Revolution by two thousand years. They argue that Aristotle never considered the nature of matter as such or the changes that perceptible objects undergo simply as physical objects; he only thought about the many different, specific natures found in perceptible objects.

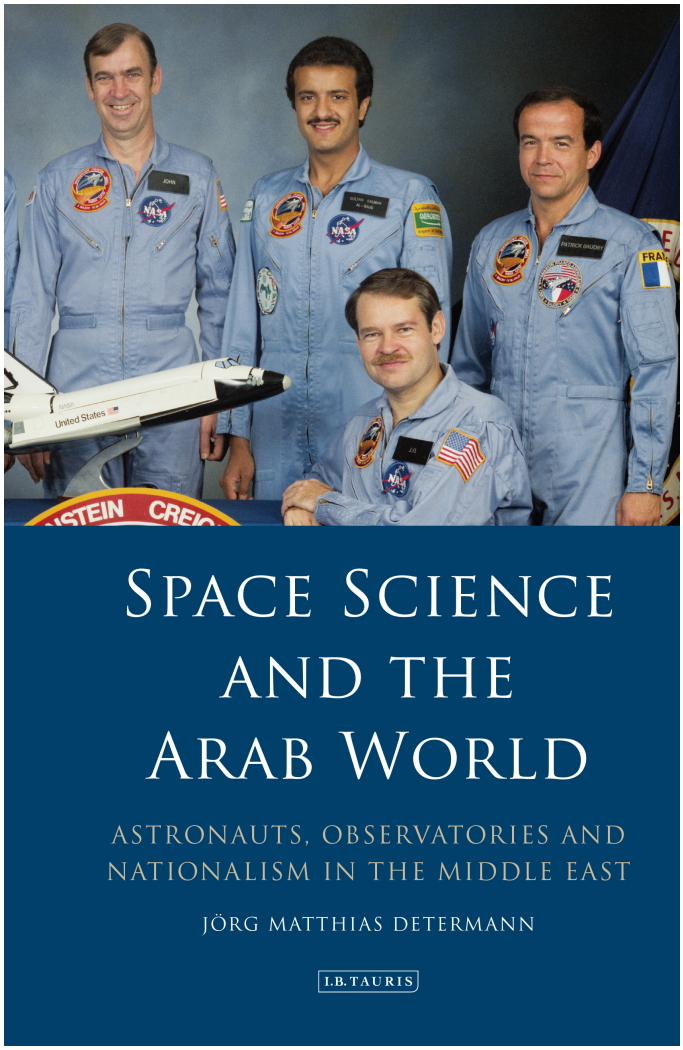
Aristotle's Science of Matter and Motion focuses on refuting this misconception, arguing that Aristotle actually offered a systematic account of matter, motion, and the basic causal powers found in all physical objects. The book sheds lights on Aristotle's account of matter, revealing how Aristotle maintained that all perceptible objects are ultimately made from physical matter of one kind or another, accounting for their basic common features. For Aristotle, then, matter matters a great deal.

Mike Cuffaro

Rotman Instiute of Philosophy, Western Ontario, ON

The collection edited by Mike and Samuel C. Fletcher, *Physical Perspectives on Computation, Computational Perspectives* (Cambridge University Press, 2018) is now available; there even exists a link to a discount coupon! This volume examines fundamental questions which connect scholars from both disciplines: is the universe a computer? Can auniversal computing machine simulate every physical process? What is the source of the computational power of quantum computers? Are computational approaches to solving physical problems and paradoxes always fruitful? Both a reference to the state of the art and a valuableand accessible entry to interdisciplinary work, the volume will interestresearchers and students working in physics, computer science, andphilosophy of science and mathematics. Chapter authors: Gualtiero Piccinini, Neal G. Anderson, B. JackCopeland, Oron Shagrir, Mark Sprevak, Rossella Lupacchini, Armond Duwell, Owen J. E. Maroney, Christopher G. Timpson, Dominic Horsman, Viv Kendon, Susan Stepney, Klaus Sutner, Robert H. C. Moir, Hajnal Andréka, Judit X. Madarász, István Németi, Péter Németi, Gergely Székely, James Ladyman, John D. Norton, Adam Koberinski, Markus P. Müller.





Jörg Matthias Determann

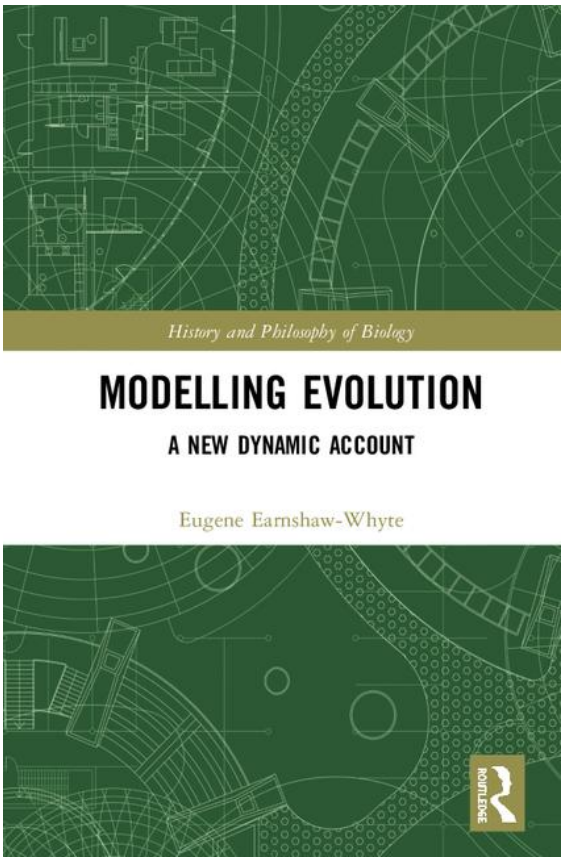
Liberal Arts & Sciences Department,
Virginia Commonwealth University in Qatar

