On Time: The Quest for Precision
An exhibition of books from the Linda Hall Library of Science, Engineering & Technology
By Bruce Bradley, History of Science Librarian Emeritus, Linda Hall Library

From sundials to atomic clocks, the fascinating story of increasing accuracy in timekeeping, as documented in rare books and journals, will be on view at an exhibition in New York City at the Grolier Club (14 Sept to 19 Nov 2016). From the fifteenth century to the present, the tale unfolds in books from the comprehensive collections of the Linda Hall Library in Kansas City, Missouri, an independent research library that specializes in science, engineering, and technology. As a supplement to the books, the exhibition will include a small selection of historical clocks and timepieces from the collection of Grolier Club member Fortunat Mueller-Maerki.

Two of the books featured in the exhibition are the first and second editions of a work that describes a collection of mathematical and mechanical curiosities that were created by Nicolas Grollier de Servières, a cousin of the Grolier Club’s namesake. The book was first published as Recueil d’ouvrages curieux de mathématique et de mécanique, (Lyon, 1719) with over 80 engraved plates of machines and designs, including several curious clocks powered by the weight of the clock itself descending on an inclined plane, or by an Archimedean screw with a hidden source of power.

Precision and accuracy in clocks such as these may have been less important than the artistic, decorative, and symbolic features. Such was surely the case with the sunflower clock described and illustrated by Athanasius Kircher in his book, Magnes siue De arte magnetica opus tripartitum (Rome, 1641). A detailed, full-page engraving shows the sunflower clock floating on a piece of cork with its roots in the water. Vegetable magnetism supposedly caused the flower to follow the sun, so that
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a pointer fixed in the center would indicate the hour on a clock dial.

Books on more traditional types of sundials are featured in another section of the exhibition, beginning with Sebastian Münster’s *Horologiographia* (Basel, 1533). This comprehensive treatise was first issued as *Compositio horologiorum* in 1531, but it was popular enough to warrant this second enlarged edition just two years later. Both editions illustrate all manner and variety of sundials with beautiful woodcuts, some of which are attributed to Hans Holbein the Younger.

Early mechanical clocks offered several advantages over sundials, such as portability and the ability to show the time during cloudy weather and at night. They lacked precision, however, and had to be readjusted periodically to synchronize them with local solar time. And even after the appearance of mechanical clocks, books about sundials and how to make them remained popular. Demand for them continued throughout the sixteenth century and into the seventeenth.

The first practical book on sundials written in French was a seventeenth-century treatise by Salomon de Caus, a French engineer and scientist who developed a strong interest in mechanical devices. He dedicated his *La pratique et démonstration des horloges solaires* (Paris, 1624) to Cardinal de Richelieu, explaining to the Cardinal that his book would be easier to understand than earlier treatises on sundials, such as those by Christoph Clavius. In addition, this book would be even more accessible than others due to its pop-up models of sundials made of thick paper.

Even though the first mechanical clocks in the thirteenth century were crude, imprecise, unreliable instruments, a mechanical means of generating and counting a repeating beat marked a revolution in timekeeping. Their oscillating motion, which divided time into countable beats and was first illustrated in an encyclopedic-like book by Robert Fludd in 1617, was the basis for all subsequent improvements in precision timekeeping.

Fludd’s book, *Utriusque cosmi maioris scilicet et minoris metaphysica, physica atque technica historia* (Oppenheim, 1617-1618), is famous for its many elaborate engravings that portray an interconnected universe. It also illustrates the key invention that made all mechanical clocks possible: a crown wheel, driven by a weight or spring, that is allowed to “escape” as two pallets on a vertical shaft alternately catch and release it—the famous escapement.

But this was not the first printed illustration of a mechanical clock. That honor goes to a woodcut in a book by Girolamo Cardano, his *De rerum
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varietate libri XVII (Basel, 1557). The clock mechanism appeared in this folio encyclopedia as part of Cardano’s discussion of motion. The clock uses a spring to drive the mechanism and compensates for the diminishing power of the unwinding spring with a conical fusee. The fusee was a standard part of many later spring-driven clocks and watches that gave the spring a nearly constant driving force. An octavo edition appeared the same year and used the same woodcut.

One of the earliest illustrations of a weight-driven clock appeared in another encyclopedic book by Cardano, but only in the French translation published as Les livres ... intitulez De la subtilité, & subtiles inventions. (Paris, 1566). Curiously, the space for the woodcut was left blank in the original Latin edition published by Johann Petreius in 1550. The French translation added a small woodcut that shows little of the mechanism other than the weights, dial hand, and a bell to sound the hour. The text describes the falling weight as a type of force. Later in the book, spring-driven clocks are discussed as a new invention, but are not illustrated.

In a book that described and illustrated some of the best astronomical instruments of the sixteenth century, Astronomiae instauratae mechanica (Nuremberg, 1602), Tycho Brahe mentioned that there were four clocks in his observatory. The largest of them must have been huge—one of its three wheels boasted 1,200 teeth and a diameter of two cubits (or about three feet) and was cast from solid brass. That clock is not illustrated, but two smaller clocks are shown in the plate of the famous mural quadrant that Tycho used for making observations of star positions. He used two clocks, Tycho explained, to reduce errors in recording the exact moment of observation.

Two clocks are also shown in an illustration of the observatory of Ole Rømer, in the account of his methods and discoveries by Peder Horrebow, Basis astronomiae. (Copenhagen, 1735). One of the plates shows Rømer working at his meridian telescope, observing star positions. Two clocks were built into the wall for the same reason that Tycho used two clocks. But a Huygens-style pendulum clock supplanted them, as it was undoubtedly more accurate than the two built-in clocks and had been hung by the window where the astronomer could easily read the time of an observation.

Christiaan Huygens designed a pendulum clock in 1656, and contracted with the clockmaker Salomon Coster in The Hague to build one the following year. It was the first successful pendulum clock, but Huygens improved its precision by altering the pendulum’s swing with two curved metal pieces at the top, changing the swing to the arc of a cycloid. The mathematical proof that a cycloid was the perfect curve to produce constant oscillation for a pendulum is what he presented in his book, Horologium oscillatorium (Paris, 1673). The book’s famous woodcut shows the clock, its mechanism, and the “cycloid cheeks” that changed the swing from a circle to a cycloid.

Practical instructions for building a pendulum clock, written for the “vulgar workman,” appeared in The Artificial Clock-Maker (London, 1696), by William Derham, a clergyman. It was Derham’s first book and in his later book, Astro-Theology, he compared the ordered universe of the Creator...
to the clockwork machinery of a clockmaker. His *The Artificial Clock‑Maker* includes the only documentation of a claim by Robert Hooke to have invented the anchor escapement, which is usually credited to William Clement.

Improving the design for the escapement mechanism was one way to improve the accuracy of a clock. Another was to improve the design of the pendulum. John Ellicott is remembered for his work on temperature‑compensated pendulums, but during his lifetime his superior clock‑making skills led to his appointment as Clockmaker to King George III. The “Ellicott pendulum” used iron and brass rods, cleverly connected to keep the overall length constant and compensate for errors otherwise caused by changes in the temperature. His design appeared in 1752 and was published in the Royal Society of London’s *Philosophical Transactions* with a large folded plate.

Scientific periodicals were exceedingly rare before the late seventeenth century and the *Philosophical Transactions*, which began in 1665 allowed quick dissemination of new discoveries and results. Details of Huygens’ balance‑spring watch appeared in Paris only a few weeks before its announcement and explanation in the *Philosophical Transactions* in March 1675. The spiral spring keeps the balance wheel rotating back and forth regularly, like a pendulum. The invention was vital in providing portable watches with the same degree of accuracy as pendulum clocks, but it was not without controversy. Robert Hooke immediately claimed that he had invented the balance spring years earlier, without publishing the design.

Experts recognized that the balance spring, a spiral spring attached to an oscillating balance wheel, could be used in a sea‑going watch or clock, a potentially great leap forward in solving the thorny problem of longitude. There was a huge gap, however, between the published concept of a balance spring and the design and construction of a watch that would be reliable at sea. When John Harrison finally built one, a chronometer known as H‑4, the accurate working model was not enough to win the longitude prize offered by the British government. It also had to be practical, and that meant publishing the design so others could emulate it. Exacting care was taken to print engravings of the mechanism, along with a technical description in *The Principles of Mr. Harrison’s Time‑Keeper* (London, 1767). The Preface is by Nevil Maskelyne, Astronomer Royal, who also wrote the “Notes,” which was based on when Harrison dismantled H−4 in the presence of experts.

Harrison’s *Principles* is just one of 86 printed books on science and technology in this exhibition that have described techniques of timekeeping, announced new inventions and discoveries, and instructed others in the construction and use of timekeeping instruments since the beginning of printing in the fifteenth century. The long advance toward precision in time leads to the twentieth century when *Nature*, a scientific journal known for publishing important new advances and original research, published the description of the first atomic clock, designed and built by Louis Essen with Jack Parry at the National Physical Laboratory in Teddington, England.

Because of the precision in timekeeping made possible by atomic clocks, the International Bureau of Weights and Measures redefined the concept of a second in 1967, publishing the result in the proceedings of their scientific meeting. And since atomic clocks are more accurate than the Earth’s rotation, the delegates knew that astronomical timekeeping was doomed. The new definition of a second was in terms of the frequency of light: precisely “the duration of 9,192,631,770 periods of the radiation corresponding to the transition between the two hyperfine levels of the ground state of the caesium-133 atom.” And the quest for precision continues.

