



## **International History, Philosophy and Science Teaching Group**

**NEWSLETTER**

**November 2007**

**[www.ihpst.org](http://www.ihpst.org)**

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#### **1. IHPST Elections**

The first elections for a Governing Board of the International History, Philosophy and Science Teaching Group (IHPST) are currently being conducted; with ballots to be returned by November 16. These elections follow the adoption of By-laws for the Group at its June Calgary conference. Those elected will hold office until the Group's next conference to be held at Notre Dame University, June 24-28, 2009.

The results should be able to be announced in the December IHPST newsletter.

#### **2. *Science & Education Report***

##### **(a) Volume 16 Numbers 9-10,**

Volume 16 Numbers 9-10 of *Science & Education* has been printed and mailed to subscribers by Springer Publishing.

Contents are:

NAHUM KIPNIS / Discovery in Science and in Teaching Science

STUART ROWLANDS & ROBERT CARSON / Teaching the Conceptual Revolutions in  
Geometry

RICARDO LOPES COELHO / The Law of Inertia: How Understanding its History and Meaning  
can Improve Physics Teaching

SIBEL ERDURAN, AGUSTIN ADURIZ BRAVO & RACHEL MAMLOK NAAMAN /  
Developing Epistemologically Empowered Teachers: Examining The Role Of Philosophy of  
Chemistry In Teacher Education

MARIE-PIERRE QUESSADA & PIERRE CLEMENT / An Epistemological Approach to French  
Syllabi on Human Origins During the 19th & 20th Centuries

LENA HANSSON & ANDREAS REDFORS / Upper Secondary Students in Group Discussions  
about Physics and our Presuppositions of the World

EMILY J. BORDA / Applying Gadamer's Concept of a Hermeneutic Disposition to Science and  
Science Education

The above articles, and all published articles since Volume One, 1992, and all articles that are  
currently accepted and 'in print', are available on the web via Springer's journal site:

[www.springer.com/journal/11191](http://www.springer.com/journal/11191) .

#### **(b) Subscription Renewal and 2008 Numbers**

The above Vol.16 Nos.9-10 of the journal are the last numbers for 2007. Those whose subscription  
to the print version of the journal expires in 2007, and those wanting a new subscription, need to  
subscribe soon. Subscriptions are USD100 (1 year), USD180 (2 years), USD270 (3 years). For  
students, retired faculty and scholars in depressed economies, the subscription is half of the  
foregoing. Subscriptions can be effected at [www.ihpst.org](http://www.ihpst.org) under 'journal'.

Volume 17, to be published through 2008, will sustain the high quality of the journal.  
As in previous volumes, some thematic issues will be published:

*Teaching and Assessing the Nature of Science* Michael Clough & Joanne Olson (eds.)

*Studies in Historical Replication in Psychology* Ryan Tweney (ed.)

*Women, Feminist Epistemology, and Science Education* Cassandra Pinnick (ed.)

#### **(c) Journal on the Web**

The journal *Science & Education* is now available on the web at: <http://www.springerlink.com/>  
(then PUBLICATIONS, then S, then 'Science & Education'), or more directly at:  
[www.springer.com/journal/11191](http://www.springer.com/journal/11191) . Or the articles can be accessed directly at:  
<http://springerlink.metapress.com/content/1573-1901/>

All articles can be downloaded as pdf files for free if the individual's institution subscribes to the  
relevant Springer journal package; otherwise they can be downloaded for a fee.

Alternatively subscription renewals for printed journals and new subscriptions (USD95 pa, with  
discount for students, retired faculty and scholars from depressed economies), can be effected at the  
IHPST web site: [www.ihpst.org](http://www.ihpst.org)

The Springer site is now linked to Google, and articles can be searched in Google by typing in author name and first words of title. This goes direct to the Springer site and the pdf file of the article.

Approximately 3,000 institutions around the world have subscribed to the on-line version of the journal, while many institutions have subscriptions to both print and on-line versions.