Jörg has recently published his *Space Science and the Arab World: Astronauts, Observatories and Nationalism in the Middle East* with I.B.Tauris (London, 2018).When Sultan bin Salman left Earth on the shuttle Discovery in 1985, he became the first Arab, first Muslim and first member of a royal family in space. Twenty-five years later, the discovery of a planet 500 light years away by the Qatar Exoplanet Survey –subsequently named 'Qatar-1b' –was evidence of the cutting-edge space science projects taking place across the Middle East. This book identifies the individuals, institutions and national ideologies that enabled Arab astronomers and researchers to gain support for space exploration when Middle East governments lacked interest. Jörg Matthias Determannshows that the conquest of space became associated with national prestige, security, economic growth and the idea of an 'Arab renaissance' more generally. Equally important to this success were international collaborations: to benefit from American and Soviet expertise and technology, Arab scientists and officials had to commit to global governance of space and the common interests of humanity. Challenging the view that the golden age of Arabic science and cosmopolitanism was situated in the medieval period, Determann tells the story of the new discoveries and scientific collaborations taking place from the 19th century to the present day. An innovative contribution to Middle East studies and history of science, the book also appeals to increased business, media and political interest in the Arab space industry.

Eugene Earnshaw

Seneca College, ON

Eugene's first book, *Modelling Evolution: A New Dynamic Account* (Routledge, 2018), has just been published. The book offers a new, general account of evolution by natural selection that identifies the essential features of evolutionary models that transcend any particular discipline. Evolution by natural selection in its broad sense is the systemic advantage of a type, in contrast to the narrow definition using heritable variation in fitness. This account is explained, contextualised and applied to a variety of questions in both biology and the social sciences. Offering an accessible and comprehensive account of evolution that is applicable both to biology and the broader social sciences, *Modelling Evolution* will appeal to students and researchers interested in fields such as biology, economics, sociology, history, and psychology.



