

HPS&ST Note

May 2016

Introduction

This HPS&ST monthly note is sent direct to about 7,100 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 innovative and more engaging and effective teaching of the history and philosophy of science. The note is sent on to different international and national HPS lists and 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 .

Asian HPS&ST 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***

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.

Plenary Speakers include:

Darrell P. Rowbottom is Professor and Head of Philosophy at Lingnan University, Hong Kong. He studied physics as an undergraduate (at Bristol), and history and philosophy of science (at the LSE) and philosophy (at Durham) thereafter. He subsequently held posts at several universities in the UK, including Bristol, Edinburgh, and Oxford. His current research focuses on general issues in the philosophy of science (e.g. scientific method, scientific realism, and scientific progress) and the philosophy of probability (e.g. intersubjective probability and measurement paradoxes). He also has interests in epistemology, metaphysics, and the philosophy of education.



See:

<http://www.ln.edu.hk/philoso/staff/rowbottom/>

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

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

Conference website: <http://asiahpsst2016.bolog.com/welcome.php>

Limerick Symposium on Nature of Science in Science Education: Recent Debates and Future Directions, 26th - 28th of October 2016, University of Limerick, Ireland

Introduction by Dr Anne Looney, National Council of Curriculum and Assessment, Ireland

Plenary Speakers



Gurol Irzik
Sabanci University



Zoubeida Dagher
University of Delaware



Ebru Kaya
Bogazici University



Sibel Erduran
Uni. of Limerick

Nature of science (NOS) has become a predominant area of research in science education in the past few decades. Teaching and learning of NOS can help students understand how science works and appreciate science as a key contributor to society. Recent curriculum development efforts including the Junior Cycle Specification in Ireland have included NOS as a key component of the science content. This symposium will bring together researchers, policy makers and practitioners to review recent debates on NOS and discuss the implications for the science curriculum, teacher education as well as a classroom teaching and learning.

The symposium will be hosted by EPI•STEM, National Centre for STEM Education based at University of Limerick, Ireland. The programme includes plenary talks, paper presentations, workshops and poster presentations.

Deadlines:

27th May - Abstract Submission

27th June - Acceptance Notification.

27th July - Early Bird Registration (99 Euro).

27th September - Late Registration (129 Euro).

Submissions to

LimerickNOS2016@gmail.com

Inquiries at:

www.epistem.ie

Latest issue of *Science & Education*

Science & Education (Vol. 25, N. 3-4, May 2016)

Editorial

Kostas Kampourakis, *Publish or Perish?*

Articles:

Ingo Brigandt, *Why the Difference Between Explanation and Argument Matters to Science Education*

Ying-Chih Chen, Brian Hand & Soonhye Park, *Examining Elementary Students' Development of Oral and Written Argumentation Practices Through Argument-Based Inquiry*

Jesper Sjöström, Ingo Eilks & Vânia G. Zuin, *Towards Eco-reflexive Science Education: A Critical Reflection About Educational Implications of Green Chemistry*

Alexsandro Pereira de Pereira, Paulo Lima Junior & Renato Felix Rodrigues: *Explaining as Mediated Action: An Analysis of Pre-service Teachers' Account of Forces of Inertia in Non-inertial Frames of Reference*

Arthur Galamba, *Conflicting Interpretations of Scientific Pedagogy*

José M. Pavez, Claudia A. Vergara, David Santibañez & Hernán Cofré, *Using a Professional Development Program for Enhancing Chilean Biology Teachers' Understanding of Nature of Science (NOS) and Their Perceptions About Using History of Science to Teach NOS*

Cody Tyler Williams & David Rudge, *Emphasizing the History of Genetics in an Explicit and Reflective Approach to Teaching the Nature of Science: A Pilot Study*

Book reviews:

Jeff Dodick, *Major Themes Written in "Deep Time"*

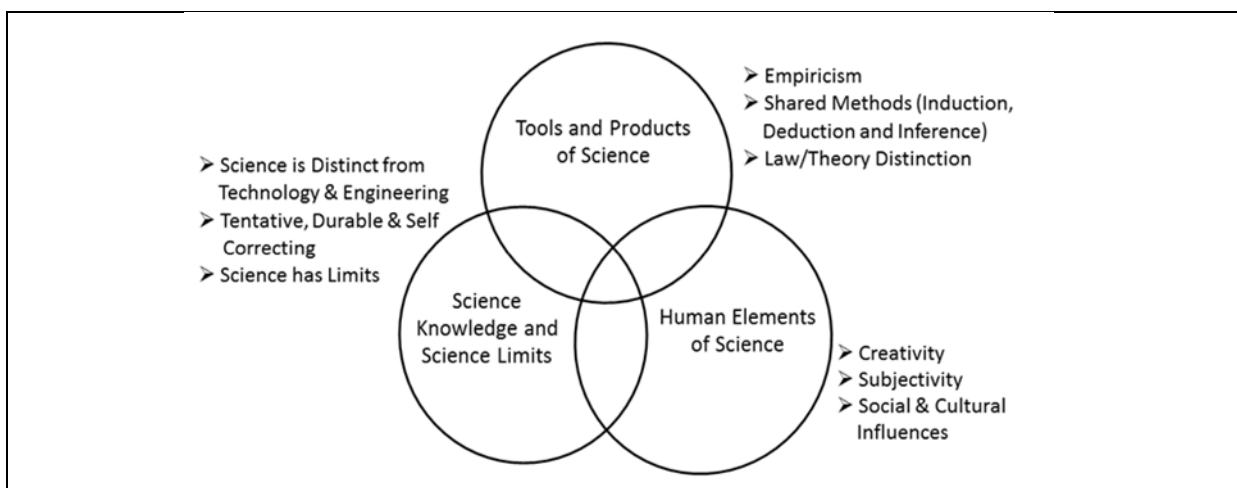
Michael R. Matthews, *Scientific Method in the Behavioural Sciences*
 Glenn Branch, *Darwinning Hearts and Minds*
 Osvaldo Pessoa Jr., *Are Untestable Scientific Theories Acceptable?*
 Jeremy Gray, *Poincaré, Philosopher of Science*
 Jim Mackenzie, *Science Education Rethought*
 André Martins, *Learning Science and About Its Nature: Two Conferences and One Book*
 Petri Ylikoski, *Harry Collins and the Crisis of Expertise*
 Gábor Á. Zemplén, *A Novel Framework for Argumentation*
 Don Metz, *Science Education and Citizenship*

