

HPS&ST Note

February 2016

Introduction

This HPS&ST monthly note is sent direct to about 6,600 individuals who directly or indirectly have an interest in the connections of history and philosophy of science with theoretical, curricular and pedagogical issues in science teaching, and/or interests in the promotion of more engaging and effective teaching of the history and philosophy of science. The note is sent on to different HPS lists and to science teaching lists.

The note seeks to serve the diverse international community of HPS&ST scholars and teachers by disseminating information about events and publications that connect to HPS&ST concerns.

Contributions to the note (publications, conferences etc.) are welcome and should be sent direct to the editor: Michael R. Matthews, UNSW, m.matthews@unsw.edu.au .

‘The Contribution of HPS to Science Literacy and Policy’, Boston University, February 26-27, 2016.

The two-day conference and workshop is part funded by the US NSF and sponsored jointly by Boston University Centre for History and Philosophy of Science and Boston University School of Education.

The programme includes:

- Fostering Scientific Literacy through the Development of Epistemic Practices
Gregory Kelly College of Education, Pennsylvania State University
- What Do We Need to Know about Embryos, and Why it Really Matters?
Jane Maienschein, Center for Biology & Society, Arizona State U. and Marine Biological Lab
- Teaching Ecological Citizenship and Sustainable Living in the Social Studies Classroom
Jay Shuttleworth College of Education, Long Island University, Brooklyn
- How I Learned to Stop Worrying about Making Little Scientists & Love Persuasion: K-12 Science Literacy
Fouad Abd-El-Khalick College of Education, University of Illinois at Urbana-Champaign
- Engaging Good Climate Citizens
Andrew Light Philosophy and Public Policy, George Mason University and World Resources Institute
- Teachers as Moral Agents? The Challenges of Teaching about and for the Environment
Li-Ching Ho School of Education, University of Wisconsin-Madison
- Philosophical Implications of Understanding Citizens as Science Consumers
Rachel A. Ankeny School of Humanities, University of Adelaide

Inter-Divisional Teaching Commission

International Union of the History and Philosophy of Science

www.idtc-ihps.com

- Engagement, the Emerging Frontier: Bridging the Divides between Science, Policy, & Citizenship
Mahmud Farooque School for the Future of Innovation in Society, Arizona State University

Further information from conference web site: www.bu.edu/hps-scied/

Or Peter Garik garik@bu.edu

Graduate HPS&ST Course, University of Copenhagen, September 19-23, 2016.

A graduate course on *Educational Implications of the History and Philosophy of Science and Mathematics* will be held at University of Copenhagen, September 19-23, 2016.

This international doctoral course will focus on the utilisation of historical and philosophical scholarship to inform science and mathematics education. The course will present an overview of this research tradition and discuss educational implications of HPS&M based on the analysis of case studies from different disciplines. The course is open to both Danish and international students; it is free of charge for the participants (including lunch); and can have a maximum of 25 participants. Participants can receive 5 ECTS (European Credit Transfer and Accumulation System) points.

Among the course lecturers are *Michael Matthews* (founding editor of *Science & Education*), *Peter Heering* (Past President IHPST), *Helge Kragh* (History of Physics) and *Jesper Lützen* (History of Mathematics).

More information about the course and a registration link can be found at www.ind.ku.dk/hpscource; and from the course coordinator Ricardo Karam (ricardo.karam@ind.ku.dk).

1st European IHPST Regional Conference, August 22-25, 2016, Europa-Universität Flensburg, Germany

Chairs: Peter Heering & Claus Michelsen (ihpst16@uni-flensburg.de)

Plenary speakers:

Johannes Grebe-Ellis (Bergische Universität Wuppertal):

Hanne Andersen (University of Copenhagen)

Iwan Rhys Morus (Aberystwyth University)

http://ihpst.net/content.aspx?page_id=22&club_id=360747&module_id=189361

3rd Asian IHPST Regional Conference, December 15-18, 2016, Pusan National University, South Korea.

Chairs: Hae-Ae Seo (Biology Education, PNU) & Youngmin Kim (Physics Education, PNU)

Conference Theme: Inquiry in Science and in Science Education: Historical, Philosophical and Pedagogical Dimensions

This conference follows the previous very successful Asian regional meetings in Seoul (2012) and Taipei (2014).