Jackie Feke

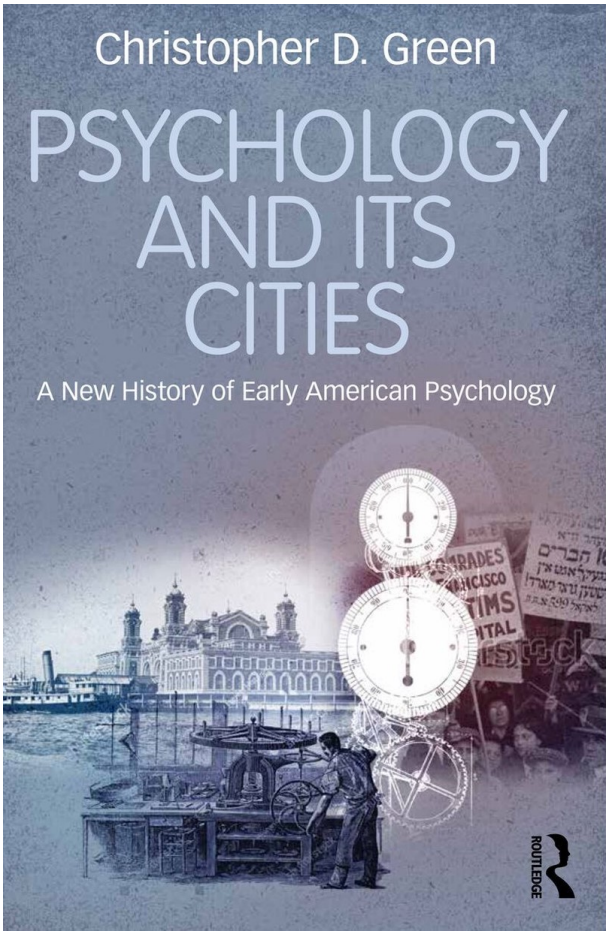
Philosophy, University of Waterloo, ON

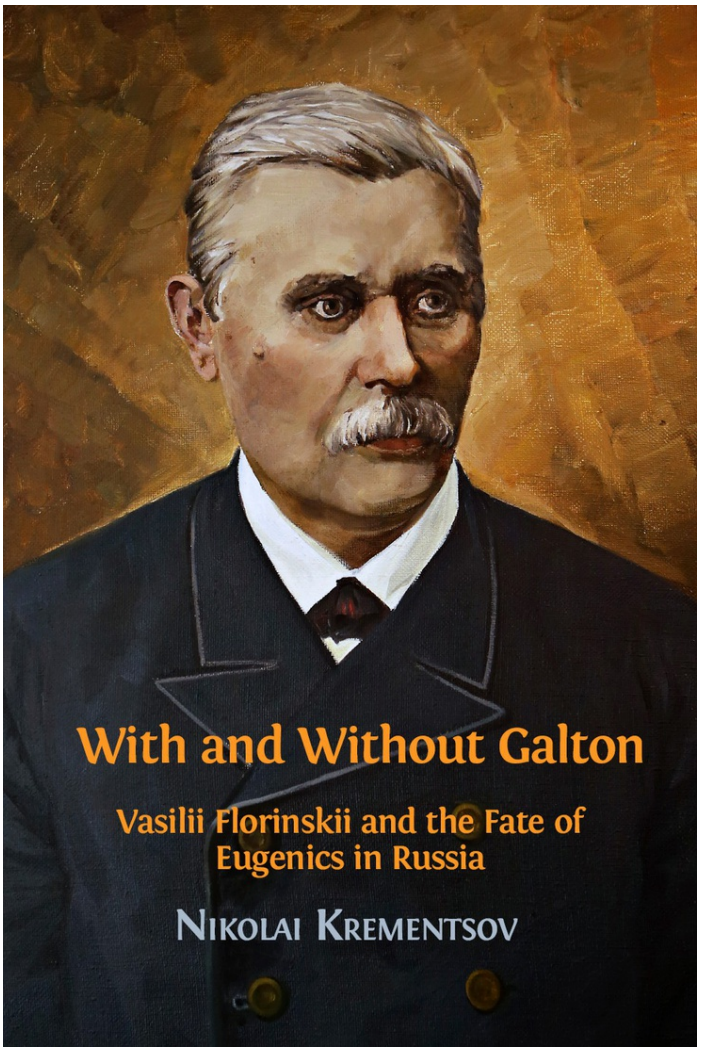
Jackie has recently published her book *Ptolemy's Philosophy: Mathematics as a Way of Life* with Princeton University Press. The Greco-Roman mathematician Claudius Ptolemy is one of the most significant figures in the history of science. He is remembered today for his astronomy, but his philosophy is almost entirely lost to history. This groundbreaking book is the first to reconstruct Ptolemy's general philosophical system — including his metaphysics, epistemology, and ethics—and to explore its relationship to astronomy, harmonics, element theory, astrology, cosmology, psychology, and theology. In this stimulating intellectual history, Jackie uncovers references to a complex and sophisticated philosophical agenda scattered among Ptolemy's technical studies in the physical and mathematical sciences. She shows how he developed a philosophy that was radical and even subversive, appropriating ideas and turning them against the very philosophers from whom he drew influence. This book reveals how Ptolemy's unique system is at once a critique of prevailing philosophical trends and a conception of the world in which mathematics reigns supreme. A compelling work of scholarship, *Ptolemy's Philosophy* demonstrates how Ptolemy situated mathematics at the very foundation of all philosophy—theoretical and practical—and advanced the mathematical way of life as the true path to human perfection.

Christopher D. Green

Psychology, York University, ON

A new book by Chris entitled *Psychology and its Cities: A New History of Early American Psychology* (Routledge, 2018). Within the social and political upheaval of American cities in the decades surrounding the turn of the 20thcentury, a new scientific discipline, psychology, strove to carve out a place for itself. In this new history of early American psychology, Christopher D. Green highlights the urban contexts in which much of early American psychology developed and tells the stories of well-known early psychologists, including William James, G. Stanley Hall, John Dewey, and James McKeen Cattell, detailing how early psychologists attempted to alleviate the turmoil around them. American psychologists sought out the daunting intellectual, emotional, and social challenges that were threatening to destabilize the nation's burgeoning urban areas and proposed novel solutions, sometimes to positive and sometimes to negative effect. Their contributions helped develop our modern ideas about the mind, person, and society. This book is ideal for scholars and students interested in the history of psychology.





Nikolai Krementsov

IHPST, University of Toronto, ON

Nikolai Krementsov has published *With and Without Galton: Vasilii Florinskii and the Fate of Eugenics in Russia* (Cambridge, UK: Open Book Publishers, 2018). In 1865, British polymath Francis Galton published his initial thoughts about the scientific field that would become 'eugenics.' The same year, Russian physician Vasilii Florinskii addressed similar issues in a sizeable treatise, entitled *Human Perfection and Degeneration*. Initially unheralded, Florinskii's book would go on to have a remarkable afterlife in twentieth- and twenty-first-century Russia. In this lucid and insightful work, Nikolai argues that the concept of eugenics brings together ideas, values, practices, and fears energised by a focus on the future. It has proven so seductive to different groups over time because it provides a way to grapple with fundamental existential questions of human nature and destiny. *With and Without Galton* develops this argument by tracing the life-story of Florinskii's monograph from its uncelebrated arrival amid the Russian empire's Great Reforms, to its reissue after the Bolshevik Revolution, its decline under Stalinism, and its subsequent resurgence: first, as a founding document of medical genetics, and most recently, as a manifesto for nationalists and racial purists. Nikolai's meticulously researched 'biography of a book' sheds light not only on the peculiar fate of eugenics in Russia, but also on its convoluted transnational history, elucidating the field's protean nature and its continuing and contested appeal to diverse audiences, multiple local trajectories, and global trends.

Eleanor Louson

Michigan State University, MI

In September 2018, Eleanor successfully defended her dissertation "Never Before Seen: Staging, Spectacle, and Story in Wildlife Film's Blue-Chip Renaissance" at York University's Science & Technology Studies Graduate Program. She was supervised by Katey Anderson. She was also the "Cosmopolitanism and the Local in Science and Nature" Researcher of the Month for November 2018. This year she started teaching introductory HPS at Lyman Briggs College, Michigan State University.