The on-line version is heavily used. In 2006 there were 23,584 article-downloads, an increase of one thousand over 2005 downloads. These figures make *Science & Education* one of the most down-loaded of all Springer education journals.

The web site provides many services to researchers:

- # The 'On Line First' section allows access to all accepted, forthcoming articles in the journal. As soon as an article is accepted for publication, a typeset pdf version of it is posted on the web and can be accessed by individual journal subscribers or by individuals whose institutions subscribe to a Springer package that includes '*Science & Education*'.
- # The Contents of each issue of the journal, back to Volume 1 Number 1 in 1992, are available. These can be downloaded by subscribers and individuals whose institutions subscribe to the journal. They are also available, at a cost, to non-subscribers.
- # Full details of the Editorial Board and Submission process are posted.

#### **(d) Manuscript Submissions**

Scholars can submit manuscripts in file form direct to the journal at:

[www.editorialmanager.com/sced/](http://www.editorialmanager.com/sced/)

Thereafter they can check on its progress through the review process. Most submissions are reviewed by three senior scholars, usually involving a spread of educator, historian, philosopher or cognitive scientist. The submission site also has a guide to the journal's format and style conventions.

### **3. Darwinian Anniversary Year, 2009 Journal Special Issue**

The year 2009 is a double anniversary: 200 years since Darwin was born (12 February 1809) and 150 years since the publication of *On the Origin of Species* (24 November 1859). To celebrate this anniversary a special issue of *Science & Education* will be published.

Researchers working on areas related to Darwinism and evolution education are invited to contribute to this special issue. Conceptual, theoretical, empirical or position-based manuscripts are welcome. Examples of topics may include (but are not limited to) the following:

<ul style="list-style-type: none"><li>• Darwinism in the history and philosophy of science</li><li>• Darwin's methodology and theorizing</li><li>• Historical treatments of <i>The Origin</i></li><li>• Darwinism and politics</li><li>• Darwinism and religion</li><li>• Current status of evolutionary theory</li><li>•</li></ul>	<ul style="list-style-type: none"><li>• Evolution and teleology</li><li>• Empirical research in evolution education</li><li>• Evolution and the Nature of Science</li><li>• Creationism and Intelligent Design</li><li>• Cognitive barriers in understanding evolution</li><li>•</li></ul>
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- Public understanding and acceptance or rejection of evolution, especially in non-Western cultures
- Evolutionary explanations

- Rationales and strategies for teaching evolution when it is controversial
- The teaching of evolution in cultures where Darwinism is rejected
- *Other appropriate topics*

Submission Date: **December 31, 2008**

Anticipated Publication Date: **November, 2009**

Manuscripts, with Abstract, should be submitted for review direct to:

[www.editorialmanager.com/sced/](http://www.editorialmanager.com/sced/)

Notification of intention to submit and subject matter is appreciated as it assists coordination and planning of the issue. Questions and inquires should be directed to either of the guest editors:

**David W. Rudge**

Biological Sciences & The Mallinson Institute  
for Science Education, Western Michigan  
University, USA  
email: [david.rudge@wmich.edu](mailto:david.rudge@wmich.edu)

**Kostas Kampourakis**

Geitonas School,  
Athens,  
GREECE  
email: [kkamp@ath.forthnet.gr](mailto:kkamp@ath.forthnet.gr)

**4. Position Available: History, Philosophy and Science Teaching  
Florida State University, FSU-Teach Unit**

In what might be a world's first, Florida State University is advertising for an open-rank Professorship in the field of 'History, Philosophy and Science Teaching', with the successful candidate being responsible for teaching undergraduate and graduate courses in HPS for students in the science education programme, and other relevant programmes.

The IHPST Group especially welcomes this development as it was at FSU in 1987, twenty years ago, that the ideas for the group first developed when this editor was there on sabbatical leave in the Philosophy Department and was invited by Jaakko Hintikka to guest edit a special issue of *Synthese* journal on the topic of 'HPS&ST' (vol.80 no.1, 1989). Because of the quality and number of submissions for the issue, arrangements were made for special issues of other journals to be published *Educational Philosophy and Theory* vol.20, no.2, 1988, *Interchange* vol.20 no.2, 1989, *Studies in Philosophy and Education* vol.10 no.1, 1990.