Pusan National University is in Busan, South Korea's second largest city, located on the southern coast of the country with easy high-speed train and air connection to Seoul. The Conference will open on Thursday evening with a plenary lecture and welcoming reception in the evening and on Friday and Saturday for full day presentations. The Conference will close on Sunday at lunch time and a half-day excursion will be offered in the afternoon. A pre-conference research workshop on HPS and Education themes and methodologies will be organized for graduate students and junior scholars.

Proposals for individual papers (1,000 words) and symposia are due by: **June 10, 2016**.

Inquiries to: Hae-Ae Seo (haseo@pusan.ac.kr)

The 7th International Conference of the European Society for the History of Science (ESHS) will be held in Prague, 22 - 24 September, 2016.

The Conference website is available at: <http://www.7eshs2016.cz>

There you will find the presentation of the Conference as well as the various deadlines for registration and submission of abstracts (<http://www.7eshs2016.cz/callforpapers/>).

The submission of stand-alone papers and symposia is now possible at the following <http://7eshs2016.guarant.eu/abstracts/>

Division of the History of Science & Technology (DHST) 25th International Congress, Rio de Janeiro, Brazil, 23 to 29 July 2017.

The 25th ICHST will be held in the Praia Vermelha campus of the Federal University of Rio de Janeiro (UFRJ), located in one of the most beautiful and touristic regions in the city, served by various forms of public transport and close to important clusters of hotels, beaches, and numerous artistic and cultural attractions.

More information is available at: <http://www.ichst2017.sbhc.org.br/>



The theme of the 25th Congress is “Science, Technology and Medicine between the Global and the Local”. This theme is construed broadly, and studies of the History of Science, Technology and Medicine at the global, national and local levels, across all periods, and from a variety of methodological and historiographical approaches are encouraged.

Deadline for submission of symposia proposals is 30 April 2016.

Deadline for submission of stand-alone papers 30 November 2016

The minutes of the last meeting of the DHST Council, which took place in Beijing on 12 December 2015, have been posted on the DHST Website:

<https://docs.google.com/viewer?a=v&pid=sites&srcid=ZGhzdHdlYi5vcmd8d3d3fGd4OjZjODI1ZmJmYWExMzRmNWY>

The Inter-Divisional Teaching Commission (IDTC) of the DHST/DLMPS will stage a education-related symposium during the congress. This might consist of 3, 5, 7 or more papers depending on number and quality of submissions received by 15 April 2016, thus allowing time for selection by IDTC and final submission to Congress Organising Committee by due date of 30 April.

Proposals of 1,000 words, including title, author’s name, institution and email should be sent as a Word document to the local IDTC contact person:

Andréia Guerra

Centro Federal de Educação Tecnológica do Rio de Janeiro - CEFET-RJ

Teknê Group

Departamento de Pesquisa

BRAZIL

aguerra@tekne.pro.br

Education symposium papers ideally should connect to the Congress theme (broadly construed) and can deal with the history of science education, the utilisation of history of science in education, curriculum debates about appropriate school and university science programmes, the impact of textbooks on teaching, the role of HPS in teacher education, and other topics. All symposium presenters need to be registered for the congress.

In addition to the symposium, the IDTC will arrange a congress session on ‘Engaging and Innovative Teaching in the History of Science’. More details on this will follow.

IsisCB Explore History of Science Index

Consider using the *IsisCB Explore History of Science Index* (isiscb.org/explore) for your research, and encourage your library or department to add it to their list of resources. Accessible to anyone on the web, *IsisCB Explore* is a completely open access service made possible by the History of Science Society with support from the University of Oklahoma.

IsisCB Explore opens up bibliographical research in the history of science, technology, and medicine. It is designed for students, scholars, librarians, and the general public. Users will find the data architecture intuitive and powerful, and librarians can trust that it will guide researchers to the best literature in the discipline.

Based on the 100-year-old *Isis Current Bibliography of the History of Science*—the largest and most comprehensive in its field—it is supported by the discipline's flagship society, the History of Science Society. It will be expanded and updated annually.

Key features include:

- Nearly 200,000 interlinked bibliographic citations to books, chapters, articles, dissertations, and reviews from the *Isis Bibliography of the History of Science* 1974 to present. Annually updated.
- An authority index of over 150,000 curated entries. Includes historical concepts, persons, and institutions. Also indexes scholars, publishers, journals, and degree granting institutions.
- A navigation interface built specifically for history of science research. Enables focused searches on ancient, medieval, modern and non-Western topics.
- A state-of-the-art network architecture with complex interlinking of citation and authority records.
- Integrated social media tools, including public user comments as well as Twitter and Facebook sharing.
- User accounts with the ability to save searches.
- Zotero integration. Allows users to save individual citations as well as collected results.
- Automated access, with a REST API.
- A search widget for your website.
- *Coming soon:* A link resolver, giving library patrons immediate access to your library's holdings.