Greg Lusk

Philosophy, Michigan State University, MI

In August of 2018, Greg Lusk became Assistant Professor of History, Philosophy, and Sociology of Science at Michigan State University. He is cross-appointed in Lyman Briggs College and the Department of Philosophy. Greg started this position after finishing his postdoc at the University of Chicago as part of the Limits of the Numerical: Climate Change project. In the past year, Greg has served as a visiting fellow at the Center for the Humanities Engaging Science and Society at Durham University, and as a co-PI of the Logic and Politics of Climate Change project at the Neubauer Collegium. Greg was a co-recipient of the 2018 PSA Women's Caucus Symposium Prize, and his most recent work, "Saving the Data", is forthcoming in *The British Journal for the Philosophy of Science.*

Kira Lussier

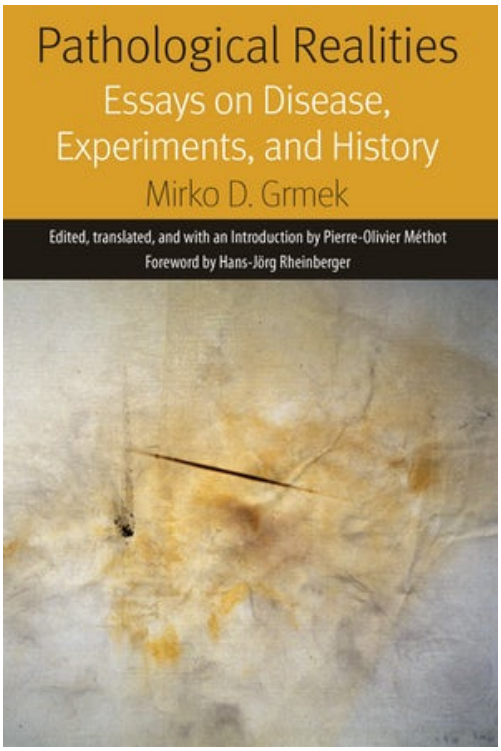
University of Toronto Mississauga, ON

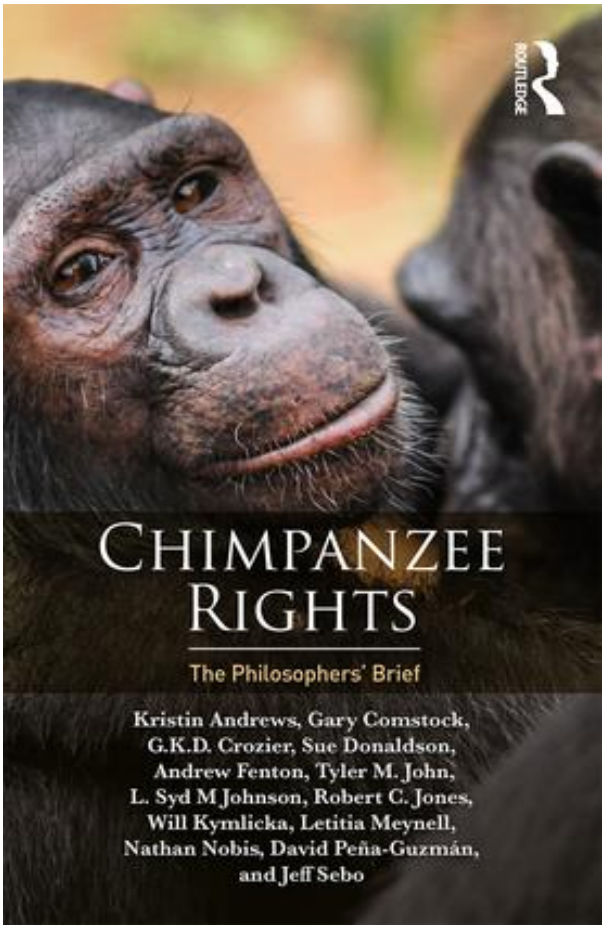
Kira Lussier has completed her PhD in history of science at the University of Toronto and started a new position as postdoctoral research fellow at the University of Toronto, Mississauga's Institute for Management and Innovation. She defended her dissertation, "Personality, Incorporated; Psychological Capital in American Management, 1960-1995," in September, 2018.

Pierre-Olivier Méthot

Philosophie, Université Laval, QC

Pierre-Olivier vient de publier une sélection de textes de Mirko D. Grmek, intitulée *Pathological Realities. Essays on Disease, Experiments, and History* (Edited, translated and with an Introduction by Pierre Olivier Méthot. Foreword by Hans-Jörg Rheinberger. New York: Fordham University Press, 2019).