These journal submissions provided a foundation for the first HPS & ST Conference which was held in Tallahassee in 1989. David Gruender and Ken Tobin were the local organisers. From this most successful conference, the IHPST Group formed. So it is a cause for some celebration that twenty years later Florida State University is among the first, if not the first, university to offer a professorship in HPS for Science Teachers.

The FSU position advertisement follows:

*FSU-Teach is searching for a Professor (Open Rank) who specializes in the History and Philosophy of Science (HPS) whose responsibilities would include: engaging in a well-defined scholarship agenda; teaching history and philosophy of science to undergraduate students preparing to be science or mathematics teachers; and teaching graduate courses and mentoring*

graduate students in the Program in the History and Philosophy of Science (HPS) and/or the appropriate home department (e.g., History, Philosophy, or Religion). Tenure will reside in the home department. The successful candidate will participate in ongoing research, initiate new research projects, and apply for external funding.

FSU-Teach is an interdisciplinary unit, designed to prepare middle and secondary science and mathematics teachers through close interactions between faculty members from the Colleges of Arts & Sciences and Education. FSU-Teach is designed to attract faculty and students of the highest caliber to the participating departments and involve them all in issues of reform-minded math and science teaching.

Minimum qualifications include: earned doctorate in the History and Philosophy of Science, Science Education (with a strong background in HPS), or a related discipline; and documented evidence of accomplishment in teaching, research, and service. Experience working with teachers or with the K-12 system is desirable as is training in one of the sciences. Candidates must have a commitment to teacher education, excellence in teaching, and continued scholarly activity.

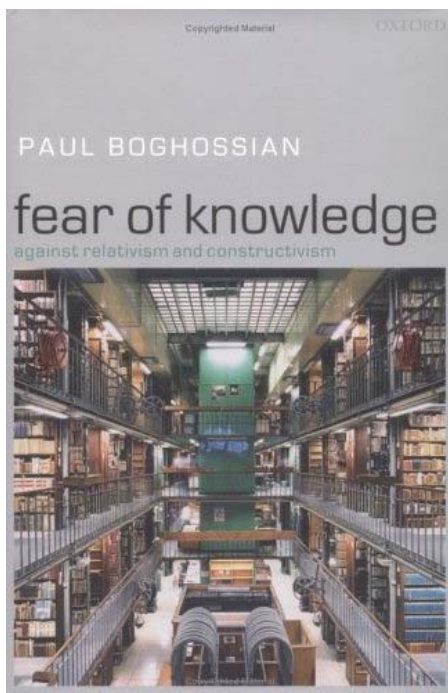
FSU's interdisciplinary program in History and Philosophy of Science is housed in the College of Arts and Sciences and is a collaboration between the departments of History, Philosophy, and Religion. The HPS Program currently offers a master's degree and has begun the approval process for a doctoral degree program. Students can also pursue the doctorate in any of the three contributing departments.

Application packages should also be sent to Drs. Sherry Southerland and Fredrick Davis (Co-Chairs, FSU-TEACH History and Philosophy of Science Search Committee, c/o Office of Science Teaching Activities, 227 Conradi Building, P.O. Box 3061100, Tallahassee, FL, 32306-1100). Application packages sent to the Search Committee Chairs should include a letter of application documenting interest and qualifications, current vita, writing sample(s), and three letters of reference. For further information contact Dr. Southerland (southerl@coe.fsu.edu). Review of applications will begin December 1, 2007.

## 5. Booknotes

(1) Paul Boghossian, *Fear of Knowledge: Against Relativism and Constructivism*, Oxford University Press, Oxford-New York, 2006, ISBN: 0-19-928718-x, 152 pp.

This long awaited book has been written by Paul Boghossian, Professor of Philosophy at New York



University and at heart is a well aimed critique of several epistemological and philosophical themes collectively known as social constructivism. However, it is not just an abstract philosophical work, as the author places himself firmly against the backdrop created by the 'Science wars' and the several 'equal validity' positions advocated by proponents of relativism.