There are some instructional videos on the [IsisCB Explore YouTube Channel](#). The [introductory video](#) gives you a quick overview. You can find more information about the history of the Isis Bibliography on the main site: isiscb.org.

Contact Stephen Weldon (spweldon@ou.edu) with questions.

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Climate Change Education in USA

The first nationwide survey of climate change education in the United States, conducted by researchers at NCSE and Pennsylvania State University, has just debuted in *Science* magazine.

The survey answers such questions as: How is climate change being taught in American schools? Is it being taught at all? And how are teachers addressing climate change denial in their classrooms, schools, and school districts?

The story:

<http://ncse.com/news/2016/02/first-nationwide-survey-climate-change-education-0016919>

The press release:

<http://ncse.com/climate/first-nationwide-survey-climate-change-education>

The Science paper: <http://science.sciencemag.org/content/351/6274/664.full>

Robert Luhn, National Center for Science Education, Oakland, CA, USA

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www.ncse.com

Recent HPS&ST Research Articles

- Burgin, S. R., Sadler, T. D. (2016). Learning nature of science concepts through a research apprenticeship program: A comparative study of three approaches. *Journal of Research in Science Teaching*, 53(1), 31-59. doi: 10.1002/tea.21296
- Cetin-Dindar, A. (2015). Student Motivation in Constructivist Learning Environment. *Eurasia Journal of Mathematics, Science & Technology Education*, 12(2), 233-247. doi: 10.12973/eurasia.2016.1399a
- Dagher, Z. R., Erduran, S. (2016). Reconceptualizing the Nature of Science for Science Education: Why Does it Matter? *Science & Education*, 1-18. doi: 10.1007/s11191-015-9800-8 online first
- Dahmen, S. R. (2015). On pendulums and air resistance: The mathematics and physics of Denis Diderot. *The European Physical Journal H*, 40(3), 337-373. doi: 10.1140/epjh/e2015-50054-8
- Frigg, R., Thompson, E. Werndl, C. (2015). Philosophy of Climate Science Part I: Observing Climate Change. *Philosophy Compass*, 10(12), 953-964. doi: 10.1111/phc3.12294 [Note: Part II is published at the same Vol. and Issue with doi: 10.1111/phc3.12297]
- Galéra, A. (2016). The Impact of Lamarck's Theory of Evolution Before Darwin's Theory. *Journal of the History of Biology*, 1-18. doi: 10.1007/s10739-015-9432-5
- Malpangotto, M. (2016). The original motivation for Copernicus's research: Albert of Brudzewo's Commentariolum super Theoricis novis Georgii Purbachii. *Archive for History of Exact Sciences*, 1-51. doi: 10.1007/s00407-015-0171-y
- Rorres, C. (2016). Archimedes' floating bodies on a spherical Earth. *American Journal of Physics*, 84(61), 61-70. doi: 10.1119/1.4934660

- Rosenhouse, J. (2016). On Mathematical Anti-Evolutionism, *Science & Education*, 1-20. doi: 10.1007/s11191-015-9801-7
- Sousa, C. (2016). Bridging Darwin's Origin of Species & Wegener's Origin of Continents and Oceans: Using Biogeography, Phylogeny, Geology & Interactive Learning, *American Biology Teacher*, 78(1), 24-33. DOI: 10.1525/abt.2016.78.1.24
- Tamborini, M. (2015). Paleontology and Darwin's Theory of Evolution: The Subversive Role of Statistics at the End of the 19th Century. *Journal of the History of Biology*, 48(4), 575-612. doi: 10.1007/s10739-015-9402-y
- Tümay, H. (2016). Emergence, Learning Difficulties, and Misconceptions in Chemistry Undergraduate Students' Conceptualizations of Acid Strength, *Science & Education*, 1-26. Doi: 10.1007/s11191-015-9799-x online first

Recent HPS&ST Books

Ault, Charles R. (2015). *Challenging Science Standards*. Lanham, Maryland: Rowman and Littlefield.

