



International History, Philosophy and Science Teaching Group

NEWSLETTER

May 2007

www.ihpst.org

CONTENTS

- 1. 2007 IHPST Conference (May 30 Registration deadline)**
- 2. *Science & Education Report* (Vol.16 Nos.7-8, Models special issue)**
- 3. International Society for the Philosophy of Chemistry (ISPC),
2007 Summer Symposium, August 5-9, San Francisco**
- 4. Current Research**
- 5. Book Notes**
- 6. Publications for Sale**
- 7. Coming Conferences**
- 8. Future Newsletter Items**
- 9. IHPST Email List**

- 1. 2007 IHPST Conference, Calgary, (May 30 Registration deadline)**
www.ucalgary.ca/ihpst07

(a) *Organisation and Registration*

The International History, Philosophy and Science Teaching Group will hold its *Ninth* Conference, at the University of Calgary, June 24 (evening) – 28 (noon), 2007

The deadline for registration (CAD350, approx. USD315 or EUR215) without surcharge is May 30th. For registration after May 30th the cost will be CAD450. Registration can be effected at the above conference web site, or directly at: <http://www.peopleware.net/1540>.

Please note that in order to register on-line delegates will be required to provide either a VISA or Mastercard for payment purposes. For those who do not wish to register on-line, you may also complete the PDF IHPST Registration Form (please download it from the website) and fax or mail it back to the Conference & Special Events office as per the information provided on the form.

Advanced registration for the conference is encouraged. Please note: meals cannot be guaranteed for those who register after Monday, June 11, 2007 due to catering cutoff requirements. As such,

delegates who register after this time period cannot be guaranteed access to the Conference Dinner on June 26.

On-line registration will close on June 19, 2007.

The Conference Theme is: *Contextual Approaches to Science and Mathematics Teaching*. Currently about 170 submissions have been received. Full details of the programme will be available in a newsletter and at the IHPST and Conference web sites in early June.

Calgary is about a two-hour drive from the Rocky Mountains and the delightful towns of Banff and Lake Louise. More details, including registration, travel, accommodation, and tourism options will shortly be available at the conference web site: www.ucalgary.ca/ihpst07.

Participants who have not submitted registration payment by *May 30th, 2007* will NOT be included in the printed program.

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

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

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

Contact Email: ihpst07@ucalgary.ca or hsingchi@ucalgary.ca

(b) Springer Distinguished Lecture

The Springer Distinguished Lecture will be given by Professor Garland Allen, School of Biology, Washington University, St Louis. He has published on topics in the history and philosophy of biology, and on the history of eugenics. The lecture will be concerned with how the history and philosophy of biology can assist pedagogical efforts to cultivate process skills in science and to illuminate science as a way of knowing.

(c) Anticipated Contributors

It is expected that about 200-250 educators, historians, philosophers, teachers, scientists and cognitive scientists from about 30 countries will engage with theoretical, curricular and pedagogical issues in contemporary science education.

Among those that have indicated that they are preparing submissions for the conference are:

Jonathan Osborne, King's College London
Ian Winchester, University of Calgary
William McComas, University of Arkansas
Igal Galili, The Hebrew University of Jerusalem
Samson Nashon, University of British Columbia
Steven Norris, University of Alberta
Jesús Vázquez-Abad, Université de Montréal
David Rudge, Western Michigan University
Zoubeida Dagher, University of Delaware
Andreas Quale, University of Oslo
Ismo T. Koponen, University of Helsinki
Mansoor Niaz, Universidad de Oriente
Colin Gauld, University of New South Wales
Norman Lederman, Illinois Institute of Technology
Judith Lederman, Illinois Institute of Technology
Michael Clough, Iowa State University

Steve Alsop, York University
Susan Barker, University of Alberta
Larry Bencze, University of Toronto
Michael Bowen, University of New Brunswick
Karen Goodnough, Memorial University
Samia Khan, University of British Columbia
Jolie Mayer-Smith, University of British Columbia
Barbara McMillan, University of Manitoba
Olive Chapman, University of Calgary
Bonnie Shapiro, University of Calgary
HsingChi von Bergmann, University of Calgary
Mick Nott, Kings College London
Bharath Sriraman, University of Montana
Clark Chinn, Rutgers University
Don Howard, University of Notre Dame
Robert Carson, Montana State University