Prof. Boghossian's book starts by discussing what social constructivism means and coming up with a clear definition of an otherwise murky philosophical position. He then distinguishes three theses of constructivism: Constructivism about truth, constructivism about justification and constructivism as relating to the social factors playing a role in "why we believe what we believe." He then proceeds to assess the plausibility of all three theses. The author not only presents

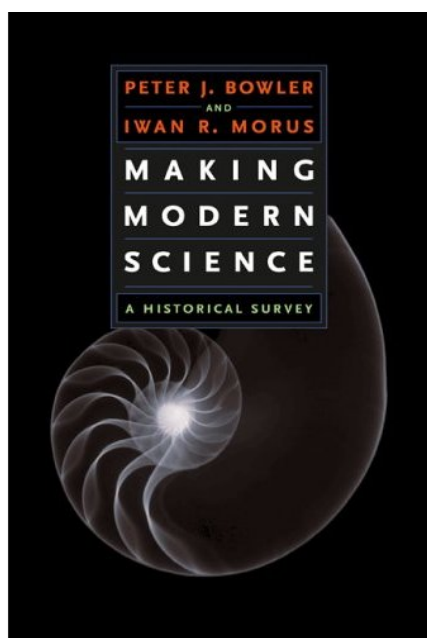
all the already available epistemological arguments against social constructivism, but also presents some new takes on the subject.

The book is rather short and certainly does not aim to be an extensive survey of all constructivist literature. However, Prof. Boghossian writes clearly and extensively in the topics he identifies as crucial to the core of the discussion. After completing this book, the reader has certainly formed an opinion on the most direct and powerful objections raised by analytic philosophy against social constructivism today.

KOSTAS TAMPAKIS [ambulafia@ath.forthnet.gr](mailto:ambulafia@ath.forthnet.gr), PhD student, University of Athens

(2) Bowler, Peter J. and Iwan Rhys Morus, 2005, *Making Modern Science: A Historical Survey*. University of Chicago Press. 464 p., Cloth \$65.00sc ISBN: 978-0-226-06860-2 (ISBN-10: 0-226-06860-9) Spring 2005; Paper \$25.00sp ISBN: 978-0-226-06861-9 (ISBN-10: 0-226-06861-7) Spring 2005

<http://www.press.uchicago.edu/cgi-bin/hfs.cgi/00/16577.ctl>



The book *Making Modern Science* by Peter Bowler and Iwan Morus presents episodes and themes in the history of science. It is designed to be used as a text in introductory courses in the history of science as well as a single-volume introduction for the general reader.

The first section considers key episodes in the development of modern science, since the Scientific Revolution, presenting most major accomplishments in geology, physics, chemistry and biology. Contrary to many introductory books in the philosophy and the history of science that usually focus on physics, astronomy and particular aspects of

biology such as Darwinism and genetics, this book also presents the most important developments in chemistry, geology and ecology. Not only Newton, Galileo, Darwin or Mendel but also Priestley, Wegener and many more are given enough space. In every case the scientific ideas are clearly described, while being presented in the context of their development. Interesting historiographical details are given in many cases which highlight the interaction of science with society and describe how science was done in a particular cultural, political and social context.

The second section is a presentation and analysis of the most important themes stemming from the interaction of science with society, in particular of those cases where the discoveries of science forced society to reconsider its religious, moral, or philosophical values. The book discusses all major issues related to the way science affects many aspects of human life: technology, medicine, war, religion to name a few. Hence, rather than just being a chronicle of major developments in science, the book stands as a critical review of particular ways of interaction between science and society throughout the years. This interaction can be studied through the chapters on the themes, without needing to read all the historical details provided in the chapters on the episodes.