“For several decades educators have struggled to identify the attributes all sciences have in common. In the popular mind this effort constitutes the importance of teaching “the” scientific method. In the policy maker’s world this pursuit yields standards for all Americans that unify the sciences. For teachers, the quest for unity has typically meant teaching science as process. However, a curriculum that prioritizes what all sciences have in common obscures their vital differences. For example, studying landslides is very different from doing x-ray diffraction; climate science is unlike medical research. Naïve ideas about scientific unity impoverish the public’s ability to evaluate scientific enterprises. *Challenging Science Standards* voices skepticism towards the quest for unity. Through analyses of disciplinary knowledge, school curricula, and classroom learning, the book uncovers flaws in the unifying dimensions of the science standards. It proposes respect for disciplinary diversity and attention to questions of value in choosing what science to teach. Illuminated by vignettes of children and adolescents studying topics ranging from snail populations to horse fossils, *Challenging Science Standards* proposes promising remedies.” (From the Publisher)

“The many methods employed to create new knowledge in the many fields of science and mathematics cannot be described by a simple set of procedures. Over the years, numerous curriculum attempts to do so result more in obfuscation than clarification of the complex nature of creating new understandings, and they do little to assist students in pursuing their own inquiries. Charles Ault has presented this argument with numerous examples in a way that will fascinate the reader.” (By Joseph Novak)

More details at: <http://tinyurl.com/zck9maq>

Bell, Matthew (Ed.) (2016). *The Essential Goethe*. Princeton, NJ: Princeton University Press.

“The *Essential Goethe* is the most comprehensive and representative one-volume collection of Goethe’s writings ever published in English. It provides English-language readers easier access than ever before to the widest range of work by one of

the greatest writers in world history. Goethe's work as playwright, poet, novelist, and autobiographer is fully represented. In addition to the works for which he is most famous, including *Faust Part I* and the lyric poems, the volume features important literary works that are rarely published in English—including the dramas *Egmont*, *Iphigenia in Tauris*, and *Torquato Tasso* and the bildungsroman *Wilhelm Meister's Apprenticeship*, a foundational work in the history of the novel. The volume also offers a selection of Goethe's essays on the arts, philosophy, and science, which give access to the thought of a polymath unrivalled in the modern world. Primarily drawn from Princeton's authoritative twelve-volume Goethe edition, the translations are highly readable and reliable modern versions by scholars of Goethe. The volume also features an extensive introduction to Goethe's life and works by volume editor Matthew Bell."

More information at: <http://tinyurl.com/jach313>

Campenot, Robert, B. (2016). *Animal Electricity How We Learned That the Body and Brain Are Electric Machines*. Cambridge, MA: Harvard University Press

"Like all cellular organisms, humans run on electricity. Slight imbalances of electric charge across cell membranes result in sensation, movement, awareness, and thinking—nearly everything we associate with being alive. Robert Campenot offers a comprehensive overview of animal electricity, examining its physiological mechanisms as well as the experimental discoveries that form the basis for our modern understanding of nervous systems across the animal kingdom. Cells work much like batteries. Concentration gradients of sodium and potassium cause these ions to flow in and out of cells by way of protein channels, creating tiny voltages across the cell membrane. The cellular mechanisms that switch these ion currents on and off drive all the functions associated with animal nervous systems, from nerve impulses and heartbeats to the 600-volt shocks produced by electric eels. Campenot's examination of the nervous system is presented in the context of ideas as they evolved in the past, as well as today's research and its future implications. The discussion ranges from the pre-Renaissance notion of animal spirits and Galvani's eighteenth-century discovery of animal electricity, to modern insights into how electrical activity produces learning and how electrical signals in the cortex can be used to connect the brains of paralyzed individuals to limbs or prosthetic devices. Campenot provides the necessary scientific background to make the book highly accessible for general readers while conveying much about the process of scientific discovery." (From the Publisher)

More information at: <http://www.hup.harvard.edu/catalog.php?isbn=9780674736818>

Clark, Kathleen (Ed.) (2015). *Jost Bürgi's Aritmetische und Geometrische Progreß Tabulen (1620)*. Basilea: Birkhäuser Basel

"This monograph presents a groundbreaking scholarly treatment of the German mathematician Jost Bürgi's original work on logarithms, *Arithmetische und Geometrische Progreß Tabulen*. It provides the first-ever English translation of