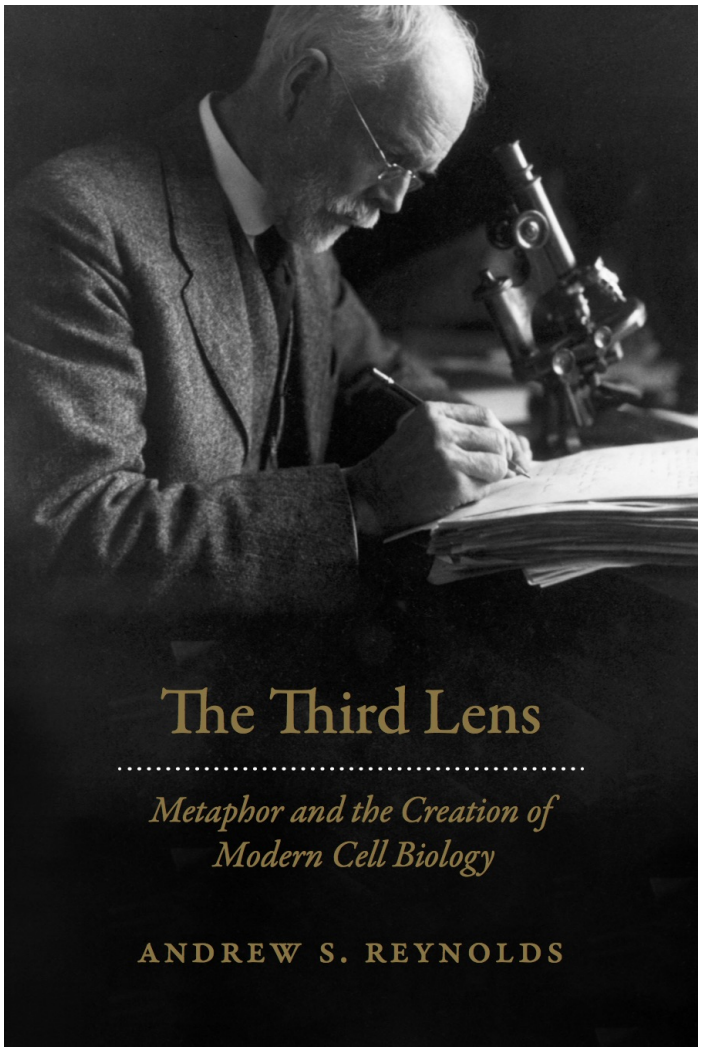




Letitia Meynell

Philosophy & Gender and Women's Studies, Dalhousie University, NS

Chimpanzee Rights: The Philosophers' Brief (Routledge, 2018) is an extended version of an amicus brief submitted to the New York Court of Appeals in support of giving habeas corpus relief to two chimpanzees, Kiko and Tommy. The authors examine the four lines of reasoning that the courts have used to deny chimpanzee personhood based on species membership, the social contract, community membership, and capacities. None of these, they argue, merits disqualifying chimpanzees from personhood. The authors conclude that when judges face the choice between seeing Kiko and Tommy as things and seeing them as persons—the only options under current law—they should conclude that Kiko and Tommy are persons who should therefore be protected from unlawful confinement.