The Linda Hall Library, established by the wills of Herbert and Linda Hall, opened in 1946. A not‑for‑profit, privately funded institution, the Library is open to the public free of charge.

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and serves scholars, students, and researchers around the world. The Library remains devoted to its goal of being one of the world’s preeminent collections of materials devoted to science, engineering, technology, and their histories.

The Grolier Club of New York is America’s oldest and largest society for bibliophiles and enthusiasts in the graphic arts. Founded in 1884, the club is named for Jean Grolier, the Renaissance collector renowned for sharing his library with friends. The club’s objective is to foster the literary study and promotion of arts pertaining to the production of books.

An illustrated catalogue will accompany the exhibition On Time: The Quest for Precision, which will be on display at the Grolier Club, 47 East 60th Street, New York, NY 10022, from 14 September until 19 November 2016. Hours are Monday–Saturday, 10 am – 5 pm. The exhibition gallery is open to the public free of charge. For more information call the Grolier Club at (212) 838-6690.

The Executive Office is undergoing a dramatic shift in personality. Many members associate the Office with the annual meeting, and indeed we estimate that one half of our time is devoted to the conference. This means that throughout much of the year, Greg and I are actively involved in planning and executing the meeting, from the call for papers, to sending out acceptances and rejections, to lining up audio/visual services, to collaborating with sister societies, to setting up engagement events, and on and on and on. Because of the strategic plan, we have been asked to let go of many of these duties (a difficult prospect for perfectionists), so that we can focus our energies on the 6 goals identified in our strategic plan, such as professional development, publications, broadening our reach, membership, and advocacy. The annual meeting is also in the six goals, at least of equal importance to the others, and we intend to carry out a dynamic meeting as we move forward, providing our members and our guests the finest experience that is possible.

I do realize that when I slip into superlatives such as “finest” that I teeter on the edge of corporate speak and that I may be trying to convince myself that everything will be all right. We will rely on you to provide us your insights and suggestions... for the conferences and for everything that we do. It is our hope that the strategic plan will mark a new era for the HSS, one that sees the Society flourishing in many ways.

Thank you for your membership.

Jay
Executive Director

Fellowships Available

The Radcliffe Institute for Advanced Study at Harvard University awards 50 funded residential fellowships each year designed to support scholars, scientists, artists, and writers of exceptional promise and demonstrated accomplishment.

For more information, please contact:
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How Do We Make the Future?
by Fred Gibbs, Erika Lorraine Milam, and Joanna Radin

Many academic workshops suffer from the proverbial falling-tree-in-the-woods syndrome, where a brief symphony, orchestrated in a new place around new faces and new ideas, fades into distant and ultimately inaudible murmurs as the participants scatter. We wanted to experiment with a new form of scholarship to give our two-day workshop on “Histories of the Future” a much longer and meaningful echo.

We set out to explore the question of how futures are made—sometimes deliberately, sometimes inadvertently—in a world of continuous scientific and technological invention. As historians of science, technology, and medicine, we constantly wrestle with time, innovation, and change as historical challenges. This makes us uniquely situated to scrutinize these futures.

We invited a group of scholars whose expertise spans a wide range of intellectual interests, geographies, and chronologies, to explore the intersection between professional and popular theorizing about the future of the cosmos, nature, and technology. Such futures linger at the edge of scientific respectability, and our participants analyzed a range of historical actors, from academically credible scientists, physicians, and engineers, to the authors of science fiction (and their occasional overlap). Their thoughtful reflections are now freely available at our workshop website, Histories of the Future (histscifi.com).

Each essay illustrates ways that science fiction and speculative nonfiction interact to provide both scientists and popular audiences with visions of the future that are often surprising in their coherence. The spectrum of topics is breathtaking, yet it was energizing and almost disconcertingly easy to identify key themes common to core groups of essays—in some cases explicitly, in other cases entirely implicitly. Our authors examine tales of harrowing survival, contested accounts of animacy, and voyages through space and time; they discuss the transmission of knowledge and material entities, the enhancement of bodies and minds, and authorial speculations about the future and past. Taking a broad view, our groupings of the collected essays raise provocative questions (hopefully for future essays) about the ubiquity of these themes across the kinds of sources explored by our authors—and of course what other themes may have escaped our attention.

Together, they represent a coordinated effort to understand how scientists and authors of speculative fiction bring the future into being. Authors submitted an initial essay prior to the workshop and discussion of these contributions gave us a shared body of work to draw on together. Frédérique Aït-Touati analogizes space and time as two mechanisms by which authors of speculative fiction create distance between commonly accepted images of the world and an alternative reality. Also wrestling with issues of temporality, Colin Milburn focuses on faster-than-light tachyons as objects of both scientific research and science-fictional narratives. The theme of bodily enhancement informs Oliver Gaycken’s explorations of x-ray vision and the anxieties raised by the possibility of super-human senses among authors and filmmakers alike. Extra-ordinary humanity in the form of undead paranimates drive Projit Mukharji’s essay on Bengali science fictions of the late-nineteenth century. A different kind of animacy characterizes Michelle Murphy’s essays, which dissect the processes by which technoscience animates phantasmagrams of life, gender, kinship, and nation in South Asia. Further illustrating the power of speculative futures, Ruha Benjamin mobilizes her training as a sociologist of science to create her own fictional narrative critically examining race, science, and subjectivity from the perspective of 2064. Turning to Bolshevik...
How Do We Make the Future, *cont.*

science fiction, Nikolai Krementsov illustrates the value of speculative science fiction as a cultural resource increasing the public visibility and cultural authority of the life sciences in the 1920s. More futuristically, biomedical survival features centrally in Patrick McCray’s essays on cryonics research in the American 1960s that link the hopes of cryonicists for a future in which they might live again. The subjects of Erika Milam’s essay worried that this chromed future might never come to pass and invoked a primitive evolutionary past to warn the public of the dire potential consequences of the Cold War. Questions of liveliness occur, too, in Steph Dick’s account of the future of thinking as conceptualized by early artificial intelligence research. Stories of communication and contact are of course hallmarks of science fiction. On this theme, Joanna Radin concentrates on Michael Crichton’s techno-thrillers about our genetic futures, especially *The Andromeda Strain* (1969) and more recently the movie version of *Jurassic World* (2015). More linguistically, Michael Gordin analyzes how some science fiction authors confronting the aftermath of nuclear war creatively highlighted the evolution of languages.

In addition to first-rate writing about the history of the future, we wanted to think futuristically about how we might better share our work. We endeavored to provide both a place to “publish” essays before convening in person, and a place where revised essays could be available long after our tree toppled noiselessly and everyone returned home.

Especially given the subject matter, producing an edited collection in the typical academic fashion seemed like a missed opportunity. We elected, then, with the generous agreement of our contributors, to adopt an open-access policy so that our scholarship will be visible and accessible to anyone interested in it. Contributors have done everyone a great service in putting their time, energy, and scholarly productivity into a non-traditional publication that, we all hope, will garner much wider readership and interest than it could otherwise. We also hope that the design of the website and the presentations of the essays strike a balance between scholarly authority and exploratory playfulness, to assure readers that the scholarship is of the highest quality, as we remain approachable to non-specialists in somewhat shorter and less detailed (but no less rigorous) essays than typically appear in scholarly journals. We have tried to balance an energetic aesthetic with entirely minimal essay presentations that keep the focus where it should be—the creative thinking and writing of our authors.

As we hope future workshops might adopt a similar open-access strategy, a brief quick look under the hood may be useful. We host our site with GitHub Pages, a well-documented platform that provides precisely the key functionality we need—an open, versioned repository for managing discrete texts—so that we can focus on the essays rather than the website infrastructure itself. Authors wrote in what was most comfortable for them (usually MS Word), but we then converted the files (fairly seamlessly, with pandoc) to Markdown, a plain-text editing language that avoids problems of proprietary file formats that change (and break) over time. Small editorial changes to essays are easily made to the online version, and records of those changes are automatically managed by GitHub, initially designed for programmers and their code, but which excels as an editorial platform. From a sustainability perspective, required resources are minimal: no hosting service to pay for, no platform installations to maintain, no special software required. The essays (and in fact the entire website) remain easily exportable.

Despite what we consider many successes, we fell short of our ideal plan. In the interest of learning from failure, and with hopes others will build on our experience, we want to share some of our lessons gleaned from the process. Part of the motivation for an online viewing platform (both pre- and post-conference), was...
How Do We Make the Future, cont.

to integrate images and other media, and to emphasize the design of scholarship from the outset. Several of our authors embraced this aspect, particularly the outstanding images and embedded video in Michelle Murphy’s set of essays, and Michael Gordin’s visual translation effects. Most of the essays, however, while usually including an image or two (because we insisted!), primarily followed a more traditional form. In retrospect, we needed to provide more encouragement and assistance during the first draft stage to better leverage our non-print publishing platform. This may even raise the question of whether graduate training in the humanities generally may benefit from encouraging multi-media writing in addition to long-form text-only essays.

Our original hope to sustain the energy of the workshop beyond its short logistical existence, and to widen the discussion beyond the academy, was to maintain an open-submission window so that even those not involved with the conference could contribute to the conversation after the initial rounds of essays were published. While our enthusiasm made such an editorial agenda seem not only desirable but obtainable, we realized as time went on and essays trickled in at various times, that we had not adequately planned for folding the requisite administrative, editorial, and publishing work into our already full schedules, especially as relatively junior scholars required to display productivity in more traditional venues.