Contributions Invited for Second Edition of *The Nature of Science in Science Education: Rationales and Strategies*

William McComas is seeking expressions of interest from scholars with HPS&ST research interests to contribute to the second, 20th anniversary, edition of the successful 1998 NOS anthology that he edited. The second edition will also be published by Springer.

Chapters are sought that outline some tested way to teach aspects of the nature of science in the K-12 environment, in a pre-service setting, with in-service teachers, or even with learners in informal environments. Chapters chosen for inclusion will likely be those that feature broad strategies rather than highly specific ones. Although there will be limited space in the book, submissions on the background of NOS studies are welcome.

It would be helpful if you would communicate what aspects of the NOS you will target from those that appear in the following set of oft-stated NOS elements (many of which are now incorporated in the new Next Generation Science Standards in the U.S.). In this conceptualization there are 9 key NOS targets arranged in three suites:



If you wish to contribute, please contact the project manager Jennifer Oramous (joramous@uark.edu) and tell her what aspect or aspects of the nature of science your strategy targets, in what setting your strategy would best operate and a few details about the strategy itself.

By **August 5, 2016**, please submit your one-page outline to the following Dropbox website with your full contact information. We will monitor this site and confirm receipt of your proposal.

<https://www.dropbox.com/request/3g45F7D1MAojPb9DfOpM>

If your chapter is initially selected, the draft version will be due October 1 and reviewed after submission. It is anticipated that the book will be published in the northern Spring of 2017.

Please email Professor William McComas directly (mccomas@uark.edu) if you have any questions or comments.

New ways to discover and advance students' and the wider public's reasoning about science and religion

A conference exploring links between education, science and religion, organised by the LASAR (Learning about Science and Religion) project at the University of Reading with the Department of Education, University of Oxford

Keynote Alister McGrath, **Chair** Michael Reiss

Date: Friday 28th October 9.30 am - 5.30 pm

Location: Oxford University, Department of Education

email abstracts (300-500 words) for 15 minute papers as a Word document to Dr Berry Billingsley, lasar@reading.ac.uk .

Deadline: June 20th 2016

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

NARST 2016 Conference, Strand 13 HPS&ST Presentations

Symposium - Nature of Science in the Next Generation Science Standards: Translating Recommendations into Practice Presider: Kostas Kampourakis, University of Geneva

Presenters: Kostas Kampourakis, University of Geneva

William F. McComas, University of Arkansas

Norman G. Lederman, Illinois Institute of Technology

Gregory J. Kelly, Penn State University

Irene Neumann, Leibniz-Institute for Science and Mathematics Education

Alice Siu Ling Wong, The University of Hong Kong

Ross H. Nehm, SUNY Stony Brook

Symposium - Global Perspectives on Nature of Science in School Science Textbooks: Representations, Methodologies, Contexts, and Implications Presider: Christine V.

McDonald, Griffith University

Presenters: Christine V. McDonald, Griffith University

Fouad Abd-El-Khalick, University of Illinois at Urbana-Champaign

Saouma B. Boujaoude, American University of Beirut
Zoubeida R. Dagher, University of Delaware
Jeanne Brunner, University of Illinois at Urbana-Champaign
Maurice Di Giuseppe, University of Ontario Institute of Technology (UOIT)
Umesh Ramnarain, University of Johannesburg

Nature of Science Knowledge and Associated Understanding Presider: Dionysius T. Gnanakkan, Illinois Institute of Technology

Secondary Students' Understanding of Nature of Science in a Socioscientific Issues Context Dawnne M. LePretré, Illinois Institute of Technology-MSED

Quantum Physics, History, Philosophy and NOS in Traditional Physics Classrooms

Maria Vetleseter Vetleseter Boe, Norwegian Centre for Science Education

Ellen K. Henriksen, University of Oslo

Carl Angell, University of Oslo

The Use of NOS Understandings in the Evaluation of Science News by Non-Science Majors

Jessica Shuk Ching Leung, The University of Hong Kong

Alice Siu Ling Wong, The University of Hong Kong

Benny Hin Wai Yung, The University of Hong Kong

The Effect of Teaching Nature of Science on Students' Acceptance and Understanding of Evolution: Myth or Reality? Hernan Cofre, Pontificia Universidad Católica de Valparaíso

Claudia Vergara, University Alberto Hurtado

David Santibanez, Illinois Institute of Technology & Universidad Católica Silva Henríquez

Juan Jimenez, Illinois Institute of Technology

Angel Spotorno, Universidad de Chile

Symposium - Nature of Science and the Next Generation Science Standards:

Consideration, Critique and Conversation Presider: Richard A. Duschl, Penn State University

Presenters: Richard A. Duschl, Penn State University

Jonathan Francis Osborne, School of Education, Stanford University

William F. McComas, University of Arkansas

Valarie L. Akerson, Indiana University

David Stroupe, Michigan State University

Contextualization: How It Works on NOS Views and NOS Teaching of Pre-Service Science Teachers?