Andrew Reynolds

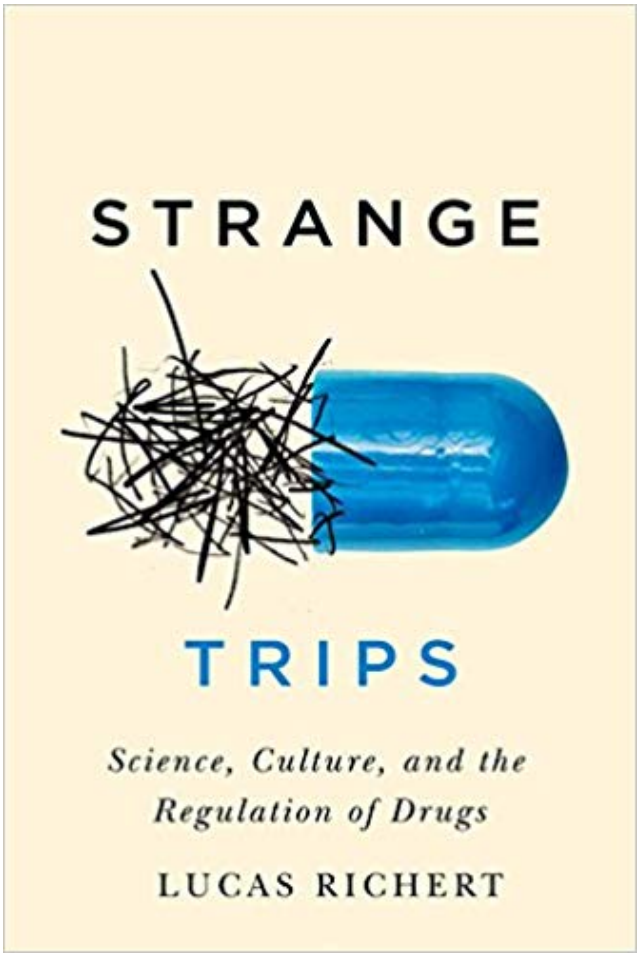
Philosophy, Cape Brenton University, NS

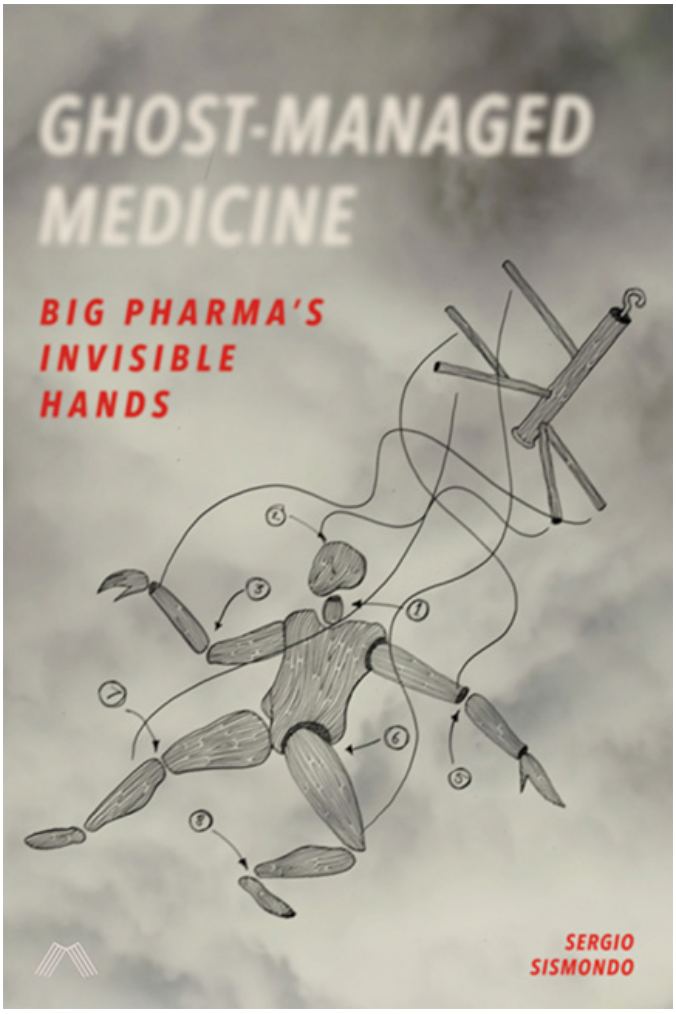
Andrew has recently published *The Third Lens: Metaphor and the Creation of Modern Cell Biology* (Chicago and London: University of Chicago Press, 2018). Does science aim at providing an account of the world that is *literally* true or *objectively* true? Understanding the difference requires paying close attention to metaphor and its role in science. In *The Third Lens*, Andrew S. Reynolds argues that metaphors, like microscopes and other instruments, are a vital tool in the construction of scientific knowledge and explanations of how the world works. More than just rhetorical devices for conveying difficult ideas, metaphors provide the conceptual means with which scientists interpret and intervene in the world. Andrew investigates the role of metaphors in the creation of scientific concepts, theories, and explanations, using cell theory as his primary case study. He explores the history of key metaphors that have informed the field and the experimental, philosophical, and social circumstances under which they have emerged, risen in popularity, and in some cases faded from view. How we think of cells—as chambers, organisms, or even machines—makes a difference to scientific practice. Consequently, an accurate picture of how scientific knowledge is made requires us to understand how the metaphors scientists use—and the social values that often surreptitiously accompany them—influence our understanding of the world, and, ultimately, of ourselves.

Lucas Richert

University of Wisconsin-Madison, WI

Luc has a new book coming out in February 2019, *Strange Trips: Science, Culture, and the Regulation of Drugs* (McGill-Queen's University Press). Drugs take strange journeys from the black market to the doctor's black bag. Changing marijuana laws in the United States and Canada, the opioid crisis, and the rising costs of pharmaceuticals have sharpened the public's awareness of drugs and their regulation. In *Strange Trips*, Lucas Richert investigates the myths, meanings, and boundaries of recreational drugs, palliative care drugs, and pharmaceuticals as well as struggles over product innovation, consumer protection, and freedom of choice in the medical marketplace. Richert asks how perceptions of a product shift – from dangerous substance to medical breakthrough, or vice versa. Through close examination of archival materials, accounts, and records, he brings substances into conversation with each other and demonstrates the contentious relationship between scientific knowledge, cultural assumptions, and social concerns. Weaving together stories of consumer resistance and government control, *Strange Trips* offers timely recommendations for the future of drug regulation.





Sergio Sismondo

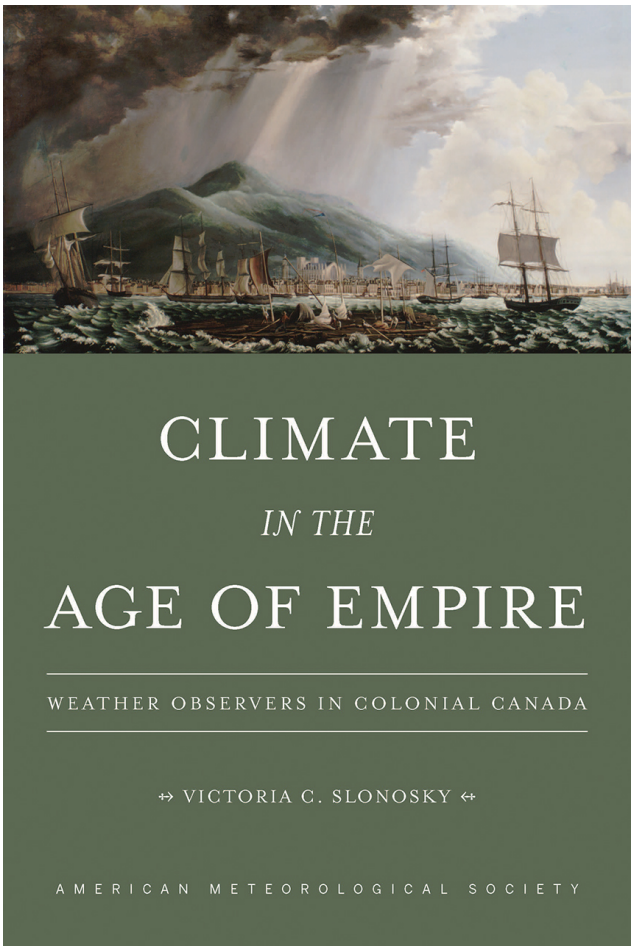
Philosophy, Queen's University, ON

Sergio's book, *Ghost-Managed Medicine: Big Pharma's Invisible Hands* (Manchester: Mattering Press, 2018) explores a spectral side of medical knowledge, based in pharmaceutical industry tactics and practices. Hidden from the public view, the many invisible hands of the pharmaceutical industry and its agents channel streams of drug information and knowledge from contract research organizations (that extract data from experimental bodies) to publication planners (who produce ghostwritten medical journal articles) to key opinion leaders (who are sent out to educate physicians about drugs) to patient advocacy organizations (who ventriloquize views on diseases, treatments and regulations), and onward. The goal of this 'assemblage marketing' is to establish conditions that make specific diagnoses, prescriptions and purchases as obvious and frequent as possible. While staying in the shadows, companies create powerful markets in which increasing numbers of people become sick and the drugs largely sell themselves. *Ghost-Managed Medicine* draws on presentations at industry conferences, especially ones where pharmaceutical companies interact with communication, marketing and other agencies. Participants at these interface conferences describe goals, practices and concerns; in the process, they reveal a lot about how the industry works. Some of the book's other data is taken from publications that also serve as interfaces between the industry and adjacent actors, and from interviews with insiders. The book is published as a paperback, and is also available open-access from the publisher's website.