What is more important is that presenting either episodes or themes, all chapters of the book can be read independently each providing a separate list of references. However, the chapters are not totally separated. The authors have provided cross-references between chapters of the two sections. The issues raised in the chapters on the episodes in the history of science are further discussed in the

relevant chapters of the themes. On the other hand, if one starts with the themes, he can refer to the chapters on the episodes for further information on the historical examples described. According to the authors' intentions, the cross-references do help the general reader fit the material together and provide a comprehensive overview of the history of science.

In general, *Making Modern Science* is a very useful book work that provides an accessible and critical introduction, of reasonable length, to the history of modern science.

KOSTAS KAMPOURAKIS, Geitonas School, Athens, Greece, email: [kkamp@ath.forthnet.gr](mailto:kkamp@ath.forthnet.gr)

## 6. Current Research

Apart from contributions to *Science & Education* the following are some papers published in recent years that bear upon the research concerns of the IHPST Group.

Suggestions for up-dating this list should be sent to the Editor at [m.matthews@unsw.edu.au](mailto:m.matthews@unsw.edu.au)

- Niaz, M.: 2006, 'Facilitating Chemistry Teachers' Understanding of Alternative Interpretations of Conceptual Change', *Interchange* **37**, 129-150.
- Niaz, M.: 2006, 'Can the Study of Thermochemistry Facilitate Students' Differentiation between Heat Energy and Temperature', *Journal of Science Education and Technology* **15**, 269-276.
- Mamlok-Naaman, R., Ben-Zvi, R. & Hofstein, A., Menis, J., & Erduran, S.: 2005, 'Influencing Students' Attitudes towards Science by exposing them to a Historical Approach', *International Journal of Science and Mathematics Education* **3**(3)
- Niaz, M.: 2005, 'The Quantitative Imperative vs the Imperative of Presuppositions', *Theory & Psychology* **15** (2), 247-256.
- Niaz, M.: 2005, 'Do General Chemistry Textbooks Facilitate Conceptual Understanding?', *Química Nova* **28**(2), 335-336.
- Niaz, M.: 2005, 'An appraisal of the controversial nature of the oil drop experiment: Is closure possible?', *British Journal for the Philosophy of Science*, **56**(4), 681-702.
- Brito, A., Rodríguez, M.A. & Niaz, M.: 2005, 'A Reconstruction of Development of the Periodic Table Based on History and Philosophy of Science and its Implications for General Chemistry Textbooks', *Journal of Research in Science Teaching* **42**(1), 84-111.
- Abd-El-Khalick, F. 2005, 'Developing Deeper Understanding of Nature of Science: The Impact of a Philosophy of Science Course on Preservice Science Teachers' Views and Instructional Planning', *International Journal of Science Education* **27**(1), 15-42.
- Lawson, A.E.: 2005, 'William Harvey, Predicting Capillaries, and the Nature of Science: One More Time', *The American Biology Teacher* **67**(4), 202-203.
- Lawson, A.E.: 2005, 'Conducting High Quality Research', *International Journal of Science and Mathematics Education*, **3**(1), 1-5.
- Lawson, A.E.: 2005, 'What is the Role of Induction and Deduction in Reasoning and Scientific Inquiry?' *Journal of Research in Science Teaching* **42**(6), 716-740.
- Dagher, Z., & BouJaoude, S.: 2005, 'Students' Perceptions of the Nature of Evolutionary Theory', *Science Education* **89**(3), 378-391.
- Nola, R. & Irzik, G.: 2005, *Philosophy, Science, Education and Culture*, Springer, Dordrecht.
- Ben-Ari, M.: 2006, 'Whose Final Hour? The Problem of Naive Egocentric Catastrophism in Doomsayers and Catastrophists', *Skeptic* **12**(3), 2006, 40-49.
- Waters-Adams, S.: 2006, 'The Relationship between Understanding the Nature of Science and Practice: The Influence of Teachers' Beliefs about Education, Teaching and Learning', *International Journal of Science Education* **28**(8), 919-944.
- Smith, C.L. & Wenk, L.: 2006, 'Relations among Three Aspects of First-Year College Students' Epistemologies of Science', *Journal of Research in Science Teaching* **43**(8), 747-785.