Bürge's text and illuminates his role in the development of the conception of logarithms, for which John Napier is traditionally given priority. High-resolution scans of each page of his handwritten text are reproduced for the reader and as a means of preserving an important work for which there are very few surviving copies. The book begins with a brief biography of Bürge to familiarize readers with his life and work, as well as to offer an historical context in which to explore his contributions. The second chapter then describes the extant copies of the *Arithmetische und Geometrische Progreß Tabulen*, with a detailed description of the copy that is the focus of this book, the 1620 "Graz manuscript". A complete facsimile of the text is included in the next chapter, along with a corresponding transcription and an English translation; a transcription of a second version of the manuscript (the "Gdansk manuscript") is included alongside that of the Graz edition so that readers can easily and closely examine the differences between the two. The final chapter considers two important questions about Bürge's work, such as who was the copyist of the Graz manuscript and what the relationship is between the Graz and Gdansk versions. Appendices are also included that contain a timeline of Bürge's life, the underlying concept of Napier's construction of logarithms, and scans of all 58 sheets of the tables from Bürge's text.

Anyone with an appreciation for the history of mathematics will find this book to be an insightful and interesting look at an important and often overlooked work. It will also be a valuable resource for undergraduates taking courses in the history of mathematics, researchers of the history of mathematics, and professors of mathematics education who wish to incorporate historical context into their teaching." (From the Publisher)

More information at: <http://tinyurl.com/zy47y3j>

Döring, M, Petersen, I, Brüninghaus, A, Kollek, R. (2015). *Contextualizing Systems Biology. Presuppositions and Implications of a New Approach in Biology*. Dordrecht: Springer International Publishing

"This collective monograph aims at contributing to an improved understanding of the epistemic presumptions, sociocultural implications and historical backgrounds of the newly emerging and currently expanding approach of systems biology. In doing so, it offers empirically grounded, valuable and reflexive information about a paradigmatic shift in the biosciences for a wide range of scientists working in the interdisciplinary areas of systems biology, synthetic biology, molecular biology, biology, the philosophy of science, the sociology of science and scientific knowledge, science and technology studies, technology assessment and the like. The authors of this monograph share the theoretical methodological premise that science is a culturally and socially embedded practice which characterizes our culture as a scientific one and at the same time draws its innovative potential from its socio-cultural context. This dialectic relationship lies at the heart of the current development of systems biology which is conceived as a so-called successor of '-omics' research and triggered by high-throughput information technologies. At the same time a need for a holistic conceptualization of complex biological processes emerges. The title *Contextualizing Systems Biology* suggests that this book analyzes the development and advent of systems biology from different theoretical and methodological perspectives. We investigate a variety of contexts ranging from the analysis of cognitive contexts (such as basic theoretical concepts) to regulative contexts (policies)

to the concrete application of a systems biology in the socio-scientific context of a European research project. In empirically analyzing these different and interrelated layers and dimensions of systems biology, the scope of the book goes beyond present attempts to investigate the advent of new approaches in the biological sciences as it frames and assesses systems biology from an interdisciplinary and integrated perspective” (From the Publisher)

More information at: <http://tinyurl.com/zcsg2ds>

French, Steven (2016). *Philosophy of Science: Key Concepts*. London: Bloomsbury Publishing

“If philosophy of science baffles you, this book offers the key to unlock its mysteries. Written by a leading scholar in the field, it provides a superb introduction to core topics ranging from scientific discovery to gender bias. This book is a must-read for anyone interested in philosophical issues relating to scientific knowledge.” (By Roman Frigg)

“Philosophy of Science: Key Concepts is a lively, engaging and comprehensive introduction to philosophy of science, written by one of its best contemporary practitioners. Steven French explains the mechanics of science by focusing on episodes from past and current scientific practice. He weaves the web of the major concepts that constitute the tools of the philosophical understanding of science and unravels their rich content. This book is like no other introduction I have read in making a complex conceptual terrain accessible to, and viable for, the uninitiated. A masterly achievement.” (By Stathis Psillos)

“This is a wonderful book. It engages students with an infectious enthusiasm for science and philosophy, built on provocative examples, fascinating history, patient explanations, and no small amount of good humor. French has a terrific knack for unpacking challenging ideas in an intuitive way, without jargon, and yet rigorously.” (By Anjan Chakravartty)

More information at: <http://tinyurl.com/hfzfzfi>

Garrison, Jim, Neubert, Stefan, Reich, Kersten (2016). *Democracy and Education Reconsidered: Dewey After One Hundred Years*. London: Routledge