Additionally, despite frantic and diligent note-taking, much of the insightful commentary, questions, and replies during the workshop did not make its way onto the website. Our conversations, of course, informed revised versions of the essays, and inspired a second round (or more) of essays from several participants. In retrospect, we should have prepared ahead of time, and discussed at the beginning of the workshop, how we might have made even more of the internal dialog of the workshop visible.

Even so, we believe that the Histories of the Future website largely serves our principal goal of highlighting the various analytical frameworks in the history of science, medicine, and technology, and their utility—if not necessity—for understanding the ways in which futures have been described and ultimately created, and how those processes continue to work and shape our collective futures. We hope, too, that the variety of essays will inspire more scholarship on the subject and will engage the widest possible readership with truly innovative and path-breaking scholarly work in new media.

Most importantly, we ask that you visit histsci.com and take a look around. Read an essay or two. Come back later, and read some more. They print out nicely, too, if you prefer to read on paper. Our success, despite having already assembled and edited what we think is an extraordinary collection of essays, depends on getting the word out and increasing the visibility of the essays. Please tell your friends! Of course we welcome any feedback, either about the individual essays, the site as a whole, or our publishing experiment. Send us an email or tweet about it: #histsci.

To the future,

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Member News


HSS members who have essays in these Proceedings include: (in alphabetical order) Pnina G. Abir-Am (Chemical Heritage Foundation), Ronald Brashear (Chemical Heritage Foundation), Kevin Fujitani (Ohio State University), Evan Hepler-Smith (Princeton), Jeremiah James (Ludwig-Maximilians-Universität (LMU) München), Jeffrey Johnson (Villanova University), Victoria Lee (Max Planck Institute for the History of Science), Mary-Jo Nye (Oregon State University), Carsten Reinhardt (Chemical Heritage Foundation) and Galina Shyndriayeva (King’s College, London). The Proceedings, which also include essays by historians of science from Japan, Korea, Australia, and Europe, were edited by Masanori Kaji, Yasu Furukawa, Horoaki Tanaka, and Yoshiyuki Kikuchi.

In May, Lindsay Alberts (Boston University) received her PhD from Boston University’s Department of History of Art & Architecture. Her dissertation, entitled “From Studiolo to Uffizi: Sites of Collecting and Display under Francesco I de’ Medici,” examined the political uses of collecting in late Renaissance Florence employed by the avant-garde alchemist and natural philosopher Grand Duke Francesco I. She looks forward to continued university teaching in the fall and devoting time to her first book project, which examines the Cappella dei Principi at San Lorenzo in Florence. In October, she will present a paper related to this project at this year’s Southeastern College Art Conference in Roanoke, Virginia.

Melinda Baldwin (Harvard University) will be an ACLS Oscar Handlin Fellow for 2016-2017 in Washington, D.C.

The U.S. Fulbright Program has awarded Darryl E. Brock (Central Connecticut State University) a Fulbright Scholar Award for the National University of Singapore (NUS) for spring semester 2017. Teaching as part of the NUS “Empire in Asia” thrust, he will focus on the history of science as related to modern China and global imperialism.

Janet Brown (Harvard University) and the History of Science Department at Harvard University are delighted to announce that three new faculty members will soon be joining the department.

Professor Gabriela Soto Laveaga will join in the fall of 2016 from the University of California, Santa Barbara. Gabriela’s research focuses on Latin American medicine and public health, and she will participate in an important realignment of the department in thinking more globally about our field.

They also welcome two early career scholars. Dr. Hannah Marcus (Stanford), will join in the fall of 2017 as Assistant Professor, with a focus on Early Modern Science; and Dr. Ben Wilson (MIT, and currently MPI) will also join in the fall of 2017, as Assistant Professor in Modern Physics.

Harold Burstyn is now Of Counsel at Furgang & Adwar LLP (www.furgang.com). He participated in the joint Arizona State University and Marine Biological Laboratory seminar in the History of Biology 18-25 May 2016 in Woods Hole.

Stephen Case (Olivet Nazarene University) represented the International Planetarium Society in April as the 2016 American ambassador for the Society’s “Two Weeks in Italy” teaching exchange program. Stephen presented a teacher workshop, public lectures,
and twenty-two student lessons on the history of stellar astronomy to over 480 Italian high school students in classrooms and planetariums in Assisi, Brescia, and Gorizia over the course of two weeks.

Renaissance Ethnography and the Invention of the Human: New Worlds, Maps and Monsters by Surekha Davies (Western Connecticut State University) was published by Cambridge University Press (UK) on 2 June 2016. Davies was awarded the Board of Regents of the Connecticut State Colleges and Universities system-wide Faculty Research Award for 2016. She will be a Visiting Scholar at the Max Planck Institute for the History of Science (Berlin) for three months in summer 2017.

Pascal Duris (University of Bordeaux, France) has published a book titled *Quelle révolution scientifique? Les sciences de la vie dans la querelle des Anciens et des Modernes (XVIe-XVIIIe siècles)* (What Scientific Revolution? Life Sciences during the Quarrel of the Ancients and the Moderns (16th-18th centuries)) (Hermann, 2016). He demonstrates that the “Quarrel” between the Ancients and the Moderns not only implicated writers and artists, but also concerned scientists: doctors, physiologists, naturalists, mathematicians, physicists, astronomers, & so on. The book helps scholars take a fresh perspective on the conditions for the emergence of modern science in the late 16th century and through the 17th century and provides insights into concepts such as “novelty,” “truth,” “reason,” and progress.

Pamela Flattau (Executive Director of Psychology of Science in Policy, Washington, DC), reported in the May/June 2016 issue of the Association for Psychological Science Observer magazine that the changes taking place in the structure of faculty appointments continue to fuel the emergence of multidisciplinary research and teaching in academia.

Melinda Gormley’s (University of Notre Dame), latest article, “Pulp Science: Education and Communication in the Paperback Book Revolution” was published this past January in Endeavour.

Anita Guerrini (Oregon State University) has been awarded a Standard Grant from the National Science Foundation for a new project on early modern skeletons and anatomical knowledge. She had three articles appear in March 2016: “The Ghastly Kitchen” in History of Science; “The Hermaphrodite of Charing Cross” in Humans in Experiments ed. Larry Stewart and Erika Dyck (Clio Medica series, Brill, 2016); and “The Human Experimental Subject,” in A Companion to the History of Science, ed. Bernard Lightman (Wiley, 2016). She will give a keynote talk, “Giants, Fossils, and Mythology in Early Modern France,” at the George Rudé Seminar in French History in Sydney, Australia in July.

Gerald Holton (Harvard University) is co-author with David Cassidy and James Rutherford of the book, *Comprendre la Physique*, which was published recently in Lausanne by Presses Polytechnique et Universitaires Romandes. Holton also published his recollections of Thomas Kuhn in his new article, “Steve’s Question and Tom’s Last Lecture,” in the book Shifting Paradigms, edited by Alexander Blum et al. and published by Edition Open Access in 2016. Holton also reports that he was elected this year to the Austrian Academy of Sciences.

Joseph E. Harmon (Argonne National Laboratory) along with Alan G. Gross recently published their book, *The Internet Revolution in the Sciences and Humanities* through the Oxford University Press.

Kristin Johnson (University of Puget Sound) and Erik Ellis organized the Columbia History of Science Group’s annual meeting in March at the Friday Harbor Laboratories (FHL) on beautiful San Juan Island in Washington State. Patrick McCray delivered a captivating
keynote address entitled “Re-Wiring Art: Engineers, Artists and the Forging of a New Creative Culture,” followed by a first-rate series of papers on Saturday, including Pierre Hale (University of Oklahoma) on “William Benjamin Carpenter on the Metaphysics and Physiology of Morals.” The 2017 CHSG meeting will be at the FHL from Fri & Sat, 2-3 March. For more information on next year’s meeting visit columbiahistoryofsciencegroup.org.

Kristin Johnson has also completed a historical novel on the period leading up to the Scopes Trial designed for use in courses on science and religion, the history of biology, eugenics, and science in the US between the world wars. The book is available for free at thenaturalhistoriananovel.com. Please let Kristin know if you use the book in a class (kristinjohnson@pugetsound.edu).


Pierre Laszlo (The University of Liège, Belgium and École Polytechnique, France) has published two papers on the history of chemistry in recent years. One is the account of a study trip, taken in the spring of 1933 by graduating chemical engineering students from the University of Clermont-Ferrand, in Central France, led by their mentor, Professor Léonce Bert. (Proceedings of the SFHST conference, Lyon, 28-30 April 2014, in press). The other paper describes how professors in the Institute of Chemistry in Liège were able to fill a glass blowing technical position immediately after WWII. (Bulletin for the History of Chemistry, 2015, 40(2), 95-102.)

Bruce Lewenstein (Cornell University), chair of the Department of Science & Technology Studies at Cornell, has been elected as Faculty Trustee on the Cornell Board of Trustees, for a four-year term. He will also serve as chair of the AAAS’s Section on General Interest in Science & Engineering in 2017. He recently completed two years as Speaker of Cornell’s Faculty Senate.

Bernard Lightman (York University) has edited a new introduction to the history of science entitled A Companion to the History of Science. It is published by Wiley Blackwell and contains forty chapters divided into four sections: Roles, Places and Spaces, Communication, and Tools of Science.


James E. McClellan III (Stevens Institute of Technology) has been appointed Professor Emeritus of History of Science in the College of Arts and Letters. He is hard at work on his last scholarly work, History and Numismatics: The Jetons of Old Regime France.