Michael Matthews, Uni. of New South Wales
Joanne Olson, Iowa State University
Dana Zeidler, University of South Florida
Arthur Stinner, University of Manitoba
Don Metz, University of Winnipeg
Stephen Klassen, University of Winnipeg
Peter Heering, University of Oldenburg
Fabio Bevilacqua, University of Pavia
Steve Alsop, York University
Kevin de Berg, Avondale College
Eric Howe, Assumption College
Michael Ackeroyd, Bradford College
Jim Ryder,University of Leeds
Katemaria Rosa, Universidade Estadual de Feira
de Santana, Brazil
Avikam Gazit, ...Open University of Israel
Pradeep Dass, Appalachian State University

Calvin Kalman, Concordia College
Stuart Rowlands, University of Plymouth
Eric Scerri, University of California – Los Angeles
Fernando Flores-Camacho, Uni. Nacional
Autónoma de México
Mariana Hagberg, Karlstad University
Niklas Gericke, Karlstad University
Patrice Potvin, Université du Québec à Montréal
Kostas Skordoulis, University of Athens
Wendy Sherman, Iowa State University
Panos Kokkatos, University of Athens
James Carifio, University of Massachusetts
Per-Olof Wickman, Stockholm Institute of
Education
Jongwong Park, Chonnam National University,
Korea
Nahum Kipnis,Independent scholar

(d) Conference Accommodation

Blocks of rooms have been booked for delegates both on and off campus. Delegates are encouraged to book early even if you have to cancel or change your reservation at a later date.

NOTE: Please be sure when booking accommodations at either location to reference the IHPST Conference so that you receive the special conference rates that have been negotiated.

On-Campus Housing

University of Calgary, Summer Conference Housing
3456- 24th Avenue NW Calgary

Guest may either complete the PDF Conference Housing Form (can be found on the website) and fax it back to the Conference Housing office directly, or they may contact the Conference Housing office via telephone.

Contact Information:

Fax: (403) 220-6760

Phone: (403) 220-3203

Toll Free: 1-877-498-3203

Web site: <http://www.ucalgary.ca/residence/guestaccommodation/>

There are two types of accommodation reserved for the IHPST Conference: traditional residence and apartment-style residence (refer to website for floor plans and more detailed descriptions)

On campus per person rates range from approximately \$33.00 for a shared dorm room to \$75.00 for single private suite style accommodations, plus applicable taxes, per night.

Please note that the rooms are based on availability and all unused rooms will be released on May 1, 2007 (delegates may still call after this date to inquire about availability). As such, delegates are encouraged to book on campus accommodations on or before April 30, 2007 in order to avoid disappointment.

Off-Campus Housing

Best Western Village Park Inn
1804 Crowchild Trail NW Calgary (approximately 15-20 minute walk to campus)

Guests wishing to reserve accommodations for the Best Western Village Park Inn may do so by contacting the hotel by phone or by going to the following link and completing the requested information:

<http://www.villageparkinn.com/reserve.html>

Please note that if you are using the on-line option, please be sure to reference the IHPST Conference in the comments section of the form.

Contact Information:

Phone: (403) 289-0241

Toll Free: 1-888-774-7716

Fax: (403) 289-4645

Web site: <http://www.villageparkinn.com/>

There are two types of accommodation reserved for the IHPST Conference: standard rooms (2 beds per room) and business plus rooms. The business plus rooms include a full buffet breakfast and upgraded bathroom amenities.

Room rates range from \$114.00 for a standard single room to \$144.00 for a business plus double occupancy room, plus applicable taxes, per night. All prices are in Canadian Dollars.

Please note that rooms are based on availability and all unused rooms will be released on June 2, 2007 (delegates may still call after this date to inquire about availability). As such, delegates are encouraged to book off campus accommodations on or before June 1, 2007 in order to avoid disappointment.

(e) Transportation

The Calgary International Airport is well served by many international and domestic airlines with non-stop flights from Canada, the U.S. and overseas. It is also possible to reach Calgary by car or bus. Calgary has excellent east-west access along the Trans Canada Highway (Highway #1) and north-south access via Highway #2.