Jale Cakiroglu, Middle East Technical University

Kader Bilican, Kirikkale University

Valarie L. Akerson, Indiana University.

Toward Quantifying Responses to the Views of Nature of Science Questionnaire: Empirically Investigating Qualitative Coding

Jeanne Brunner, University of Illinois at Urbana-Champaign

Ryan Summers, University of Illinois - Urbana/Champaign

John Y. Myers, University of Illinois at Urbana-Champaign

Fouad Abd-El-Khalick, University of Illinois at Urbana-Champaign

Controversy Mapping for Studying Socioscientific Issues: Case Study of a Local Problem

Naira C. Diaz Moreno, University of Almeria Murut
Jiménez-Liso, University of Almería

Nature of Science and Scientific Inquiry Understandings in K-12 Classrooms

Presider: Renee S. Schwartz, Georgia State University Turkish Version of Students' Ideas
About Nature of Science Questionnaire: A Validation Study
Mustafa Cansiz, Artvin Coruh University
Nurcan Cansiz, Artvin Coruh University
Yasemin Tas, Ataturk University
Sundus Yerdelen, Kafkas University

Teaching Nature of Science and Scientific Inquiry to Diverse Early Primary Level Students

Judith S. Lederman, Illinois Institute of Technology
Selina Bartels, Illinois Institute of Technology
Norman G. Lederman, Illinois Institute of Technology

STEAM and the 'Two Cultures': Developing Matured Views on the Nature of Science Through Drama

Gary Weiser, Teachers College

Richard H. Novack, Teachers College

Sparkling Elementary Students' Attention to Ethical Considerations Through Experiences with Engineering Design

Theresa A. Hegedus, High Point University
Heidi B. Carlone, University of North Carolina at Greensboro

Framing and Expanding Constructions of Scientific Knowledge

Presider: Fouad Abd-El-Khalick, University of Illinois at Urbana-Champaign
A Wiser Goal for K-12 Science Education
John Y. Myers, University of Illinois at Urbana-Champaign
Fouad Abd-El-Khalick, University of Illinois at Urbana-Champaign
Construction of Nature of Technology Conceptual Framework
Hyunok Lee, Ewha Womans University, Republic of Korea
Dana L. Zeidler, University of South Florida
Hyunju Lee, Ewha Womans University
Transforming Teachers' Thinking About Engaging Students in Scientific Modeling in School Classrooms
Barbara A. Crawford, The University of Georgia

Examinations of, and Supports For, Scientific and Pseudoscientific Explanations

Presider: Shakhnoza Kayumova, University of Massachusetts Dartmouth

Aim, Working Status and Scientific Status of Crystal Healing as Pseudoscience From Middle School Students' Perspectives

Duygu Metin, Abant Izzet Baysal University
Jale Cakiroglu, Middle East Technical University
Gulsen Leblebicioglu, Abant Izzet Baysal University

Constructing Scientific Explanations: How Philosophically Informed Models Can Guide Instruction, Learning, and Assessment in NGSS

Sahar K. Alameh, University of Illinois and Urbana Champaign

Fouad Abd-El-Khalick, University of Illinois at Urbana-Champaign

Jonathan Waskan, University of Illinois at Urbana-Champaign

Educating Students for Science Policy: The Need for a Multidisciplinary Approach

Peter S. Garik, Boston University

The History of Nature of Science Representation in State Science Standards: A Systematic Assessment

Ryan Summers, University of Illinois - Urbana/Champaign

John Maddux, University of Illinois at Urbana-Champaign

Robert Wallon, University of Illinois at Urbana-Champaign

Sahar K. Alameh, University of Illinois at Urbana Champaign

Jeanne Brunner, University of Illinois at Urbana-Champaign

John Y. Myers, University of Illinois at Urbana-Champaign

Aybuke Pabuccu, Abant Izzet Baysal University

Gulsum Akyol, Aksaray University

Christina Silliman, University of Illinois at Urbana-Champaign

Saadeddine Shehab, University of Illinois at Urbana-Champaign

Fouad Abd-El-Khalick, University of Illinois at Urbana-Champaign

HPS&ST relevant papers at the 2016 Conference of the Nordic Network for Philosophy of Science

Lars-Göran Johansson, *Are electromagnetic fields real?*

Roberto Angeloni, *'Quantum postulates' and functional concepts: laying the foundation of a functional-based approach to quantum theory.*

Rasmus Jakslund, *A Dilemma for Empirical Realism: Idealism or Empiricism.*

Sreekumar Jayadevan, *Selective Realism or Involuntary Antirealism? An Analysis of Epistemic Implications in the Scientific Realism Debate.*

Nathan Oseroff, *Meeting the Scientific Anti-Realist's Epistemic Burdens.*

Riin Kõiv, *On how biological need not be biological.*

James Difrisko, *Functional Explanation and the Problem of Functional Equivalents.*

Andrea Togni, *Helmholtz, Du Bois-Reymond, and the transcendent difficulty of explaining the relation between sensations and the physical world*

Daniele Chiffi & Fabien Schang, *The Logical Burdens of Proof (Assertions and Hypotheses)*

Amirouche Moktefi, *The ideal of Logic as a social good reflected in Carroll's doctrine of existential import.*

Paweł Pruski, *Probabilistic kingdom - problem of objectivity in contemporary science.*

Raul Veede, *Isaac Newton's Adventures in the Soviet Union: The Problem of Trust in Historical Philosophy of Science.*

Samantha Copeland, *Was Fleming's discovery of penicillin a paradigmatic case of serendipity, or not?*

Veli Virmajoki, *Presentism and the Limits of Testing Philosophical Theories against the History of Science*

Book of abstracts with above and other communications:

<https://nnpscience.files.wordpress.com/2016/04/book-of-abstracts1.pdf>

2017 Division of History of Science and Technology (IUHPST/DHST) Prize for young Scholars

The International Union of the History and Philosophy of Science and Technology, Division of History of Science and Technology (IUHPST/DHST) invites submissions for the fourth DHST Prize for Young Scholars, to be presented in 2017. Initiated at the 22nd International Congress of History of Science in 2005 held in Beijing, the DHST Prize is awarded by the IUHPST/DHST every four years to up to five young historians of science and technology for outstanding doctoral dissertations, completed within last four years.