Ronald Mickens (Clark Atlanta University) and Charmayne Patterson have published a new article, “What is Science?” Georgia Journal of Science, Volume 74, Article 3 (2016).

In February 2016, Edward K. Morris (University of Kansas) founded the Center for the History of Behavior Analysis. Its vision
is to advance behavior analysis, nationally and internationally, through its history and historiography. Its goals are to cultivate and nurture the education and training, enrich and improve them, and communicate and disseminate them to behavior analysts, other scientists and scholars, and the public at large.

In May, the Center received a small grant from the Society for the Experimental Analysis of Behavior, “Digital Scholarship: Skinner and Watson,” to develop a searchable and retrievable collection of the works of B. F. Skinner and John B. Watson. The purpose is to encourage, foster, and promote research on their contributions—and the sources of their contributions—to the scientific, conceptual, and historical foundations of behavior analysis and psychology in general.

Carla Mulford (Penn State University) has recently received an award for excellence in teaching: the Malvin and Lea Bank Award for Outstanding Teaching in the Liberal Arts. She has also recently been promoted to Professor for English after being on sabbatical this year to work on her book manuscript in progress, *Benjamin Franklin’s Electrical Diplomacy*.

Agustí Nieto-Galan (Centre d’Història de la Ciència (CEHIC)) has published two new books: *Science in the Public Sphere. A History of Lay Knowledge and Expertise* (London: Routledge, 2016) and *Barcelona: An urban history of science and modernity (1888-1929)* (London: Routledge, 2016) (co-edited with Oliver Hochadel).

Laura Otis (Emory University) has published a new book, *Rethinking Thought: Inside the Minds of Creative Scientists and Artists* (New York: Oxford University Press, 2016). *Rethinking Thought* presents qualitative research on how the conscious experience of thinking varies from one individual to another, especially with regard to visual mental imagery and verbal language. The study features interviews with scientists, writers, and artists such as Temple Grandin and Salman Rushdie, as well as critical analyses of recent scientific studies on visual mental imagery and the relationship between language and thought.

On 1 April 2016, Thomas Potthast (University of Tübingen) took up office as Full Professor for Ethics, Philosophy and History of the Biosciences at the University of Tübingen, Germany.

As part of her Andrew W. Mellon Foundation Post-Doctoral Curatorial Fellowship at the Museum, Lynette Regouby (American Philosophical Society Museum) was the lead curator on the exhibition, “Gathering Voices: Thomas Jefferson and Native America,” which opened 15 April at the American Philosophical Society (APS) Museum in Philadelphia.

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In the fall, Dr. Regouby will join the Humanities Institute at the New York Botanical Garden as a Mellon Post-Doctoral Fellow for the academic year 2016-2017.

Joy Rohde (University of Michigan) has published “Social Science and Foreign Affairs,” in *The Oxford Research Encyclopedia of American History*, ed. Jon Butler (New York: Oxford University Press, 2016). The article provides a synthetic history of the role that social science has played in US foreign policy from the mid-19th century to the present. It is part of a new online, peer-reviewed initiative designed to provide rigorous long-form overview articles useful to researchers and instructors.

Martin Rudwick (University of Cambridge) has been given one of the “Science Excellence Awards” for 2016 by the International Union of Geological Sciences (IUGS). It is the Vladimir V. Tikhomirov Award, which is made, on the recommendation of the International Commission on the History of Geological Sciences (INHIGEO), for “outstanding original contributions to this field of Earth Sciences.” It is named in honour of a distinguished Russian pioneer in the history of the geological sciences and one of the founders of INHIGEO.
Jim Secord (University of Cambridge) has been awarded the 2015 Founders’ Medal of the Society for the History of Natural History. The Founders’ Medal is awarded to persons who have made a substantial contribution to the study of the history or bibliography of natural history.

In receiving the award Jim said, “It is a great honour to be awarded the Founders’ medal, as I have always aspired to the union of historical, bibliographical and scientific insight encouraged by the Society. The list of previous winners is remarkable. Several of them—particularly Joan Eyles, Martin Rudwick, and Gordon Herries Davies—I met as a fledgling historian of the earth sciences at the Charles Lyell Symposium in 1975, the very first academic conference I ever attended. I have come to know many of the others through meetings of this Society, through their writings, and as friends. It is of course a particular pleasure for me to remember Frederick Burkhardt, founder of the Darwin Correspondence Project. Fred always knew that natural history was for Darwin a cooperative enterprise, and for historians it needs to be the same.”

Carlos Eduardo Sierra C. (Universidad Nacional de Colombia) has recently published three new articles and presented at three recent conferences. The three articles are “La energía en la historia de la guerra: Antigüedad y Alto Medioevo,” in Revista Universidad de Antioquia (Colombia), N° 323 (January-March 2016); “New articles on history of Astronomy,” in Circular de la Red de Astronomía de Colombia, Nos 833, 835, 837, 839, 841, 843; and “La evanscencia del legado de Cajal,” in Revista Serrablo: Instituto de Estudios Altoaragoneses, Año XLV, N° 174 (March 2016). (Spain). The conference presentations, all of which are available on YouTube, were John Harrison y el cronómetro marítimo de alta precisión, Sociedad Julio Garavito para el Estudio de la Astronomía (Medellín), 16 April 2016 and Ciencia y tecnología en el Imperio Bizantino, Sociedad Julio Garavito para el Estudio de la Astronomía (Medellín), 6 February 2016; Ética e idoneidad científica en Clair Cameron Patterson: Un paradigma de la responsabilidad social del científico, Sociedad Julio Garavito para el Estudio de la Astronomía (Medellín), 11 June 2016.

Leo Slater (NSF) was recently appointed to the position of the National Science Foundation historian.

For the fall semester of 2016, David Spanagel (Worcester Polytechnic Institute) has been awarded his first sabbatical leave of his career, which he will be spending as a Visiting Researcher affiliated with Harvard University’s Department of the History of Science.

Frank W. Stahnisch (University of Calgary, Canada) was recently promoted to the rank of Full Professor in the Cumming School of Medicine as well as in the Faculty of Arts. He is jointly appointed in the Department of Community Health Sciences and the Department of History and holds the Alberta Medical Foundation/ Hannah Professorship in the History of Medicine and Health Care. In the summer of 2015, he also became a Research Fellow at the Centre for Military, Security, and Strategic Studies (an inter-departmental research center based in the Faculty of Arts, University of Calgary). For more information, see https://cmss.ucalgary.ca.

Einstein for Anyone: A Quick Read by David Topper (University of Winnipeg, retired) is the compact story of this famous man, from the smiling contrarian in his grade school picture to the nonconformist adult who refused to groom his hair. As such, it fills a gap: the need for a very short book on Einstein that gives a brief but up-to-date story of his life and thought, with a simple explanation of what he contributed to 20th century physics and beyond. Vernon Press 2015, 88pp, 9781622730391 Special discount for members quoting MBRDSCNT.

Virginia Trimble (University of California, Irvine) has been added to the editorial boards of the Journal for Astronomical History and Heritage.

**Peter D. Usher**’s (Penn State University) paper “Lancelot’s Nosebleed” (*Notes & Queries* 261:3, 2016; in press) shows that a passage in Shakespeare’s *The Merchant of Venice*, which previously had been glossed as gibberish, is really a compliment to the Gregorian and Hebrew calendars.

**Stephen Weldon, HSS Bibliographer, Promoted to Associate Professor at OU**

The University of Oklahoma’s Department of the History of Science proudly announces that effective 1 July 2016, Dr. Stephen Weldon has been promoted to Associate Professor.

From the beginning of Professor Weldon’s co-appointment as HSS Bibliographer and as Assistant Professor, it was clear that the production of the *Current Bibliography* was more than a contract assignment; it was a major undertaking that required both diligence and creativity. When he took on the project in 2002, Professor Weldon faced several major challenges. First, when he began as Bibliographer, he faced such an enormous backlog of work that he and his assistants had to produce, effectively, five annual bibliographies in less than three years. This challenge was made more difficult by the poor state of the various work processes and software involved in the production of the *CB* at that time. Thanks to Professor Weldon’s efforts, these processes and the software were revamped and modernized so that the *CB* soon matched the standards for other major bibliographic systems.

The second, and in many ways more difficult, challenge was the fact that the *CB* was still operating under the disciplinary categories created by George Sarton in 1913, while the history of science had both reconceptualized itself and become a worldwide enterprise. Over the past fourteen years, Professor Weldon has renovated the *CB* to such an extent that it scarcely resembles the previous version: new categories of classification and analysis that reflect areas of scholarship that did not exist in the early twentieth century; a new organization of data that allows users to drill down to materials that would have been impossible to find under the previous data design; new architecture standards that coordinate the History of Science, Technology and Medicine database with other scholarly databases, thereby enabling the fruitful interplay of different disciplines and systems; and perhaps most importantly, greater accessibility to the data for scholars around the world, making the *CB* an open access tool that helps level the playing field for scholars in less-developed as well as developed countries. In short, Professor Weldon has made remarkable strides in transforming the *CB* into a global portal to the history of science, writ large. To this end, Professor
Weldon won a $300,000 grant from the Sloan Foundation in 2014.

As in many disciplines, scholarship in the history of science is no longer defined by projects designed and undertaken by single scholars. For this reason, Professor Weldon’s long-term digital strategy has on the one hand drawn on the advice and contributions of practitioners around the globe and on the other hand sought to produce materials and tools that strengthen collaborative work in the future. This is particularly true of the World History of Science Online project (WHSO), in which Professor Weldon plays a vital role, and the use of social media as a means for historians of science to share materials and collaborate.

