



International History, Philosophy and Science Teaching Group

NEWSLETTER

June 2007

www.ihpst.org

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- 1. 2007 IHPST Conference, Calgary, www.ucalgary.ca/ihpst07**

The International History, Philosophy and Science Teaching Group will hold its *Ninth* Conference, at the University of Calgary, June 24 (evening) – 28 (noon), 2007. Currently there are about 200 participants from 32 countries.

There will be Plenary Sessions on:

- # HPS & Biology Teaching
- # Cognitive Perspectives on Epistemology in Science Education
- # Image Style Analysis: Employing Digital Imaging Technology to Map Changes in Pictorial Styles over Time
- # The Periodic Table-Its Story and Its Significance
- # Science Stories: A Spectrum of Considerations for Learning In and About Science
- # Teaching and Assessing the Nature of Science: Issues and Complexities

There are about 150 presentations being made in concurrent sessions.

The Programme for the Conference is available for viewing at the above web site.

Registration can be effected at the above conference web site up to June 19.

Conference Chair: Professor Ian Winchester (winchest@ucalgary.ca)

Conference Secretary: Linda Lentz (lentz@ucalgary.ca)

Programme Chair: HsingChi von Bergmann (ihpst07@ucalgary.ca)

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2. Science & Education Report

(a) Volume 16 Numbers 7-8, 'Models in Science and in Science Education'

Volume 16 Numbers 7-8 of *Science & Education* has been printed and will be mailed to subscribers by Springer Publishing. It is a special double issue on the theme of 'Models in Science and in Science Education'.

Contents are:

MICHAEL R. MATTHEWS / Models in Science and in Science Education: An Introduction

IBRAHIM A. HALLOUN / Mediated Modelling in Science Education

DEMETRIS PORTIDES / The Relation between Idealisation and Approximation in Scientific Model Construction

MARIA DEVELAKI / The Model View of Scientific Theory and the Structuring of School Science Programmes

ISMO T. KOPONEN / Models and Modelling in Physics Education: A Critical Re-analysis of Philosophical Underpinnings and Suggestions for Revision

FERNANDO FLORES-CAMACHO, LETICIA GALLEGOS, ANDONI GARRITZ & ALEJANDRA GARCÍA / Incommensurability and Multiple Models: Representations about Structure of Matter in Undergraduate Chemistry Students

VASILIKI SPILIOTOPOULOU - PAPANTONIOU / Models of the Universe: Children's Experiences and Evidence from the History of Science

CIBELLE CELESTINO SILVA / The Role of Models and Analogies in the Electromagnetic Theory: A Historical Case Study

NIKLAS MARKUS GERICKE & MARIANA HAGBERG / Definition of Historical Models of Gene Function and their Relation to Students' Understanding of Genetics

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 .

(b) 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 . 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

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.

(c) Manuscript Submissions

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

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. Notre Dame Summer Program for Secondary Science and Mathematics Teachers; June 25-29, 2007

The 2007 Graduate Program for Secondary Science and Mathematics Teachers, sponsored by the Graduate Program in History and Philosophy of Science at the University of Notre Dame will be held June 25-29 on the campus of Notre Dame. It will be a three credit, one week intensive program.

Two courses are being offered this summer:

I What is the Nature of Science?

This course will provide an introduction to the fields of history, philosophy, and sociology of science. Important issues such as the development of the scientific method, perceived objectivity of scientific endeavour, ethical issues, the social structure of science, and the way science is portrayed in the popular press, will be discussed in an attempt to assess the way science really works. Participants will receive a detailed overview of the terminology, aims, devices, and future directions of the nature of science.

II Einstein, Bohr and the History of Modern Physics

The second course will examine the developments in physics that led to the development of many world-changing technologies, from the atomic bomb to the microchip. This course provides a non-technical overview of the relativity and quantum revolutions, the aim being to understand not only the experimental and theoretical innovations of Einstein and Bohr, but also the people who brought about the revolution and the cultural, social, and political world they inhabited. The course is designed for the non-specialist; a technical physics background is not required.

This program is intended to provide teachers with exposure to historical and philosophical issues that can be used in the classroom to help enrich and deepen discussions about science in both historical and modern contexts, as well as to help teachers meet the standards mandated by most states as well as many national organizations. While much of the courses will focus on historical and philosophical topics, substantial time will also be dedicated to pedagogical concerns. It is our expectation that every teacher will finish the course with an appropriate, concrete set of techniques, plans, and materials to use in the classroom.