The 2017 DHST Prize does not specify distinct categories, but submissions must be on the history of science or technology in any part of the world. The Award Committee will endeavor to maintain the broadest coverage of subjects, geographical areas, chronology and civilizations (African, American, Asian, Islamic, Western and Ancient Civilisations, and others not included in the above list).

Each Prize consists of a certificate, assistance with travel and accommodation expenditures to the 25th IUHPST/DHST Congress in Rio de Janeiro in July 2017 and a waiver of registration fee. The winner of a prize whose thesis is relative to Islamic science is also awarded the Ihsanoglu Prize given by ISAR Foundation.

Submission deadline: **31 August 2016**.

Details at: <http://www.hpdst.gr/youngscholarsprize>

Oral Communications on HPS&ST at the 9th International Physics Conference of the Balkan Physical Union, 24-27 August 2015, Istanbul University, Istanbul, Turkey

Volkan Duran, *From 'Natural Philosopher' to 'Physicist': Analyzing The Concept of 'Science' in Terms of Two Titles in The Context of History of Physics*

Panagiotis Lazos & G. Vlahakis, *Physics Education in The Greek Community of Istanbul (19th C.)- Scientific Instruments and Experiments in Electrostatics.*

Boce Mitrevski & O. Zajkov, *Physics Laboratory as a Teaching Method: Some Advantages in Psychomotor and Affective Domain*

Derya Kaltakci Gurel, *The Effect of Science Demonstrations as A Community Service Activity On Preservice Science Teachers' Teaching Practices*

Ramazan Çeken, *An Interdisciplinary Viewpoint on Physics Concepts in Turkish Science Curriculum*

Mustafa Sahin Bulbul & L. K. Wee, *Using the Knowledge of Penumbra with a Trick Simulation*

Full program can be accessed at:

<http://bpu9.balkanphysicalunion.com/program/Bpu9-Accepted-Oral-Program.pdf>

British Society for Literature and Science Annual Conference 2016: Panel on “Pedagogies of Science”

Sarah Hanks (Oxford): *‘But, master, [...] tell me why that strange light of many tints shines upon the dark moon?’: Depictions of scientists and science teachers in the works of Robert Stawell Ball and Arabella Buckley*

Melanie Keene (Cambridge): *‘Begin with the girls’: narratives of science and education in juvenile periodicals, ca. 1860-1910*

Rachel Crossland (Chichester): *‘Facts, not theories’: W. A. Shenstone, school laboratories and the Cornhill Magazine, 1903-1908’*

Recent HPS&ST -Related Research Articles

ISIS (Vol. 107, N. 1, March 2016)

Focus: The history of Archives and the history of science.

Brown, Harvey R., Read, James (2016). Clarifying possible misconceptions in the foundations of general relativity, *Am. J. Phys* 84(5), 327-334. doi: 10.1119/1.4943264

Brusse, Carl (2016). Planets, pluralism, and conceptual lineage. *Studies in History and Philosophy of Modern Physics*, 53(1), 93-106.

de Risi, Vincenzo (2016). The development of Euclidean axiomatics: The systems of principles and the foundations of mathematics in editions of the Elements in the Early Modern Age. *Archive for History of Exact Sciences*, 1-86. Online first. doi: 10.1007/s00407-015-0173-9

Öztürk, F. O. (2016). Using The History of Science to Teach Scientific Inquiry. *Journal of Baltic Science Education*, 15(1), 28-47.

Topper, David, Vincent, Dwight (2016). Einstein's lecture in Pittsburgh, PA, December 1934: A note on further visual documentation. *Am. J. Phys* 84(5), 403-406. doi: 10.1119/1.4942904

Siddiqi, Asif (2016). Another global history of science: making space for India and China. *BJHS Themes*, 1-29. doi: 10.1017/bjt.2016.4

Wright, Aaron Sidney (2016). A beautiful sea: P. A. M. Dirac's epistemology and ontology of the vacuum. *Annals of Science*, 1-32. online first. DOI:10.1080/00033790.2016.1157731

Zuidervaarta, Huib J., Anderson, Douglas (2016). Antony van Leeuwenhoek's microscopes and other scientific instruments: new information from the Delft archives. *Annals of Science*, 1-32. Online first. DOI:10.1080/00033790.2015.1122837

Recent HPS&ST Related Books

Abraham, Bénédicte (2016). *Au commencement était l'action: Les idées de force et d'énergie en Allemagne autour de 1800*. Presses Universitaires du Septentrion: Lille

“Saisir l'évolution d'une époque ou d'un moment de crise, non plus par les événements qui la jalonnent ou les personnalités qui la dominent, mais par des notions ou concepts sensibles qui

font figure de « marqueurs » de changement d'époque : tel est le projet à l'origine du présent ouvrage.