## 7. Publications for Sale

The following publications can be ordered from the IHPST Group at [www.ihpst.org](http://www.ihpst.org) :

- #1 *CD Proceedings of the 6<sup>th</sup> IHPST Conference, Denver, 2001*, 100 papers, W. McComas (ed.), USD10.
- #2 *CD Proceedings of the 7<sup>th</sup> IHPST Conference, Winnipeg, 2003*, 100+ papers, D. Metz (ed.), USD10.
- #3 *Science Education and Culture*, F. Bevilacqua, E. Giannetto & M.R. Matthews (eds.), Kluwer, 2001, 362pp, USD20.
- #4 *Science & Education* journal Volume 2, 1993, 382pp, USD10.
- #6 *Science & Education* journal Volume 12, 2003, 808 pps, USD20.
- #7 *Science & Education* journal Volume 13, 2004, 820 pps, USD20.
- #8 *The Pendulum: Scientific, Historical, Philosophical & Educational Perspectives* (Michael R. Matthews, Colin Gauld & Arthur Stinner (eds.), Springer, 2005, USD20

## 8. Coming Conferences

March 29 – April 3, 2008. National Association for Research in Science Teaching, Baltimore  
Details at: [www.narst.org](http://www.narst.org)

April 11-14, 2008. Philosophy of Education Society (USA), Annual Conference, Boston.  
Details at: <http://philosophyofeducation.org>

July 4-6, 2008. British Society for the History of Science, the Canadian Society for the History and Philosophy of Science, and the History of Science Society joint conference, Oxford.  
Details at: [www.hssonline.org/](http://www.hssonline.org/)

November 6-9, 2008. Philosophy of Science Association, Biennial Conference, Pittsburgh.  
Details at: <http://philsci.org/conferences/psa2008/>

June 24-28, 2009. Tenth IHPST Conference, Notre Dame University, Notre Dame, IN  
Details at: [ihpst09@nd.edu](mailto:ihpst09@nd.edu), and [www.nd.edu/~ihpst09](http://www.nd.edu/~ihpst09)

July 26-31, 2009. XXIII International Congress of History of Science and Technology, Budapest,  
Details at: <http://www.conferences.hu/ichs09/>

## 9. Leeds 2005 Conference Papers

Most papers presented at the IHPST Leeds Conference, July 2005, are on the web at:

<http://www.ihpst2005.leeds.ac.uk/papers.htm>

## 10. Newsletter Items

This IHPST Electronic *Newsletter* goes to 1,500 email addresses on the IHPST list, and it is also posted to various science education, philosophy of education and HPS lists. Items for inclusion in the *Newsletter* are appreciated. These can be items for the ‘Recent Research’, ‘Recent Books’, ‘Books’ or ‘Conferences’ sections.

Submission of “Book Notes” are especially welcomed. They should follow the format and style as in this issue, and sent as attachments to editor. They are a way of bringing good and relevant books to the attention of the large group of scholars interested in the utilisation of historical and

philosophical scholarship in addressing theoretical, curricular and pedagogical issues in science and mathematics education.

Please email newsletter material as an attachment (or journal subscriptions or publication orders) to:

A/Professor M.R. Matthews, School of Education, UNSW, Sydney 2052, Australia  
Email: [m.matthews@unsw.edu.au](mailto:m.matthews@unsw.edu.au)

## **11. IHPST Email List**

The email list is used sparingly, perhaps once a month, to send group information such as contained in this Newsletter. It is a closed list, not an open discussion list.

If you receive this email message and wish to remove yourself from the IHPST list, send a message to: [majordomo@explode.unsw.edu.au](mailto:majordomo@explode.unsw.edu.au) . In the body of the message, not the subject line, simply write: 'unsubscribe ihpst-group'.

Alternatively, if you have friends or colleagues who would like to subscribe to the list, tell them to send a message to: [majordomo@explode.unsw.edu.au](mailto:majordomo@explode.unsw.edu.au) . In the body of the message, not the subject line, simply write: 'subscribe ihpst-group'.