These are exciting projects that expand the research of every historian in our fields, but they also bring special challenges to master new techniques that take full advantage of the resources Professor Weldon and his colleagues have produced. For the Department, the challenge spotlighted a new problem that many of our fellow institutions face: how to measure and assess novel forms of research that do not fit the criteria that long have prevailed as standards in academic life. In response, the Department created the University of Oklahoma’s first policy on digital scholarship, covering projects that range from new ways to publish otherwise traditional texts to “born digital” multimedia and interactive works that are impossible to publish in print form. We now use this policy as a touchstone to encourage undergraduate and graduate students as well as faculty to consider digital scholarship in future work.

Most historians of science, technology, and medicine know Professor Weldon as the Society’s Bibliographer, and that project has been his central labor. HSS Executive Director, Jay Malone, who remembers well Professor Weldon’s hire as Society Bibliographer, commented on the outstanding improvements that Weldon has brought to the CB.

“My vision for the IsisCB is to transform a print bibliography into a research environment where users can explore the history of science from many different facets; eventually people should be able to go to the IsisCB and understand more about both the history of science and the discipline of history of science. In essence, I am rethinking “bibliography” in an age of linked open data, and I’ve even taken the word “bibliography” out of the name because I am building something more than a citation index. Of course, anyone looking at “IsisCB Explore” now will not see this yet because it still looks like a standard online bibliographic service. However, under the hood, it contains a structure that takes advantage of the current interactive, linked-data environment. It allows users to explore the network of internal relationships among people, institutions, publications, concepts and subjects—I will be making the information about that network much more visible in the coming revisions. Collections of citations make

The Isis Current Bibliography—In His Own Words

[HSS’s Bibliographer Stephen Weldon describes the future of the CB]

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it possible to build maps of the intellectual and social contours of the discipline. So, what do I hope people will be able to do beyond bibliographical searching when the project is completed? ...Quickly find out about authors, publishers, journals, and subjects with automated analytics showing such things such as publication timelines, disciplinary genealogy graphs, tables of institutional subject area strengths, and diagrams of author networks... See daily updates... Create their own profiles and add internal and external links... Comment on and tag objects in the system. In the end, it will be a curated research tool with community collaboration.”

Retirement Celebration for Alan Rocke

Dozens of friends and colleagues gathered this past 5 May at the Allen Memorial Medical Library at Case Western University to celebrate Alan Rocke as he retired from CWU. The three words that came up again and again as speakers described Alan were “generous,” “distinguished,” and “kind.” Congratulations Alan!

The 2016 Joseph H. Hazen Lecture on the History of Science

On 27 April Joseph Dauben delivered the History of Science Society’s Joseph H. Hazen Lecture at the New York Academy of Science, titled “Science and Art in China: Li Matou (Matteo Ricci), Lang Shining (Giuseppe Castiglione), and the Influence of Western Geometry and Mathematical Perspective on Early Qing Dynasty Mathematicians and Artists.” Dauben is the Distinguished Professor of History and History of Science at Herbert H. Lehman College (CUNY) and a member of the PhD Program in History at the Graduate Center of the City University of New York. He has been a leader in the history of science community in New York for decades, and has led numerous scholarly collaborations in North America, Europe, and Asia.

Professor Dauben’s lecture described the efforts of Jesuit missionaries to use mathematics, science, and art to convert elites in Qing dynasty China. Some aspects of this story are fairly well known, such as the triumph of European astronomy in a showdown with the Chinese and Islamic calendars over a 1629 eclipse. Professor Dauben took his large audience deep into this Jesuit project of conversion via mathematics.

The story was anchored by Matteo Ricci, who thought introducing Euclid to China would demonstrate the superiority of European mathematics and logic. It would follow inevitably that European religion must be superior, as well. Ricci and a local convert prepared a Chinese version of Euclid’s *Elements*, which had a mixed reception. Some parts seemed worth studying, though many of the axioms seemed absurd—how could a point (translated with a word meaning “brushstroke”) be a thing without any parts? Ricci’s mathematical evangelizing had the surprising result of stimulating the Chinese to pay more attention to their own mathematical tradition, instead of luring them to European ways.

Fascinatingly, the Jesuits also taught perspective drawing with a similar strategy. Mathematical perspective was unlike any existing Chinese...
artistic traditions, and it was thought that the ability to create depth on a flat surface would be a kind of mathematical propaganda. The Jesuits were particularly skilled in these techniques and used them extensively in the churches they built in China. This combination of mathematics and art would hopefully, like the calendar, show the superiority of all things Christian. Interesting tensions emerged, however. Perspective drawing was so different from Chinese traditions that it was seen as strange rather than impressive. Jesuit artists often modified their depictions of the gospel to remove shadows, for example, to make them seem more familiar to Chinese viewers. European perspective techniques do indeed appear in Chinese work of the time—though nearly only in paintings displayed within the Forbidden City. They were thus embraced, as the Jesuits intended, by the elites. But it was only by the elites, and European methods did not spread very far. The Jesuits saw the Emperor’s embrace of innovations such as perspective and the telescope as indicative of their power over him; the Emperor thought exactly the opposite. Mathematics was a useful tool, not a reason to change.

Professor Dauben closed with a reflection on how this story helps illuminate the classic “Needham question” regarding why modern science did not appear in China. The key, he said, was mathematics, though one needed to understand that mathematics was itself only one part of a complicated interplay of religion, social structure, pragmatic calculation, obscure translations, and artistic renderings. Indeed, it was exactly these connections that first drew Joseph Hazen to the history of science from his varied career in law, film production, and art collection. Professor Dauben’s presentation was a masterful illustration of the continuing relevance of the values supported by the Hazen lectureship.

The Joseph H. Hazen Lecture is made possible by a gift from Cynthia Hazen Polsky, daughter of Joseph Hazen. The lecture is supported by the History of Science Society; Metropolitan New York Section of the HSS; New York University’s Gallatin School of Individualized Study; Columbia University’s Colloquium for Science, Technology, Medicine and Society and University Seminar in History and Philosophy of Science; City University of New York’s PhD Program in History, and History of Science Lecture Series; and the New York Academy of Sciences Section for History and Philosophy of Science.

In Memoriam

Robert David Joseph
2 June 1939 — 9 May 2016

Robert (Bob) David Joseph, 76, of Honolulu, died peacefully at home on 9 May 2016, surrounded by loved ones. Born in New Castle, Pennsylvania, he was a Professor Emeritus in Astronomy at the University of Hawaii at Manoa. Joseph retired at the end of December 2015, and was awarded the Regent’s Award for Excellence in Teaching—a real boon for a researcher! And finally, Asteroid 7159 was named in his honor. He is survived by his wife, Judy Joseph; son, Jamie Joseph; daughter, Susan Sanger; daughter-in-law, Katharine Smales; brothers, Edward and Paul Joseph; grandson, Felix Joseph; and dog, Coco Puff Joseph. A celebration of his life was held at Calvary by the Sea in Aina Haina, on Sunday, 5 June. In lieu of flowers, the family asks for donations to the Oahu Choral Society and/or FACE (Faith in Action and Community Equity).

Plan Ahead

Future HSS Meetings

Atlanta: 2016, 3-6 Nov.
Joint meeting with PSA and the Society for Literature, Science and the Arts

Toronto, Ontario: 2017, 9-12 Nov.

Joint meeting with PSA

Utrecht, The Netherlands: 2019, Early August!
Galileo’s signed copy of *Sidereus Nuncius*, a 1/10th scale model of the Tower of Pisa, and an 18th century pocket sundial were some of the materials on view for attendees of this year’s Midwest Junto for the History of Science, held in Norman, at the University of Oklahoma, 1-3 April. The 59th meeting of the Junto was hosted by the Department of the History of Science and the History of Science Collections, with generous support provided by our Midwest neighbor, the Linda Hall Library in Kansas City. Over sixty participants, comprising a healthy mix of faculty and graduate students (and even a number of undergraduates) attended the presentations.

This year’s Junto was the sixth one to be held in Norman, and took place just a few months after a major renovation to the University of Oklahoma Libraries’ special collections space and home of the OU History of Science Collections on the fifth floor of the Bizzell Memorial Library. The renovation created a dedicated exhibit space and framed the launch of our first major exhibition, *Galileo’s World*, a campus-wide endeavor of 20 exhibits in seven locations across all three OU campuses for the university’s 125th anniversary.

Junto attendees got their first look at the renovation and the *Galileo’s World* exhibition during a reception on Friday evening, sponsored by the University of Oklahoma Libraries. The reception was held in our newly enlarged lobby, an expansive, welcoming space from which visitors can find their way to our new Exhibit Hall on one side, or make their way to the Duane H. D. Roller Reading Room on the other side. The Reading Room is named after the first Curator of the OU History of Science Collections and one of the Junto founders. Posters chronicling past visiting speakers were on display here, showcasing OU’s deep history and connections to the field.

Hunter Heyck, Chair of the Department of the History of Science, welcomed attendees, who included several first-timers, as well as many Junto veterans. Kerry Magruder, Curator of the History of Science Collections and *Galileo’s World*, gave an overview of the new exhibit space and associated initiatives.

Renovation of the exhibit space in the libraries to showcase special collections materials was a key goal of *Galileo’s World*. Another goal was the fostering of collaboration across campus and across disciplines.