“Democracy and Education Reconsidered highlights the continued relevance of John Dewey’s *Democracy and Education* while also examining the need to reconstruct and re-contextualize Dewey’s educational philosophy for our time. The authors propose ways of revising Dewey’s thought in light of the challenges facing contemporary education and society, and address other themes not touched upon heavily in Dewey’s work, such as racism, feminism, post-industrial capitalism, and liquid modernity. As a final component, the authors integrate Dewey’s philosophy with more recent trends in scholarship, including pragmatism, post-structuralism, and the works of other key philosophers and scholars.” (From the Publisher)

More information at: <https://www.routledge.com/products/9781138939509>

Hafer, Abby (2016). *The Not-So-Intelligent Designer - Why Evolution Explains the Human Body and Intelligent Design Does Not?* Eugene, OR: Cascade Books

“Why do men's testicles hang outside the body? Why does our appendix sometimes explode and kill us? And who does the Designer like better, anyway--us or squid? These and other questions are addressed in [this book].

Dr. Abby Hafer argues that the human body has many faulty design features that would never have been the choice of an intelligent creator.

She also points out that there are other animals that got better body parts, which makes the Designer look a bit strange; discusses the history and politics of Intelligent Design and creationism; reveals animals that shouldn't exist according to Intelligent Design; and disposes of the idea of irreducible complexity.

Her points are illustrated with pictures, wit, and erudition.” (From the Publisher)

“Three cheers for Abby Hafer! She did it and no one thought it could be done! She wrote a devastating critique of intelligent design that is clear, funny, scientifically accurate, and charming. Her book is a marvel of how popular science should be written. Oh, were there more scientific writers like Abby . . . ” (by Michael Martin)

More information at: <http://wipfandstock.com/the-not-so-intelligent-designer.html>

Kuehn, Kerry (2016). *A Student's Guide Through the Great Physics Texts: Volume IV: Heat, Atoms and Quanta*. Dordrecht: Springer International Publishing

“This book provides a chronological introduction to modern atomic theory, which represented an attempt to reconcile the ancient doctrine of atomism with careful experiments—performed during the 19th century—on the flow of heat through substances and across empty space. Included herein are selections from classic texts such as Carnot’s Reflection on the Motive Power of Fire, Clausius’ Mechanical Theory of Heat, Rutherford’s Nuclear Constitution of Atoms, Planck’s Atomic Theory of Matter and Heisenberg’s Copenhagen Interpretation of Quantum Theory. Each chapter begins with a short introduction followed by a reading selection. Carefully crafted study questions draw out key points in the text and focus the reader’s attention on the author’s methods, analysis and conclusions. Numerical and laboratory exercises at the end of each chapter test the reader’s ability to understand and apply key concepts from the text. Heat, Radiation and Quanta is the last of four volumes in A Student’s Guide through the Great Physics Texts. The book comes from a four-semester undergraduate physics curriculum designed to encourage a critical and circumspect approach to natural science while at the same time preparing students for advanced coursework in physics. This book is particularly suitable as a college-level textbook for students of the natural sciences, history or philosophy. It might also serve as a textbook for advanced high-school or home-schooled students, or as a thematically-organized source-book for scholars and motivated lay-readers. In studying the classic scientific texts included herein, the reader will be drawn toward a lifetime of contemplation.” (From the Publisher)

More information at: <http://tinyurl.com/zr2wmhv>

Niaz, Mansoor (2016). *Chemistry Education and Contributions from History and Philosophy of Science*. Dordrecht: Springer

“This book explores the relationship between the content of chemistry education and the history and philosophy of science (HPS) framework that underlies such education. It discusses the need to present an image that reflects how chemistry developed and progresses. It proposes that chemistry should be taught the way it is practiced by chemists: as a human enterprise, at the interface of scientific practice and HPS. Finally, it sets out to convince teachers to go beyond the traditional classroom practice and explore new teaching strategies.

The importance of HPS has been recognized for the science curriculum since the middle of the 20th century. The need for teaching chemistry within a historical context is not difficult to understand as HPS is not far below the surface in any science classroom. A review of the literature shows that the traditional chemistry classroom, curricula, and textbooks while dealing with concepts such as law, theory, model, explanation, hypothesis, observation, evidence and idealization, generally ignore elements of the history and philosophy of science. This book proposes that the conceptual understanding of chemistry requires knowledge and understanding of the history and philosophy of science.” (From the Publisher)

“Professor Niaz’s book is most welcome, coming at a time when there is an urgently felt need to upgrade the teaching of science. The book is a huge aid for adding to the usual way - presenting science as a series of mere facts - also the necessary mandate: to show how science is done, and how science, through its history and philosophy, is part of the cultural development of humanity.” (Gerald Holton, Harvard University)

More information at: <http://tinyurl.com/z52kqsz>

Riski, Jessica (2016). *The Restless Clock: A History of the Centuries-Long Argument Over What Makes Living Things Tick*. Chicago, IL: Chicago University Press.