Les termes 'Kraft' (force) et 'Energie' (énergie) ont connu en Allemagne autour de 1800 une fortune sans précédent, présenté une grande variété de formes et fait l'objet d'un transfert depuis les sciences dites « dures » vers un vaste champ métaphorique s'étendant à de nombreux domaines tels que l'histoire, la politique, la philosophie de l'histoire, la littérature ou les Beaux-arts.

Marqueurs de modernité, ces mots deviennent les mots-repères de toute une génération, révèlent une crise identitaire allemande et métaphorisent le moteur d'une évolution." (From the Publisher)

More information at: <http://www.septentrion.com/fr/livre/?GCOI=27574100126800>

Ault, C.R. (2015). *Challenging Science Standards: A Skeptical Critique of the Quest for Unity*. New York, NY: Rowan & Littlefield.

"In this important and timely book, Charles Ault leads us on a journey that thoughtfully questions the current focus on supposed "commonalities" across the different science disciplines. His work reveals the lamentable loss of both the rich context and the unique content particular to individual science disciplines when a unified (and simplified) approach to science is adopted. Numerous classroom and field based examples (e.g., Pillbug Projects) presented in the book highlight the significance of disciplinary science and will prove useful to educators and teacher educators as they embark on a "promising pathway towards understanding scientific expertise in valued contexts." (Nancy G. Nagel, Professor Emerita, Lewis & Clark College Graduate School of Education & Counseling)

"In an era when standards have become the preeminent metric for assessing educational quality, Charles Ault's *Challenging Science Standards* demonstrates a level of intellectual courage unfortunately rare in academic circles. He argues that the quest for educational standards mirrors the bureaucratic quest for order, measurement, and accountability, a pursuit that with forests destroys biological diversity and reduces a woodland's bounty to only a few products. He suggests that the same thing happens in schools when a false unity is imposed upon the methodological and conceptual diversity of the scientific disciplines. Rather than seeking curricular coherence through the invention of a collection of fictional scientific universals, Ault argues that coherence can be better achieved by inviting students to enact the complexity of the different disciplines in the places where they live. The unity sought by curriculum designers can then be achieved through story, lived experience, and real-life contexts. This is a recipe for enlivening interest, value, and meaning—a recipe that seem more likely to engender powerful learning than complex grids of behavioral objectives." (Gregory A. Smith, professor of Education, Lewis & Clark College Graduate School of Education & Counseling)

"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." (Joseph D. Novak, Professor Emeritus, Cornell University)

More information at: <https://rowman.com/ISBN/9781475818475/Challenging-Science-Standards-A-Skeptical-Critique-of-the-Quest-for-Unity#>

Bernhardt, Chris (2016). *Turing's Vision: The Birth of Computer Science*. Cambridge, MA: The MIT Press.

“Over the past several decades, Alan Turing, known as the father of computer science, has become an intellectual and cultural icon. Chris Bernhardt has written a very clear and accessible book that explains Turing’s work, showing how his ideas have developed into some of the most important ideas in computer science today.”

Noson S. Yanofsky author of *The Outer Limits of Reason: What Science, Mathematics, and Logic Cannot Tell Us*

“The dazzling array of computer applications, from desktop to cell phone, has obscured the play of ideas that first set our modern era in motion. In this account, Bernhardt reveals the crucial contribution to these developments made by Alan Turing and other early computer scientists. A marvelous book.” A. K. Dewdney, Professor Emeritus, Department of Computer Science, University of Western Ontario

More information at: <https://mitpress.mit.edu/books/turings-vision>

Burgess Jr., Douglas (2016). *Engines of Empire Steamships and the Victorian Imagination*. Stanford: Stanford University Press.

“Steamships like the Great Eastern occupied a singular place in the Victorian mind. Crossing oceans, ferrying tourists and troops alike, they became emblems of nationalism, modernity, and humankind’s triumph over the cruel elements. Throughout the nineteenth century, the spectacle of a ship’s launch was one of the most recognizable symbols of British social and technological progress. Yet this celebration of the power of the empire masked overconfidence and an almost religious veneration of technology. Equating steam with civilization had catastrophic consequences for subjugated peoples around the world. *Engines of Empire* tells the story of the complex relationship between Victorians and their wondrous steamships, following famous travelers like Mark Twain, Charles Dickens, and Jules Verne as well as ordinary spectators, tourists, and imperial administrators as they cross oceans bound for the colonies. Rich with anecdotes and wry humor, it is a fascinating glimpse into a world where an empire felt powerful and anything seemed possible—if there was an engine behind it.” (From the Publisher)

More information at: <http://www.sup.org/books/title/?id=25057>

Diogo, M., Laak, D. van (2016). *Europe Globalizing: Mapping, Exploiting, Exchanging*. Palgrave Macmillan UK: London.

Over the course of 150 years, Europe’s protean technologies inspired and underpinned the globalizing ambitions of European nations. This book aims to show how technology mediated European influence in the rest of the world and how this mediation in turn transformed Europeans. Europeans mapped, they exploited, and they exchanged - their interactions ranged from technological and biological genocide to treaties of cooperation and the construction of elaborate colonial infrastructures. Quite aside from the enormous variety of political settings, cultures and colonial programs, interrelations created dependencies on both sides. Cultural transfers were rarely unidirectional, and often a kind of Pidgin-knowledge emerged, a hybrid fusion of European and local knowledge and skills. As observers have rightly pointed out, Europe played both the role of ‘Prometheus unbound’ and the ‘Sorcerer’s apprentice’.

The Making Europe series was awarded the Freeman Award by the European Association for the Study of Science and Technology (EASST) in 2014, in recognition of its significant contribution to the interaction of science and technology studies with the study of innovation.