Throughout the weekend, activities and events extended beyond the library to multiple sites, showcasing the contributions of some of our *Galileo’s World* partners: the Sam Noble Museum of Natural History, the Fred Jones Junior Museum of Art, and the National Weather Center. Graduate students from the
Department of the History of Science who were heavily involved in *Galileo's World* planning and outreach activities led exhibit tours at Sam Noble (James Burns - *Galileo and the Microscope*) and Fred Jones (Brent Purkaple - *Artful Observation of the Cosmos*).

The individual sessions for paper presentations were held in the OU Libraries’ Peggy V. Helmerich Collaborative Learning Center, and continued through Sunday morning. Linda Hall Library generously sponsored the coffee breaks and provided goody bags for participants (Ben Gross did a great job of tweeting).

For over five decades, the Junto has provided an opportunity for graduate students to present their work in a supportive and congenial setting, encouraging them to meet faculty and students from other programs. This year, papers were presented by students from Creighton University, New York University, Oklahoma State University, the University of Notre Dame, the University of Oklahoma, and the University of Wisconsin-Madison. Faculty from the University of Oklahoma chaired the six paper sessions, and one contributed a paper to one of the sessions. As is typical for the Junto, the papers reflected a wide range of topics, time periods, and approaches: astronomy and mathematics in the early modern period; histories of medicine, public health and human difference; and early-20th century archaeology, scientific networks & the public arena. *(For the full program see the Junto website.)*

Saturday evening’s festivities were held in the atrium of the National Weather Center. Attendees enjoyed conversation and meals at tables surrounded by display cases of rare books from the History of Science Collections, meteorological instruments, and an exhibit on Oklahomans and Space.

Each year the Junto organizing committee invites a scholar to give the Stuart Pierson Memorial Lecture at the annual banquet. This year’s speaker, Aparna Nair, the newest member of the faculty of the Department of the History of Science, shared some of her work in disability studies and colonial history in a talk titled “From Oriental Braille to Bharatiya Braille: Technologies for the Blind, Imperial Authority and Missionary Schools in British India, 1850-1940.”

During the morning session on Sunday, participants recognized long-time Junto member Marjorie C. Malley (1941-2016) for her contributions to the organization. Marjorie was involved with the Junto for many years, as organizer, contributor and participant. *(An In Memoriam on Marjorie can be found here.)*

During the business meeting incoming Junto President Kathleen Sheppard announced that next year’s meeting will take place at Indiana University in Bloomington. This meeting promises to be a significant event, as it will be the 60th gathering of the Midwest Junto for the History of Science.

As a member of the local organizing committee, I would like to thank my colleagues at the University of Oklahoma and the Linda Hall Library, the Junto officers, and everyone who helped make the meeting a success with their contributions and participation.
The Lone Star History of Science Group held its twenty-ninth annual meeting on 15 April 2016 at the University of Texas in Austin. The gathering was hosted by Bruce Hunt of UT.

The Lone Star speaker this year was Conevery Bolton Valencius of the University of Massachusetts–Boston. She spoke on a topic of strong recent interest, particularly in Texas, Oklahoma, and her own native state of Arkansas: “Earthquakes, Fracking, and Public Perception of Science.” What, she asked, can we—as residents, as taxpayers, as voters, or as scholars—make of recent tremors that have shaken formerly quiet areas in mid-continent? How can we evaluate energy technologies in the context of rapidly-emerging and contentious science? Drawing on very recent developments in both seismology and petroleum engineering, she suggested that frameworks from the history of science can help us sort out elements of public discussion and political debate about “frackquakes”: earthquakes increasingly linked with hydraulic fracturing and its associated waste disposal technologies.

After some lively discussion, the group walked to Isalia’s Restaurant and enjoyed a very tasty Tex-Mex dinner. Isalia’s opened just a few months ago and doesn’t yet have a liquor license, but a visit to a nearby convenience store remedied that, as several Lone Star members brought their own libations.

Each spring, the Lone Star Group draws together historians of science, technology, and medicine from around Texas to discuss their shared interests and enjoy a friendly dinner. Its constitution, adopted over drinks in an Austin restaurant in 1988, provides that there shall be “no officers, no by-laws, and no dues,” and the group remains resolutely informal. More information about the Lone Star group, including a list of past meetings and some photographs, can be found at http://lonestarhistoryofsciencegroup.blogspot.com/.

The next Lone Star meeting, to be hosted by Tony Stranges of Texas A&M, will be held in College Station in March or April 2017. Anyone interested in being added to the Lone Star e-mail list should contact Bruce Hunt of the University of Texas History Department at bjhunt@austin.utexas.edu.
News from the Profession

Chinese Reader Project—
A Note from HSS Past President Angela Creager

You may remember the call for nominations last fall for outstanding articles on history of science, medicine and technology (with publication dates ranging from 1990–2015) to be translated and published in Chinese. After Council approved joining with the MPIWG in the venture, I worked closely with Dagmar Schäfer, Hansjakob Ziemer, and Tanja Neuendorf at the Max Planck Institute for the History of Science (MPIWG) to coordinate the committee that selected the articles for translation. (More detail may be found at [https://www.mpiwg-berlin.mpg.de/de/node/14435](https://www.mpiwg-berlin.mpg.de/de/node/14435).)

We invited several other learned societies in the targeted fields to participate in nominating and selecting the articles. The reader selection committee was comprised of representatives from each of the participating societies as well as the directors of the MPIWG:

- David Beck (British Society for the History of Science)
- Angela N. H. Creager (Coordination, HSS)
- Christopher Cullen (Div of the History of Science and Technology/IUHPST)
- Lorraine Daston (MPIWG)
- Yao Dazhi (Society for the History of Technology)
- Olga Elina (European Society for the History of Science)
- Florence Hsia (HSS)
- Jürgen Renn (MPIWG)
- David S. Jones (American Association for the History of Medicine)
- Dagmar Schäfer (MPIWG)
- Carsten Timmermann (Society for the Social History of Medicine)
- Hansjakob Ziemer (Coordination, MPIWG)

We worked from a pool of almost 225 nominated essays, and our long list—which we all read and ranked—was 80 articles! In the end, the top-scoring articles comprised a surprisingly good set, in terms of field, authorship, time period, and region. I have appended [below] the list of 12 articles. The committee members found our work very rewarding, and each of the selected authors was delighted to be included. Greg Macklem deserves particular thanks for hosting our selection committee’s Adobe Connect meetings.

Here are the articles we selected. They will be translated in summer and fall 2016, to be published in 2017:


I have organized a roundtable for the fall HSS meeting in Atlanta to discuss this reader project and the other possibilities for using translation to connect scholars and readers in different regions of the world and language communities. The panel includes three members of the committee (Dagmar Schäfer, Florence Hsia, and Lorraine Daston) and two prominent scholars working in Latin America and Asia (Edna Suárez-Díaz and Kevin Chang). Please feel free to join our conversation!

**Digital Primary Sources**

The HSS’s strategic plan calls for a renewed emphasis on digital materials. So we are pleased to see that the American Historical Association has added a new digital resource to the *American Historical Review*. This new feature serves as a preliminary guide to freely accessible online collections of primary sources. The sites identified here draw on the expertise of *AHR* staff and the Board of Editors, but they also solicited submissions from a small group of readers to test a larger crowdsourcing initiative that will drive the list of archives in the future. AHA intends to add to this section with each issue, with the complete list to be available online at [historians.org/digital-primary-sources](http://historians.org/digital-primary-sources). Readers are encouraged to use the online form to submit their own favorite primary-source archival collections.

**UNESCO and L’Oréal Foundation Launch Manifesto to Promote Gender Parity in the Sciences**

Paris, 25 March—A manifesto for women in science was launched in Paris at the close of Thursday’s L’Oréal-UNESCO For Women in Science award ceremony, which recognized five outstanding scientists and 15 young researchers. The Manifesto aims to draw attention to the need to ensure gender parity in science.

The Manifesto sets out to improve women’s access to science at all levels and in all disciplines. Its first signatories were Irina Bokova, the Director-General of UNESCO, Jean-Paul Agon, Chairman and Chief Executive Officer of L’Oréal and head of the L’Oréal Foundation, and Elizabeth Blackburn, President of the L’Oréal-UNESCO Jury.

“The UNESCO Science Report shows that the disparities between men and women are still very considerable,” said Ms Bokova. “More equality and parity in the sciences would create more opportunities to attain scientific excellence, which is part of UNESCO’s mission.”

“Women and their discoveries are needed in our fast-changing world as never before,” said Mr Agon. “With the For Women in Science programme, the L’Oréal Foundation is committed to promoting women scientists who will change the world. We are determined to fight on their side, for science, to build a better world.”

The Manifesto @4womeninscience promotes a six-point agenda:

1. Encourage girls to explore scientific career paths,
2. Break down the barriers that prevent women scientists from pursuing long-term careers in research,
3. Prioritize women’s access to senior positions and leadership positions in the sciences,
4. Celebrate with the general public the contribution that women scientists make to scientific progress and to society,
5. Ensure gender equality through participation and leadership in symposiums and scientific commissions, such as conferences, committees and board meetings,
6. Promote mentoring and networking for young scientists to enable them to plan and develop careers that meet their expectations.
Over the past 18 years, the L’Oréal-UNESCO For Women in Science program has been celebrating women scientists from all over the world. Each year, it distinguishes five women researchers from every part of the globe for their exceptional discoveries and awards 250 fellowships to women researchers from 112 countries who are in the early stages of their careers.