"In this impressive cultural and intellectual narrative of the sciences of life and the techniques of mechanics, Riskin shows decisively how a richer and broader history of such sciences offers indispensable lessons for controversies surrounding agency and purpose in our understanding of the world. The Restless Clock explores fascinating projects launched by medieval churchmen and Renaissance artisans, enlightened philosophers and modern experimenters. It documents the construction of automata and experimentation in biology, the ambitions of Darwinism and of germ theory, the visions of cybernetics and of neurosciences. These stories reveal the power and importance of a tradition of living machines within the development of western sciences that has been strangely underestimated or dismissed. Its legacies today need just this kind of astute re-evaluation.

This book will become a central reference for many vital debates about the long history of life sciences and the possible futures of intelligent machines.” (by Simon Schaffer)

More information at: <http://tinyurl.com/hqlvu3l>

Coming HPS&ST-Related Conferences

- February 26-27, 2016, 'The Contribution of HPS to Science Literacy and Policy', Boston University Centre for History and Philosophy of Science, and Boston University School of Education.
Details from: Peter Garik garik@bu.edu
- February 26-27, 2016, Meeting of the South Carolina Society for Philosophy (Biennial Joint Meeting with the North Carolina Philosophical Society)
Details at: <http://www.southcarolinaphilosophy.org/>
- March 11-12, 2016, University of Washington Graduate Student Conference: Theme: Values in Science, Seattle, WA, USA.
Details at: <http://tinyurl.com/qj5dh63>
- March 17-19, 2016, 16th Annual Meeting of the Southern Association for the History of Medicine and Science (SAHMS), Las Vegas, NV, USA.
Details at: <http://www.sahms.net/sahms-2016-las-vegas.html>
- March 31-2, 2016, 9th Conference of the Munich-Sydney-Tilburg (MuST) conference series, Munich, Germany
Details at: <http://www.must2016.philosophie.uni-muenchen.de/index.html>
- April 6-10, 2016, Third Biennial Early-Career Conference for Historians of the Physical Sciences, Annapolis, MD, USA.
Details at: <http://tinyurl.com/o7hn765>
- April 7-9, 2016, British Society for Literature and Science Conference, University of Birmingham, England
Details from: Will Tattersdill, w.j.tattersdill@bham.ac.uk
- April 14-17, 2016, NARST annual conference, Baltimore, MD, USA.
Details at: <https://www.narst.org/annualconference/2016conference.cfm>
- April 21-23, 2016 Nordic Network for Philosophy of Science Fourth Annual Meeting, Tartu, Estonia.
Details at: <https://nnpscience.wordpress.com/meetings/tartu-2016/>
- May 18-29, 2016, Models and Simulations 7 Conference (MS7), Barcelona, Spain.
Details at: <http://www.ub.edu/ms7/>
- May 19-22, 2016, 3rd Annual Meeting of the Consortium for Socially Relevant Philosophy of/in Science and Engineering (SRPoiSE), Richardson, Texas, USA
Details at: <http://www.utdallas.edu/c4v/cfp-srpoise-vmst-2016/>
- May 19-21, 2016, Philosophy of Science in a Forest 2016, Conference Centre Kaap Doorn, Utrecht, Netherlands
Details at: <https://www.kaapdoorn.nl/nvwf/>
- May 19-22, 2016, 6th Annual Values in Medicine, Science, and Technology Conference, Richardson, Texas, USA
Details at: <http://www.utdallas.edu/c4v/cfp-srpoise-vmst-2016/>
- May 6-28, 2016, 23rd Symposium on Chemical and Science Education, Dortmund, Germany
Details at: <http://www.chemiedidaktik.uni-bremen.de/symp2016/>
- May 18-20, 2016, Connecting Worlds: History of Science International Conference, Porto, Portugal.
Details at: <https://historyofscienceup.wordpress.com/home>
- May 28-30, 2016, Annual Conference of the Canadian Society for the History and Philosophy of Science (CSHPS), Calgary, Canada
Details at: <http://www.yorku.ca/cshps1/meeting.html>
- May 2-31, 2016, Annual Meeting of the Canadian Society for History and Philosophy of Mathematics (CSHPM), Calgary, Canada