For more information, please visit our website at:

<http://www.nd.edu/~ndhpssum> > www.nd.edu/~ndhpssum

or, email ndhpssum@nd.edu.

or, contact Professor Don Howard, Department of Philosophy or Program in History Philosophy of Science, University of Notre Dame. (Don.A.Howard.43@nd.edu)

4. International Society for the Philosophy of Chemistry (ISPC), 2007 Summer Symposium, August 5-9, San Francisco

Submissions are invited for the 11th International Society for the Philosophy of Chemistry Summer Symposium. This year the symposium will be August 5th-9th at the University of San Francisco (USF). The ISPC Summer Symposium is an interdisciplinary conference held every August as part of the International Society for the Philosophy of Chemistry's (<http://ispc.sas.upenn.edu/>) mission to promote the "international exchange of ideas concerning the philosophical foundations of the chemical sciences and related areas." The conference organizers welcome papers from philosophers, chemists, biochemists, historians, sociologists, educators and others who are interested in this dynamic and developing field.

This year's Keynote Speaker will be Jerome A. Berson, Professor Emeritus of Chemistry at Yale University and author of *Chemical Creativity: Ideas from the Work of Woodward, Meerwein, and Hückel* and *Chemical Discovery and the Logicians' Program: A Problematic Pairing*.

Registration and Abstract Submission:

To register and/or submit an abstract for the symposium go to www.usfca.edu/artsci/ug/chemistry/ispc or if you prefer you can send the forms below to Tami Spector at spector@usfca.edu or via Fax (415) 422-5157 by **May 18th, 2007**. Times New Roman font (1.5 line spacing; size 12) are recommended.

Organizers:

The symposium is being co-organized by Tami Spector (USF Professor of Chemistry) and David Stump (USF Associate Professor of Philosophy). Questions regarding the symposium should be sent to spector@usfca.edu

5. 4th Hellenic Conference on History, Philosophy and Science Teaching

The 4th Hellenic conference on History, Philosophy and Science Teaching “The cultural component of Science in Education” will be held at the University of Patras (Department of Educational Sciences and Early Childhood Education) from October 5 to October 7, 2007. The scope of the conference is to promote speculation with regard to nature, as well as the characteristics and content that the relationship between History and Philosophy of Science and its teaching may acquire.

Invited speakers include:

Prof. Agustin Aduriz-Bravo, Science Education, Universidad de Buenos Aires, Argentina.

Dr Danielle Fauques, Science Education, Groupe d’Histoire et de Diffusion des Sciences d’Orsay, France.

Prof. Michael Matthews, History and Philosophy of Science, University of New South Wales, Sydney, Australia.

The expected number of papers is about 50 and the expected number of participants is about 200. The conference website is: <http://www.ecedu.upatras.gr/hpt>

For further information please contact: Assist. Prof. Dimitris Koliopoulos (dkoliop@upatras.gr)

6. Educators for Sustainability

The United Nations General Assembly, given the serious and urgent problems humanity has to face nowadays, has adopted a resolution establishing a Decade of Education for Sustainable Development (2005-2014), proclaiming UNESCO as the lead agency to promote the Decade.

Various educational initiative are being enacted to advance the UN programme. People wanting details, or able to make suggestions, can contact:

Dr Daniel Gil-Perez (Daniel.Gil@uv.es) or Dr Amparo Vilches (Amparo.Vilches@uv.es).

7. 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

- 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.

8. Publications for Sale

The following publications can be ordered from the IHPST Group at www.ihpst.org :

- #1 *CD Proceedings of the 6th IHPST Conference, Denver, 2001*, 100 papers, W. McComas (ed.), USD10.
- #2 *CD Proceedings of the 7th 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

9. Coming Conferences

June 24-28, 2007. 9th IHPST Conference, Calgary. Details at: www.ucalgary.ca/ihpst07

July 11-14, 2007. Australasian Science Education Research Association, Annual Conference, Perth.

Details at: <http://www.education.ecu.edu.au/conferences/ASERA/>

August 5-9, 2007. International Society for the Philosophy of Chemistry (ISPC), 2007 Summer Symposium, San Francisco, (www.usfca.edu/artsci/ug/chemistry/ispc)

October 5-7, 2007. 4th Hellenic HPS&ST conference, Patras.

Details from: Dr Dimitris Koliopoulos, dkoliop@upatras.gr

March 29 – April 3, 2008. National Association for Research in Science Teaching (NARST, USA), Baltimore

Details at: www.narst.org

April 11-14, 2008. Philosophy of Education Society (USA), Annual Conference, Boston.

Details at: <http://philosophyofeducation.org>

10. Future Newsletter Items

This IHPST Electronic *Newsletter* goes to 1,400 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. Brief Book Notes are especially welcomed.

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

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 . 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 . In the body of the message, not the subject line, simply write: ‘subscribe ihpst-group’.