To sign the Manifesto please visit http://www.fwis.fr/en/manifesto

History of Science and the UN

HSS member Hans Haubold reports that educational curricula that were developed from 1998 to 2003 to be used for education, research, and applications in seven UN-affiliated Regional Centres for Space Science and Technology Education drew on the work of Lewis Pyenson. Please see (http://www.unoosa.org/oosa/en/ourwork/psa/regional-centres/index.html).

Division of the History of Science and Technology Prize for Young Scholars

The deadline for applications to the DHST Prize for Young Scholars is approaching: it is on 31 August 2016. Applications should be made online at: http://www.hpdst.gr/youngscholarsprize

COSSA News: 2016 Golden Goose Awards Choose Landmark “Add Health” Study

The researchers behind the landmark National Longitudinal Study of Adolescent Health Study, otherwise known as Add Health, have been chosen to receive the first of the 2016 Golden Goose Awards. The study, conceived by Drs. Peter Bearman, Barbara Entwisle, Kathleen Mullan Harris, Ronald Rindfuss, and Richard Udry in the late 1980s and early 1990s while at the University of North Carolina at Chapel Hill, is a federally-funded study designed to “illuminate the impact of social and environmental factors on adolescent health.” The Award honors “scientists whose federally-funded work may have seemed odd or obscure when it was first conducted but has resulted in significant benefits to society.” Add Health findings have helped to identify major determinants of health and health behaviors during the transition from adolescence to early adulthood. The study followed its original nationally-representative cohort for more than 20 years. Add Health “combines longitudinal survey data on respondents’ social, economic, psychological and physical well-being with contextual data on the family, neighborhood, community, school, friendships, peer groups, and romantic relationships, providing unique opportunities to study how social environments and behaviors in adolescence are linked to health and achievement outcomes in young adulthood.” It has provided insights into the ways that families, schools, neighborhoods, and peers can influence positive health outcomes. This insight also led to better understanding of negative outcomes and behaviors, such as violent behavior,
drinking, illegal drug use, smoking, and sexual behavior. A 1998 COSSA Congressional seminar, What Do We Know About Adolescent Health?: Findings from the National Longitudinal Study of Adolescent Health, allowed the researchers to share some of the study’s initial findings with Congress. The study’s name was recently changed to the National Longitudinal Study of Adult Health.

The researchers, along with two other teams of still-unnamed Golden Goose Award recipients, will be honored at the fifth Golden Goose Award Ceremony in September. The Consortium of Social Science Associations (COSSA) is a sponsor of the awards.

COSSA Congressional News: Funding Requests for Social and Behavioral Science Agencies

Over the past several weeks, Members of Congress have been signing their names to “Dear Colleague” letters, formal requests to the House and Senate appropriations committees for specific funding levels for various federal agencies. COSSA has been tracking letters in support of strong funding for the agencies important to the social and behavioral sciences on their funding updates page. COSSA appreciates the efforts of all of the Members who have signed on to the letters.

In addition to the requests for specific appropriations levels, a bipartisan letter in the House reaffirms support for the National Science Foundation’s “current practice of setting national scientific research priorities, investing in all disciplines of science, and using the merit review systems for determining which grant proposals to fund.” A letter in the Senate urges appropriators to include funding for the Centers for Disease Control and Prevention to conduct research on the causes and prevention of gun violence.

On 22 March, the House Science, Space and Technology Subcommittee on Research and Technology held an oversight hearing to discuss the fiscal year (FY) 2017 budget request for the National Science Foundation (NSF). NSF Director France Córdova and Chair of the National Science Board, Dan Arvizu, testified before the Subcommittee. Rep. Barbara Comstock (R-VA) chaired the hearing.

In his opening statement, Ranking Member Daniel Lipinski (D-IL), a PhD political scientist, expressed the importance of getting more people to understand the critical role that NSF plays, especially across all disciplines of science. In addition, and noting that the discussion could turn to the issue of priority setting among NSF’s research directorates, Lipinski quoted House Commerce, Justice, Science and Related Agencies Appropriations Subcommittee Chairman John Culberson (R-TX) who stated during his Subcommittee’s hearing last week that he does not wish to appropriate specific funding levels for each of NSF’s individual directorates, instead leaving the decision to the agency. That statement was directed at full Science Committee Chairman Lamar Smith (R-TX), who has been a vocal critic of federal support for social and behavioral science research and has called for major cuts to social and behavioral science research through his America COMPETES Reauthorization Act (H.R. 1806).

More than 300 Social Science Students Selected as NSF Graduate Research Fellows

The National Science Foundation (NSF) recently announced the 2,000 winners of the annual Graduate Research Fellowship (GRF) program competition. Among the 2016 winners are 311 social and behavioral science researchers from across the US. The GRF program provides three years of financial support over a five-year fellowship period for graduate study that leads to a master’s or doctoral research degree in a STEM field, including social science. It is one of NSF’s flagship programs aimed at fostering the next generation of the STEM workforce and ensuring diversity within the workforce.

The 2,000 awardees were chosen from about 17,000 total applications. The winners in
the social and behavioral sciences come from the following disciplines and fields of study: psychology (136), archeology/anthropology (57), economics (31), sociology (30), political science (20), geography (14), linguistics (8), history/American studies (3), international relations (3), law and social science (2), communication (2), urban and regional planning (2), decision making/risk analysis (1), peace studies (1), and natural resources (1).

Academic Women Now—A Message from HSS Member Aileen Fyfe

Yesterday, I was part of the team launching the booklet “Academic Women Now: Experiences of mid-career women in Scotland” at the Royal Society of Edinburgh. The brochure aims to facilitate and inspire further discussion and study about the career progression of women in different disciplines across the entire range of academic disciplines. We think it is unusual, possibly unique, among these types of publication because it does not focus only on the sciences, but includes the humanities and social sciences.

It showcases the careers of some of the academic women in the Young Academy of Scotland. They provide a fantastic window onto the career paths of current mid-career women in academia, and show us what academia looks like for women now. It offers a set of role models for early career researchers, many of whom still harbor doubts about whether academia is a good career for women.

Therefore, I urge you to circulate the electronic version of the booklet to your PhDs and postdocs—to those who are wondering whether or not they want to stay on in academia. Our booklet both demonstrates what academic career paths look like, but also the diversity of ways in which these academics have developed their careers and (in many cases) combined them with family life. (And it’s surely relevant beyond Scotland—there are quite a few North Americans now working in Scottish universities!)


AHRQ Accepting Advisory Council Nominations

In November 2016, seven vacancies will open on the National Advisory Council for Healthcare Research and Quality, the advisory body to the Agency for Healthcare Research and Quality (AHRQ). The council is seeking nominations for new members who have expertise in: “(1) The conduct of research, demonstration projects, and evaluations with respect to health care; (2) the fields of healthcare quality research or health care improvement; (3) the practice of medicine; (4) other health professions; (5) representing the private healthcare sector (including health plans, providers, and purchasers) or administrators of health care delivery systems; (6) the fields of health care economics, information systems, law, ethics, business, or public policy; and, (7) the representation of the interests of patients and consumers of health care.” More information is available in the Federal Register notice.

New Academies Study on Advancing Social and Behavioral Science within the Weather Enterprise

The National Academies of Sciences, Engineering and Medicine has announced a new study, “Advancing Social and Behavioral Science Research and Application within the Weather Enterprise.” The goal of the study is to “to develop a framework for generating and applying social and behavioral science (SBS) research within the context of meteorology, weather forecasting, and weather preparedness and response.” The Academies is particularly interested in candidates with expertise in the following fields: weather forecasting, meteorological research, behavioral economics, communication research, decision making, risk
CNDRA announces the launch of *A Liberian Journey*

The Liberian Center for National Documents and Records Agency (CNDRA) is pleased to announce the launch of a new public history website, *A Liberian Journey: History, Memory, and the Making of a Nation*. *A Liberian Journey* is meant to inform, raise questions, and invite stories about a transformational moment in Liberia’s past by making historical sources available for the first time in one place related to a 1926 Harvard scientific expedition to Liberia. The website features a pilot exhibit on Chief Suah Koko—a noted woman leader in Liberia’s history—along with digital collections containing nearly 600 photographs, more than two hours of motion-picture footage, oral histories, and documents linked to an interactive map. This effort marks the beginning of a recollection of Liberia’s lost history and is a very important step in reawakening the Liberian national consciousness.

In 1926, Firestone Tire & Rubber Company secured a ninety-nine year lease for up to one million acres of land from the Liberian government to establish one of the world’s largest rubber plantations. To help the company understand the conditions and challenges it faced, Firestone sponsored a Harvard team of scientists and physicians to conduct a four-month-long biological and medical survey of Liberia’s interior. Loring Whitman, a Harvard medical student, served as the expedition’s official photographer.

The motion picture record Whitman gathered is the earliest known surviving motion picture footage of Liberia. The moving images, along with hundreds of still photographs that appear in this digital collection, give a view of Liberia shaped by an early-twentieth-century Western world view of the American scientists. At the same time, the footage and photographs offer a valuable historical record of the peoples, cultural traditions, and landscapes of Liberia at a time of rapid economic, cultural, and environmental change.

The images in *A Liberian Journey* do not speak for themselves. CNDRA invites visitors to explore and then share their own meaningful stories, photographs, or documents about Liberia’s past, sparked by the materials found on this website. Plans are underway to work with educators in Liberia’s high schools and colleges to implement the site as a teaching tool and to expand the virtual exhibits to give voice, meaning, and historical context to the sources within. *A Liberian Journey* is designed to be accessible via mobile phones and in areas with limited internet connectivity.