- Details at: <http://www.cshpm.org/meeting/>
- June 16-18, 2016, Ernst Mach Centenary Conference, University of Vienna, Austria.
Details at: <http://sshap.org/2015/08/13/cfp-ernst-mach-centenary-conference-2016/>
- June 17-19, 2016, 6th Conference of the Society for the Philosophy of Science in Practice (SPSP), Glassboro, NJ, USA.
Details at: <http://www.philosophy-science-practice.org/en/events/sixth-spsp-glassboro-nj-2016/>
- June 20-24, 2016, 12th International Conference of the Learning Sciences, Nanyang Technological University, Singapore
Details at: <https://www.isls.org/icls/2016/theme.html>
- June 22-25, 2016, Eighth Joint Meeting of the BSHS, CSHPS, and HSS, Edmonton, Alberta, Canada.
Details at: www.uab.ca/3societies
- June 22-25, 2016, History of Philosophy of Science (HOPOS) annual conference, University of Minneapolis, USA.
Details at: <http://hopos2016.umn.edu/>
- June 22-26, 2016, Annual Meeting of the Society for the History of Technology (SHOT), Singapore
Details at: http://www.historyoftechnology.org/call_for_papers/index.html
- July 3-5, 2016, Sixth Integrated History and Philosophy of Science conference (&HPS6)
Details at: <https://philosophyofsciencenetwork.wordpress.com/hps6/>
- July 13-15, 2016, Science in Public 2016, University of Kent, Canterbury, UK
Details at: <http://scienceinpublic.org/science-in-public-2016/>
- July 16-18, 2016, 18th UK-European Foundations of Physics Conference
Details at: <http://www.lse.ac.uk/philosophy/blog/2015/10/01/foundations-2016/>
- July 18-22, 2016, History and Pedagogy of Mathematics, Montpellier, France
Details at: <http://hpm2016.sciencesconf.org/resource/page/id/2>
- July 26-30, 2016, 43rd ICOHTEC meeting: Technology, Innovation, and Sustainability: Historical and Contemporary Narratives. Porto, Portugal
Details at: <http://www.icohtec.org/annual-meeting-2016-cfp.html>
- August 10-13, 2016, Annual Meeting of the Cognitive Science Society, Philadelphia, MA, USA
Details at: <http://cognitivesciencesociety.org/conference2016/index.html>
- August 22-25, 2016, 1st European IHPST Regional Conference, Flensburg, Germany
Details at:
http://ihpst.net/content.aspx?page_id=22&club_id=360747&module_id=189361
- August 26-28, 2016, International Conference of East-Asian Association for Science Education, Tokyo, Japan.
Details at: <http://ease2016tokyo.jp/>
- September 5-7, 2016, European Physical Society, 2nd Conference on History of Physics, Pöllau Castle, Pöllau, Austria.
Submission deadline: April 28, 2016.
Details at: www.historyofphysics.org
- September 19-23, 2016, Educational Implications of the History and Philosophy of Science and Mathematics, Graduate Course, University of Copenhagen, Denmark.
Information at: www.ind.ku.dk/hpsc/course
Inquiries to: Ricardo Karam (ricardo.karam@ind.ku.dk)
- September 22-24, 2016, The 7th International Conference of the European Society for the History of Science (ESHS), Prague
Details at: <http://www.7eshs2016.cz>

November 5, 2016, Leibniz: Legacy and Impact, Manchester Metropolitan University, UK
Abstract deadline: February 28.

Details at: <http://leibniz-translations.com/leibniz2016.htm>

November 14-15, 2016: Symposium: The Dilemmas of Upright Scientists, Tel-Aviv
University, Israel

Proposals by March 1st.

Inquiries to: Yuliana Litov, ylitov@tauex.tau.ac.il

December, 15-18, 2016, 3rd Asian IHPST Regional Conference, Pusan National University,
South Korea.

Inquiries to: Hwe-Ae Seo, haseo@pusan.ac.kr

July 2-29, 2017, 25th International Congress of History of Science, and Technology (ICHST),
Rio de Janeiro, Brazil.

Details at: <http://www.ichst2017.sbhc.org.br/site/capa>

July 16-21, 2017, International Society for the History, Philosophy, and Social Studies of
Biology (ISHPSSB) 2017 Meeting, São Paulo, Brazil.

Details at: <http://www.ishpssb.org/announcements/148-ishpssb-2017-meeting>