More information at: <http://tinyurl.com/hjvr64l>

Gingras, Yves (2016). *L' impossible dialogue. Sciences et religions*. PUF: Paris

“Le 5 mars 1616, un décret de la Congrégation de l'Index annonçait officiellement la condamnation des idées de Copernic sur le mouvement de la Terre. Cette censure ecclésiastique est devenue l'emblème d'une négation de l'autonomie de la recherche scientifique par les dogmes religieux. Aujourd'hui, la question des relations entre sciences et religions et des appels au « dialogue » entre ces deux domaines pourtant si éloignés par leurs objets et leurs méthodes refait surface.

Le thème du conflit a dominé les débats qui ont opposé depuis le XVIIe siècle les savants aux autorités religieuses sur des questions d'astronomie, de géologie, d'histoire naturelle ou sur l'origine de l'homme et des religions. Cet essai prend le contre-pied du courant actuellement dominant chez les historiens des sciences qui minimise les conflits les plus célèbres entre sciences et religions et propose une version œcuménique et édulcorée de l'histoire des rapports entre deux institutions, dont chacune tente d'imposer sa vision du monde, l'une fondée sur la nature, l'autre sur le surnaturel.” (From the Publisher)

More information at:

https://www.puf.com/content/L_impossible_dialogue_Sciences_et_religions

Hagar, Amit (2016). *Discrete or Continuous? The Quest for Fundamental Length in Modern Physics*. Cambridge: Cambridge University Press.

“The idea of infinity plays a crucial role in our understanding of the universe, with the infinite spacetime continuum perhaps the best-known example - but is spacetime really continuous? Throughout the history of science, many have felt that the continuum model is an unphysical idealization, and that spacetime should be thought of as 'quantized' at the smallest of scales. Combining novel conceptual analysis, a fresh historical perspective, and concrete physical examples, this unique book tells the story of the search for the fundamental unit of length in modern physics, from early classical electrodynamics to current approaches to quantum gravity. Novel philosophical theses, with direct implications for theoretical physics research, are presented and defended in an accessible format that avoids complex mathematics. Blending history, philosophy, and theoretical physics, this refreshing outlook on the nature of spacetime sheds light on one of the most thought-provoking topics in modern physics.” (from the Publisher)

More information at: <http://tinyurl.com/z37hb4y>

Lamberth, David. C. (Ed.) (2016). *James and Royce Reconsidered: Reflections on the Centenary of Pragmatism*. Cambridge, MA: Harvard University Press.

“In the first decade of the twentieth century, William James and Josiah Royce, both professors of philosophy at Harvard, towered over American philosophy and exerted wide influence on European thought. Both thinkers delivered Gifford Lectures on Natural Religion in Scotland, as well as Lowell Lectures in Boston.

A century following the publication of James's Lowell Lectures, known as Pragmatism, and Royce's delivery of his lectures that would become *The Philosophy of Loyalty*, renowned biographers, historians, and philosophers of American thought and philosophy gathered at Harvard to assess the legacy and continued interest in both thinkers. One of the most vibrant conferences on these figures in living memory, contributors presented papers and debated the import of James's and Royce's thought for understanding their time and for the present and

future. Noteworthy both for the presence of most leading scholars in the field and for its attention to the European influence of these thinkers and the revival of interest in America and Europe, this volume offers a unique view of the state of the discussion on James and Royce across several disciplines.” (From the Publisher)

More information at: <http://www.hup.harvard.edu/catalog.php?isbn=9780674033054>

Laats, A., Siegel, H. (2016). *Teaching Evolution in a Creation Nation*. University of Chicago Press: Chicago

“No fight over what gets taught in American classrooms is more heated than the battle over humanity’s origins. For more than a century we have argued about evolutionary theory and creationism (and its successor theory, intelligent design), yet we seem no closer to a resolution than we were in Darwin’s day. In this thoughtful examination of how we teach origins, historian Adam Laats and philosopher Harvey Siegel offer crucial new ways to think not just about the evolution debate but how science and religion can make peace in the classroom.

Laats and Siegel agree with most scientists: creationism is flawed, as science. But, they argue, students who believe it nevertheless need to be accommodated in public school science classes. Scientific or not, creationism maintains an important role in American history and culture as a point of religious dissent, a sustained form of protest that has weathered a century of broad—and often dramatic—social changes. At the same time, evolutionary theory has become a critical building block of modern knowledge. The key to accommodating both viewpoints, they show, is to disentangle belief from knowledge. A student does not need to believe in evolution in order to understand its tenets and evidence, and in this way can be fully literate in modern scientific thought and still maintain contrary religious or cultural views. Altogether, Laats and Siegel offer the kind of level-headed analysis that is crucial to finding a way out of our culture-war deadlock.” (From the Publishers)

“*Teaching Evolution in a Creation Nation* provides not only a readable and reliable survey of past encounters but a sensible guide to future practices. Rather than promoting public-school classrooms as pulpits for converting skeptical students to evolution (which has rarely proved an effective technique in any case), they recommend helping students to understand the arguments and evidence for evolution. This book should be required reading for all evolution educators.” (By Ronald L. Numbers)

More information at: <http://press.uchicago.edu/ucp/books/book/chicago/T/bo22541379.html>

Lenoir, Yves (2016). *La comédie atomique: L’histoire occultée des dangers des radiations*. Paris: Éditions La Découverte.

“Le bilan humain de la catastrophe de Tchernobyl d’avril 1986 a été définitivement figé avec le rapport adopté en 2006 par l’ONU et les gouvernements biélorusse, russe et ukrainien. Ce bilan minore considérablement le nombre de victimes, car il « ignore » de nombreuses séquelles constatées chez les millions de personnes exposées aux retombées radioactives et chez les 800 000 « liquidateurs » de l’accident. Et, en octobre 2011 un expert russe qui avait coordonné la rédaction de ce rapport a affirmé au Japon que la santé de la population touchée par les rejets radioactifs de la catastrophe de Fukushima, en mars 2011, ne serait pas affectée...