Victoria Slonosky

CIRM, McGill University, QC

I have recently published a book on the history of climatology in Canada: *Climate in the Age of Empire: Weather Observers in Colonial Canada* (The University of Chicago Press, 2018). Though efforts to understand human-caused climate change have intensified in recent decades, weather observers have been paying close attention to changes in climate for centuries. My book offers a close look at that work as it was practiced in Canada since colonial times. I show how weather observers throughout Canada who had been trained in the scientific tradition inherited from their European forebears built a scientific community and amassed a remarkable body of detailed knowledge about Canada's climate and its fluctuations, all rooted in firsthand observation. Covering work by early French and British observers, the book presents excerpts from weather diaries and other records that, more than the climate itself, reveal colonial attitudes toward it.



Mark Solovey

IHPST, University of Toronto, ON

Mark has a forthcoming book with expected publication in 2019, *Social Science for What? Public Funding for the "Other Sciences" at the U.S. National Science Foundation since World War Two* (MIT Press), and a forthcoming essay, expected publication 2018, "The Impossible Dream: Scientism as Strategy for Containing Distrust of Social Science at the U.S. National Science Foundation, 1945-1980," *International Journal for History, Culture, and Modernity*. He is co-editor with Deborah Weinstein (historian of science and medicine/American studies scholar, Brown University) for a special issue of the *Journal of the History of the Behavioral Sciences* on the topic Living Well: Histories of Emotions, Wellness & Human Flourishing. For the 2018 International Sociological Association's World Congress of Sociology, held in Toronto in July, he was the co-organizer with Christian Daye (historian of sociology/sociologist in Austria) oftwo sessions on the theme "Cold War Social and Behavioral Sciences: International and Transnational Entanglements". Links to the first and second sessions can be found here and here. Christian and Mark are now planning an edited volume of essays on the same topic.

Aaron Wright

History, Dalousie Univesity, NS

After completing a Postdoctoral Scholarship at the Suppes Center for History and Philosophy of Science at Stanford University last summer, I have taken up an appointment as Assistant Professor in the Department of History at Dalhousie University this fall.

Alison Wylie

Philosophy, University of British Columbia, BC

Alison has been awarded a Tier 1 Canada Research Chair in Philosophy of the Social and Historical Sciences shortly after she took a position as Professor of Philosophy at UBC a year ago. She will also be serving as local arrangements person for the next CSHPS Congress meeting to be held at UBC in Vancouver this spring.

Islamic Scientific Manuscripts Initiative

The Islamic Scientific Manuscripts Initiative (ISMI) is pleased to announce the launch of its public website at https://ismi.mpiwg-berlin.mpg.de . The ISMI database provides a means to access Islamicate authors, their works, and extant manuscript witnesses in the various fields of the mathematical sciences. These fields include the "pure" mathematical sciences (such as geometry, arithmetic, algebra, and trigonometry) as well as the "mixed" mathematical sciences (such as astronomy, optics, music, and mechanics). In addition to its bio-bibliographical function, the database is designed to facilitate research by, among other things, allowing for "transitive queries" that return chains of teachers/students, original texts (matn)/commentaries, ownership chains, and so forth. A Query Builder allows the researcher to query the data in numerous ways; one could, for example, search for all works on astronomical instruments copied between 1250-1350. Visualization tools are also being developed as aids for this research. You can find a preliminary set of tools in the "ISMI Lab" section of the website.

ISMI is a collaborative project that is directed jointly by Dr. Sally Ragep and Prof. Jamil Ragep at McGill University, Montreal, and by Prof. Lorraine Daston at the Max Planck Institute for the History of Science (MPIWG Berlin). The senior technical researcher is Dr. Robert Casties (MPIWG Berlin).