*A Liberian Journey* was made possible through a partnership with CNDRA, the Roy Rosenzweig Center for History and New Media at George Mason University, Indiana University Liberian Collections, and the University of Wisconsin-Madison, with generous support from the National Science Foundation.

Huntington’s Disease Pioneer Delivers Inaugural Hermann J. Muller Award lecture at IU

A leading geneticist and neuropsychologist whose research led to the identification of the Huntington’s disease gene spoke at Indiana University Bloomington (IU) as the inaugural recipient of the Hermann J. Muller Award for Contributions to Our Understanding of Genes and Society.

Nancy Wexler, president of the Hereditary Disease Foundation and Higgins Professor of Neuropsychology in the Departments of Neurology and Psychiatry at Columbia
University, delivered the lecture during the award ceremony on 25 April. The event was open to the public.

The award is named in honor of Hermann J. Muller, who won the 1946 Nobel Prize in Physiology or Medicine while serving on the IU faculty from 1945 to 1964. Muller greatly expanded understanding on the structure of genes, how they work and how they are modified by mutations. He was also interested in the role of genetics in society.

“Hermann Muller’s massive contributions to the field of genetics and its societal impact continue to influence much of today’s work in this field,” said Michael Lynch, IU Distinguished Professor of Biology and chair of the Hermann J. Muller Award committee. “His two decades at IU Bloomington, along with that of several other key colleagues, marked the golden age of genetics on this campus, which continues to influence much of the biology department’s research and international reputation in this area.

A highly recognized expert in her field, Wexler is internationally known for her role in the discovery of the location of the gene that causes Huntington’s disease. Her research has also led to the discovery of the genes responsible for familial Alzheimer’s disease, kidney cancer, two types of neurofibromatosis, amyotrophic lateral sclerosis and dwarfism.

Wexler’s work on Huntington’s disease intensified in 1979 when she led a research team to Venezuela to collect genetic information from the world’s largest family with Huntington’s disease—now numbering over 18,000 family members over 10 generations—which began a 24-year odyssey into the study of the genetic origins of the disease. Her efforts were inspired in part by her father, Hereditary Disease Foundation founder and psychologist Milton Wexler, and her mother, who had a master’s degree in biology. Her mother died from Huntington’s disease.

In addition to her work on genetic disease, Wexler provides leadership to numerous governmental groups on creating guidelines to handle the extremely sensitive information yielded by genetic testing. She is a member of the Advisory Group for Human Gene Editing, which counsels the presidents of the National Academy of Sciences and National Academy of Medicine, and the National Academy of Medicine’s Evidence Base for Genetic Testing Committee.

The title of Wexler’s lecture was “Mendel, Muller, Morgan, Mom and Me: An Ever-expanding Voyage of Discovery.” It discussed Muller’s research in fruit flies at IU, which proved that genes reside in specific homes on chromosomes and that their inheritance is governed by a series of key principles first described by Austrian scientist Gregor Mendel in 1866.

Today, the IU Department of Biology plays a major role in the study of fruit flies through resources such as the Drosophila Stock Center, which provides thousands of genetically modified flies to research laboratories around the world, and FlyBase, a major database on drosophila genetics in molecular biology.

Muller’s biographer, Elof Axel Carlson, presented a brief overview of Muller’s life at the event. A former graduate student of Muller’s at IU, Carlson spent the majority of his career at the Stony Brook University, where he achieved the rank of Distinguished Teaching Professor of Biochemistry and Cell Biology. He is currently a visiting scholar at the IU Institute for Advanced Study.

The Muller award and lecture series are intended to recognize luminary international geneticists whose discoveries, like Muller’s, have made or are making a significant impact on the field of genetics and society. Awardees are selected by a committee of faculty at IU.

**Consortium Appoints New Fellows**

The Consortium for History of Science, Technology, and Medicine has announced their new fellows for 2016-2017. The applications were read by 34 librarians and archivists from the 24 member institutions as well as 23
News from the Profession, cont.

Historians from around the world. These readers awarded one NEH postdoctoral fellowship, two dissertation writing fellowships and 12 research fellowships. Together, these fellows will make about 60 research trips to the collections of member institutions.

- **Leah Aronowsky**, Harvard University Research Fellow
  “Configuring ‘Life’ in the Biosphere, 1950-2000”

- **George Aumoithe**, Columbia University Research Fellow

- **Sarah Basham**, University of British Columbia Dissertation Writing Fellow
  “Rethinking the Ontology of Chinese Encyclopedias: The Life and Times of Treatise on Military Preparedness (1621)”

- **AJ Blandford**, Rutgers University Research Fellow
  “Labor and the Visualization of Knowledge in American Geological Surveys”

- **Nicholas Bonneau**, University of Notre Dame Research Fellow
  “Unspeakable Loss, Distempered Awakenings: North America’s Invisible Throat Distemper Epidemic of 1735-1765”

- **Melissa Charenko**, University of Wisconsin-Madison Research Fellow

- **Rosanna Dent**, University of Pennsylvania Fellow-In-Residence

- **Betsy Frederick-Rothwell**, University of Texas, Austin Research Fellow
  “Inside Out: Office Buildings and the Hybrid Nature of Space, 1870-1930”

- **Louis Gerdelan**, Harvard University Research Fellow
  “Calamitous Knowledge: Understanding Disaster in the British, Spanish and French Atlantic Worlds, 1666-1755”

- **Alison Laurence**, Massachusetts Institute of Technology Research Fellow

- **Christine Peralta**, University of Illinois, Urbana-Champaign Research Fellow

- **Alicia Puglionesi**, Johns Hopkins University NEH Postdoctoral Fellow
  “The Astonishment of Experience: Americans and Psychical Research, 1885-1935”

- **Tricia Ross**, Duke University Research Fellow
  “Care of Bodies, Cure of Souls: Medicine and Religion in Early Modern Germany”

- **Michelle Smiley**, Bryn Mawr College Dissertation Writing Fellow
  “Becoming Photography: The American Development of a Medium”

- **Angela Smith**, Austin Community College Research Fellow
  “The Romantic Roots of Evolution in Scotland”

- **Oscar Moisés Torres Montúfar**, El Colegio de México Research Fellow
  “Miners, Oilmen and Chemists: Globalization and Technology in the Mexican Sulphur Industry (1933-1972)”

Latest Dissertations
The latest dissertations from the issues 76-6 A and B are now listed on the HSS website. ProQuest has altered how they put out their
individual issues. No longer do they correlate to one month, so the dating is more random. Thus titles will range from 2016—yes they have some 2016 dates—back into the 1930s.

**Seeking Contributions for an Encyclopedia**

ABC-CLIO seeks contributors for a 4-volume encyclopedia on history’s most important technologies and inventions. A number of entries have already been written, but many await a suitable scholar. ABC-CLIO offers contributors who write more than 10,000 words of entries a print copy of the encyclopedia and a check in US dollars. Inquires may be directed to Chris Cumo at ccumo@juno.com.

**Historian Joins Group That Aims to Advocate for the Humanities Nationally**


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**ISHPSSB & ABFHİB 2017 Meeting**

*São Paulo, Brazil*

*16 to 21 July 2017*

The 2017 Meeting of the International Society for History, Philosophy and Social Studies of Biology (ISHPSSB) will be held conjointly with the 2017 Brazilian History and Philosophy of Biology Meeting, promoted by the Brazilian Association of Philosophy and History of Biology (Associação Brasileira de Filosofia e História da Biologia – ABFHİB).

The **ISHPSSB & ABFHİB 2017 Meeting** will happen at the Institute of Biosciences of the University of São Paulo, in the city of São Paulo, Brazil. Researchers and graduate students are welcome to submit papers in English for presentation at this joint meeting.

**Deadline for sessions, papers and poster proposals:**

1 October 2016 to 15 January 2017


E-mail: ishpssb.2017@gmail.com

We are looking forward to seeing you in São Paulo!
Atlanta November 2016.  
**Workshop on Writing the Transnational History of Science and Technology**  
**Call for Papers**

A partially-funded one-day workshop will be held at the School of History and Sociology of the Georgia Institute of Technology from noon on 2 November to noon the next day. The campus is about a mile from downtown Atlanta where HSS will hold its annual meeting beginning on 3 November 2016.

Is transnational history just a fad, or does it pose important new questions for historians of science and technology? What is the place of the national in the transnational? What are the intellectual and social costs of writing transnational history? How does transnational history of science and technology intersect with other histories e.g. of colonialism, imperialism, global history? By combining theoretical reflection with empirical case studies this workshop will provide a space for extended debate on the transnational turn and its significance for historians of science and technology. A comprehensive position paper will be circulated to participants closer to the time to help give shape to the discussions. Please write john.krige@hsoc.gatech.edu to receive a copy.

Interested persons should submit abstracts of some 200 words no later than **30 July 2016**. Selected papers must be submitted for pre-circulation no later than 30 September 2016.

Funding is available for up to 12 participants. It will cover transfer from the Atlanta airport to the Georgia Tech campus, the night of Wednesday, 2 November 2016 in the Georgia Tech Hotel and meals and other incidental expenses during the duration of the workshop.

No financial support is available for travel to Atlanta.

Non-funded participants are welcome to join the discussion at their convenience.

In consultation with the participants, and subject to merit, a selection of papers will be published in an edited collection. An advance contract for publishing a volume focusing on the transnational circulation of knowledge has been signed with Amherst College Press.

For submissions and further information please contact john.krige@hsoc.gatech.edu (www.johnkrige.com)

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