A taxi to the University from the Airport will cost approximately \$35.00 one way. If checking into conference housing, direct the driver to take you to Cascade Hall. You will not need a car during the conference, but if you are renting a car, a few companies located at the Airport or downtown include:

Budget 1-800-268-8900

www.budgetcanada.com

Avis 1-800-879-2847

www.avis.com

Hertz 1-800-263-0600

www.hertz.com

Thrifty 1-800-367-2277
www.thrifty.com

Parking is available for a fee on campus for conference housing guests and in designated pay lots for other delegates. Parking is available free of charge for guests staying at the Best Western Village Park Inn in their designated lots.

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'.

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

Registration and Abstract Due May 18th, 2007. Information at:

www.usfca.edu/artsci/ug/chemistry/ispc

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.

Housing:

The University of San Francisco (USF) is a private Jesuit University located in the heart of San Francisco, California. For more detailed information about USF and its environs please see www.usfca.edu/online/about_USF/. Please see www.usfca.edu/artsci/ug/chemistry/ispc/facilities.html for information about on-campus housing. At present 45 single and 15 double rooms are being held for the symposium attendees at Loyola Village. The rates for these rooms are:

Single Occupancy - \$66/night

Double Occupancy - \$98/night (\$49 per person/night)

For those who would rather stay off campus we recommend the following lodgings within walking distance of USF (please contact them directly for rates and reservations):

Stanyan Park Hotel (www.stanyanpark.com/)

Laurel Motor Inn (<http://san.francisco.hotelguide.net/data/h100448.htm>)

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

4. 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.

5. Book Notes

Peter Heering, Daniel Osewold (eds.), *Constructing Scientific Understanding through Contextual Teaching*, Frank & Timme Publishers, Berlin

346 pages, 29,80 € Paperback, ISBN 978-3-86596-118-1

This volume includes a selection of contributions to the 6th International Conference for the History of Science in Science Education held at the Carl-von-Ossietzky Universität Oldenburg in July 2006. The conference was devoted to discussing the function of historical contexts in science education. Some of the papers in this collection discuss this issue from a theoretical point of view, others describe practical teaching experiences; they cover examples from the fields of astronomy, biology, mathematics, and physics. Bringing them together should make manifest the potential of using historical contexts in science education, in particular in teaching not only science but also the nature of science.

Contents:

HEERING, PETER & OSEWOLD, DANIEL, Preface

STUEWER, ROGER H, Introduction

ALLCHIN, DOUGLAS, Teaching Science Lawlessly

BABB, JEFF & CURRIE, JAMES, The Brachistochrone and Related Curves: Implications for Teaching the History of Calculus

CAVICCHI, ELIZABETH, Mirrors, swinging weights, light bulbs ...: Simple experiments and history help a class become a scientific community

HEERING, PETER, Education and Entertainment: Using Enlightenment Experiments for teacher Training

KLASSEN STEPHEN, Pedagogical Renewal of the Millikan Oil Drop Experiment
KOKKOTAS, PANAGIOTIS, Teaching Physics to in-service primary school teachers in the context of the History of Science: the case of the fall of bodies
LAUGINIE, PIERRE, Weighing the Earth, weighing the Worlds: From Cavendish to modern undergraduate demonstrations
LIU, SHU-CHIU, Alternative perspectives and conceptual change: integrating pre-scientific knowledge into teaching-learning sequences in school science
McMILLIAN, BARBARA A., Learning about Light in grade 4: What Happened to the Illuminating Stories from The History of Science and Technology?
METZ, DON, William Wales and the 1769 Transit of Venus: Puzzle Solving and the Determination of the Astronomical Units
RIESS, FALK, Short history of the use of historical experiments in German physics lessons
RUDGE, DAVID W., History of Science in the Service of Middle School Science Teacher Preparation
SICHAU, CHRISTIAN, Beyond the Textbook: Formative Traditions, Objects, and the Science Museum of the Future
STINNER, ARTHUR, From Theory to Practice: Placing contextual science in the classroom
TEICHMANN, JÜRGEN, From Babylon to the Big Bang – Are there Revolutions in Astronomy?
WANG, YOUJUN, Do mathematics by hands: two cases from ancient Chinese mathematics
WOLFSCHMIDT, GUDRUN, Understanding the Earth and the Cosmos Magnetism in Cultural History, Geophysics and Astronomy: Three Examples for Contextual Teaching
ZEMPLÉN, GÁBOR Á., The nature of science in the classroom – sociology to the rescue?

Order directly from publisher: e-Mail: buchbestellung@frank-timme.de

6. 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

7. Coming Conferences

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

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

8. 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

9. 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'.