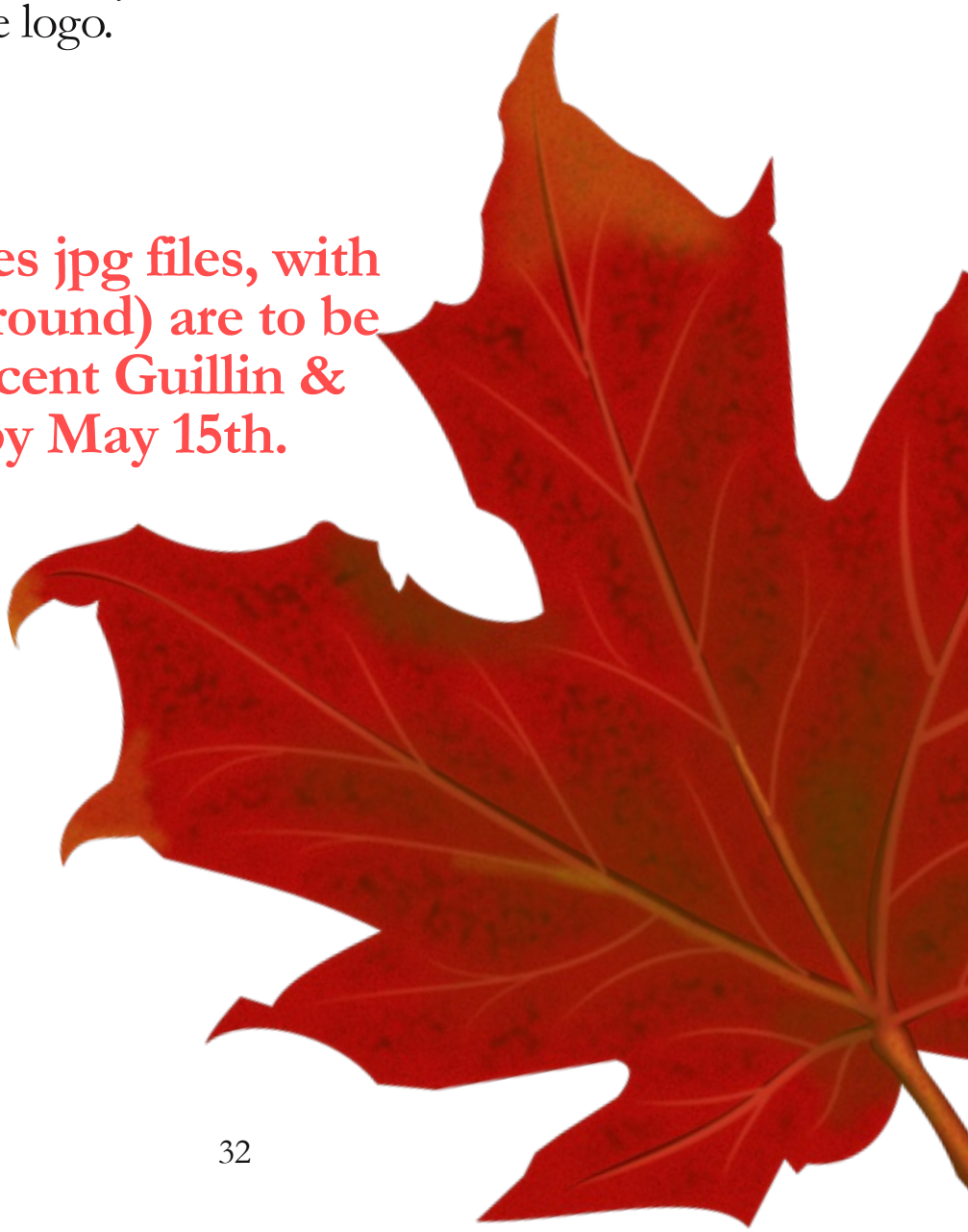
SPECIAL ANNOUNCEMENT

The Canadian Society for the History and Philosophy of Science / Société canadienne d'histoire et de philosophie des sciences needs a logo!

In anticipation for the 100th issue of *Communiqué* and the annual meeting, we are launching a contest to select a design for the new CSHPS/SCHPS logo.

If a design is selected, the designer will receive a free book worth up to $100. Selection will be made by the CSHPS Officers, who have the final say on the choice of the logo.

Designs (in high-res jpg files, with transparent background) are to be submitted to Vincent Guillin & Jaipreet Virdi by May 15th.



Submissions

All submissions and inquiries should be emailed to co-editors **Vincent Guillin** guillin.vincent_philippe@uqam.ca or **Jaipreet Virdi** jvirdi@udel.edu.

Issues are published three times a year: in Winter, Summer, and Autumn. Submissions are welcome and can be sent in both official languages. We welcome submissions in the following categories:

Announcements: details about conferences, worshops, job openings, departmental or program news, and call for papers.

Research & Pedagogy: launches of any new and innovative research or techniques used to teach HPS or original topics addresed in their classes and seminars. We are especially interested in digital humanities projects and student engagement pedagogies. Descriptions should be no more than 800 words(with e-links, if available).

Reports & Reviews: we are interested in receiving short reports (500 w. max.) from conferences or workshops our members have attended during the fall, together with photos they would like to share with us. 500 w. max book reviews are also welcome.

In Conversation: we encourage graduate and early career scholars to contact Jaipreet Virdi if you have an idea of an individual to interview. We are especially looking for interviews of scholars who adopt intersectional approaches to HPS or who advocate non-traditional scholarly avenues.

Artwork & Photos: we welcome submissions of all original art and photos, especially for the cover.

Member Updates & New Books: once a year we'll publish member updates, but welcome new book announcements year-long. Please send no more than 200 words blurb and a high-res image of the cover.

Our aim is to keep the HPS community abreast of what is going on in the field, here and abroad, intellectually and institutionally. But we need your contributions if we are to share your news with the CSHPS community; the newsletter is only as robust and effective as we make it. We thank you for your contributions. The editors are grateful to York University for assistance with archival printing costs.

The newsletter layout was designed and created by Jaipreet Virdi using Scribus, an open source desktop publishing program.

REMINDER TO RENEW/RAPPEL DE COTISATION

This is a good time to remind members that your 2018 memberships have expired, so it is time to renew for 2019. In order to attend and/or participate in the 2019 Vancouvermeeting, you do need to be a member in good standing for 2019: http://www.yorku.ca/cshps1/join.htm

lLe moment est venu de rappeler à nos membres que leur affiliation pour 2018 vient d'arriver à son terme et qu'il est donc temps de renouveler leur adhésion pour 2019. Pour assisteret/ou participer au congrèsde Vancouveren 2019, vous devez être à jour de votre cotisation pour 2019: http://www.yorku.ca/cshps1/join_fr.html