Comment expliquer cette scandaleuse culture du déni des effets de la radioactivité ? En se plongeant dans les archives, en remontant aux premiers usages intensifs des rayons X et du radium. C’est ce qu’a fait Yves Lenoir pour ce livre où il retrace la surprenante histoire de la construction progressive d’un système international de protection radiologique hors normes

au sein de l'ONU, qui minore systématiquement les risques et les dégâts des activités nucléaires.

On apprend ainsi comment les promesses de l'« énergie atomique » civile ont fait l'objet dans les années 1950 d'une intense propagande au niveau mondial : non seulement cette énergie satisfera sans danger les besoins de l'humanité, mais l'usage généralisé de faibles doses de radioactivité permettra de décupler la production agricole ! Surtout, Yves Lenoir révèle que les normes de protection des travailleurs de l'énergie atomique ou des populations qui pourraient être exposées après un accident nucléaire ont été définies par une poignée d'experts, en dehors de tout contrôle démocratique. Il explique leurs méthodes pour construire une « vérité officielle » minimisant les conséquences de Tchernobyl. Et comment ces procédés ont été mis en œuvre, en accéléré, après Fukushima. Une remarquable enquête historique, riche de nombreuses révélations". (From the Publisher)

Mantzavinos, C. (2016). *Explanatory Pluralism*. Cambridge: Cambridge University Press.

“Explaining phenomena is one of the main activities in which scientists engage. This book proposes a new philosophical theory of scientific explanation by developing and defending the position of explanatory pluralism with the help of the notion of 'explanatory games'. Mantzavinos provides a descriptive account of the explanatory activity of scientists in different domains and shows how they differ from commonsensical explanations offered in everyday life by ordinary people and also from explanations offered in religious contexts. He also shows how an evaluation and a critical appraisal of explanations put forward in different social arenas can take place on the basis of different values. Explanatory Pluralism provides solutions to all important descriptive and normative problems of the philosophical theory of explanation as illustrated in sophisticated case studies from economics and medicine, but also from mythology and religion.” (from the Publisher)

More information at: <http://www.cambridge.org/pt/academic/subjects/philosophy/philosophy-science/explanatory-pluralism?format=HB>

Peters, Benjamin (2016). *How Not to Network a Nation: The Uneasy History of the Soviet Internet*. Cambridge, MA: The MIT Press.

“Between 1959 and 1989, Soviet scientists and officials made numerous attempts to network their nation—to construct a nationwide computer network. None of these attempts succeeded, and the enterprise had been abandoned by the time the Soviet Union fell apart. Meanwhile, ARPANET, the American precursor to the Internet, went online in 1969. Why did the Soviet network, with top-level scientists and patriotic incentives, fail while the American network succeeded? In *How Not to Network a Nation*, Benjamin Peters reverses the usual cold war dualities and argues that the American ARPANET took shape thanks to well-managed state subsidies and collaborative research environments and the Soviet network projects stumbled because of unregulated competition among self-interested institutions, bureaucrats, and others. The capitalists behaved like socialists while the socialists behaved like capitalists. After examining the midcentury rise of cybernetics, the science of self-governing systems, and the emergence in the Soviet Union of economic cybernetics, Peters complicates this uneasy role reversal while chronicling the various Soviet attempts to build a “unified information network.” Drawing on previously unknown archival and historical materials, he focuses on the final, and most ambitious of these projects, the All-State Automated System of Management (OGAS), and its principal promoter, Viktor M. Glushkov. Peters describes the rise and fall of OGAS—its theoretical and practical reach, its vision of a national economy managed by network, the bureaucratic obstacles it encountered, and the institutional stalemate that killed it. Finally, he considers the implications of the Soviet experience for today’s networked world.” (from the Publishers)

More information at: <https://mitpress.mit.edu/hownot>

van Leeuwen, Joyce (2016). *The Aristotelian Mechanics: Text and Diagrams*. Boston Studies in the Philosophy and History of Science, Vol 316, Dordrecht: Springer.

“This book examines the transmission processes of the Aristotelian Mechanics. It does so to enable readers to appreciate the value of the treatise based on solid knowledge of the principles of the text. In addition, the book’s critical examination helps clear up many of the current misunderstandings about the transmission of the text and the diagrams. The first part of the book sets out the Greek manuscript tradition of the Mechanics, resulting in a newly established stemma codicum that illustrates the affiliations of the manuscripts. This research has led to new insights into the transmission of the treatise, most importantly, it also demonstrates an urgent need for a new text. A first critical edition of the diagrams contained in the Greek manuscripts of the treatise is also presented. These diagrams are not only significant for a reconstruction of the text but can also be considered as a commentary on the text. Diagrams are thus revealed to be a powerful tool in studying processes of the transfer and transformation of knowledge. This becomes especially relevant when the manuscript diagrams are compared with those in the printed editions and in commentaries from the early modern period. The final part of the book shows that these early modern diagrams and images reflect the altered scope of the mechanical discipline in the sixteenth century.” (From the publisher)

More information at: <http://www.springer.com/us/book/9783319259239>

Weinert, Friedel (2016). *The Demons of Science: What They Can and Cannot Tell Us About Our World*. Dordrecht: Springer.

“This book is the first all-encompassing exploration of the role of demons in philosophical and scientific thought experiments. In Part I, the author explains the importance of thought experiments in science and philosophy. Part II considers Laplace’s Demon, whose claim is that the world is completely deterministic. Part III introduces Maxwell’s Demon, who - by contrast - experiences a world that is probabilistic and indeterministic. Part IV explores Nietzsche’s thesis of the cyclic and eternal recurrence of events. In each case a number of philosophical consequences regarding determinism and indeterminism, the arrows of time, the nature of the mind and free will are said to follow from the Demons’s worldviews. The book investigates what these Demons - and others - can and cannot tell us about our world.” (From the publisher)

More information at: <http://www.springer.com/gb/book/9783319317076#aboutBook>

Coming HPS&ST-Related Conferences

May 26-28, 2016, 23rd Symposium on Chemical and Science Education, Dortmund, Germany.

Details at: <http://www.chemiedidaktik.uni-bremen.de/symp2016/>

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 28-3, 2016, Annual Meeting of the Canadian Society for History and Philosophy of Mathematics (CSHPM), Calgary, Canada

Details at: <http://www.cshpm.org/meeting/>

June 13-14, 2016, Eighth Workshop on the Philosophy of Information, University of Ferrara,

- Italy
Details at: <http://www.socphilinfo.org/workshops/8wpi>
- 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 8-9, 2016, 'Representations of Nature(s), Humans and God(s) in Literature', International Commission on Science and Literature DHST/IUHPST Hermoupolis, Syros Island, Greece.
Details from: George Vlahakis gvlahakis@yahoo.com
- July 10-15, 2016, Second World Conference on Physics Education, São Paulo, Brazil.
Details at: <http://www.wcpe2016.org/en/>
- 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 1-4, International Society for the Philosophy of Chemistry, Conference, Boca Raton, Florida, USA
Details at: <https://sites.google.com/site/ispc2016/program>
- 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 1-2, 2016, Teaching & Learning in Early Modern England: Skills & Knowledge in Practice, University of Cambridge, Cambridge, UK.
- September 5-7, 2016, European Physical Society, *2nd International Conference on the History of Physics*, Pöllau Castle, Pöllau, Austria.
Abstract submission deadline: 28 April 2016
Details at: www.historyofphysics.org
- September 16-17, 2016, Mathematical Biography: A MacTutor Celebration, St Andrews University, Scotland
Details at: <http://www.mcs.st-and.ac.uk/mathbiog/>
- September 19-23, 2016, University of Copenhagen, Graduate HPS&ST course
Details at: www.ind.ku.dk/hpscouse
And from: Ricardo Karam (ricardo.karam@ind.ku.dk).
- September 22-23, 2016, Philosophy of Scientific Experimentation 5(PSX5), University of Belgrade, Belgrade, Serbia
More information at: <http://philsci.org/images/docs/flyers/Flyer.pdf>
- 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>
- October 26-28, 2016, Conference on science and democracy, Pisa, Italy
Details at: <http://iasc.me/2016-conference/>
- October 26-28, 2016, Nature of Science Symposium, Limerick, Ireland
Details at: LimerickNOS2016@gmail.com
- October 28, 2016, Science and Religion in Education Conference, Oxford, UK
Details at: <http://www.faradayschools.com/events/conference/>
- October 28-30, 2016, 32nd Boulder Conference on the History and Philosophy of Science “Gravity: Its History and Philosophy”
Deadline for Submission: August 1, 2016.
Contact: Allan Franklin Allan.Franklin@colorado.edu
- 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: Symposium: The Dilemmas of Upright Scientists, Israel, Tel-Aviv University
Inquiries to: Yuliana Litov, ylitov@tauex.tau.ac.il
- December, 15-18, 2016, 3rd Asian HPS&ST Conference, Pusan National University, South Korea.
Inquiries to: Hwe-Ae Seo, haseo@pusan.ac.kr
- January 5-8, 2017, 131th Annual Meeting of the American Historical Association, Denver, Colorado, USA.
Details at: <http://historians.org/annual-meeting/future-meetings>
- February 16-20, 2017, AAAS Annual Meeting, Boston, USA
Details at: <https://aaas.confex.com/aaas/2017/cfp.cgi>
- March 24-25, 2017, Biodiversity and its Histories, University of Cambridge
Deadline for submission: 1 September 2016
Details at: <http://philsci.org/images/docs/flyers/CFP.pdf>
- July 4-7, 2017, 14th IHPST International Biennial Conference, Ankara, Turkey.
Conference Chairs Mehmet Fatih Taşar [mftasar@gazi.edu.tr] & Gultekin Cakmakci [cakmakci@hacettepe.edu.tr]
Details at: <http://ihpst.net/>

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>

July 23-29, 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>

September 7-10, 2017, 8th Tensions of Europe Conference Athens, Greece.

Details at: <http://8toe2017.phs.uoa.gr/>

Assistance Required

In one form or another, this monthly HPS&ST newsletter/note has been produced and distributed for the past 25+ years. Since its original printed, folded and posted beginnings, it has served as a vehicle for keeping the wide and ever-growing international community of HPS scholars who have education interests and the equally wide community of science educators who have HPS interests in contact with each other and with research and activities in the HPS&ST field.

Since 1987 its editor has been Michael Matthews, School of Education, UNSW (m.matthews@unsw.edu.au). Over the years there have been sterling assistant editors. For the past year Paulo Maurício from Lisbon, Portugal (<https://sites.google.com/site/pauloeigenvalue/home>) has been giving invaluable assistance in gathering material for the newsletter. Another assistant would be most useful in enhancing the content and reach of the newsletter/note. Having net access to journal holdings is important, as is some ability to make contact with the multitude of international and national HPS associations and Science Education associations with interests in the field. Anyone interested in giving such assistance can make direct contact with the editor.