

11th International IHPST and 6th Greek
History, Philosophy and Science Teaching
Joint Conference

Thessaloniki, 1-5 July 2011, Greece

Science & Culture: Promise, Challenge and Demand

Conference Programme

*All events take place at the Tower of Education in AUTH Campus
The conference secretariat (Groundfloor) will be open during the conference hours
The internet-computer centre (Second Floor) will be open daily 9.00-12.30 & 13.30-17.00*

Friday, July 1st, 2011

16.00-18.30 Registration - Groundfloor

19.00-20.00 Opening Session 1.1 - Room A Groundfloor

WELCOME ADDRESSES

Dimitra Kogidou, Dean of the Faculty of Education AUTH

Giorgos Griollios, Head of the School of Primary Education AUTH

IHPST PRESIDENTIAL ADDRESS:

**THE ROLE OF VISUAL IMAGERY IN TEXTBOOK PORTRAYALS OF INDUSTRIAL
MELANISM**

David Wjss Rudge and Janice Marie Fulford, Western Michigan University

20.00-21.30 Welcome Reception – Open Balcony Tenth Floor

Saturday, July 2nd, 2011

09.00-10.30 Concurrent sessions 2.1.1, 2.1.2, 2.1.3, 2.1.4, 2.1.5 and Summer School
Session 2.1.6

Concurrent session 2.1.1 - Room A Groundfloor

SINCE PRIVATE UNIVERSE: MISCONCEPTIONS ABOUT REVOLUTION AND ROTATION

Catherine Lange and Joseph Zawicki, SUNY College USA

THE LAW OF REFRACTION: A GUIDED-DISCOVERY APPROACH WITH A COUNTERPART IN HISTORY

David Schuster, Western Michigan University, USA

HOW DID LIGHT GET A VELOCITY

Pierre Lauginie, Université Paris-sud France

THE ONTOLOGICAL QUEST OF CHEMISTRY: STUDIES FROM STRUCTURAL REPRESENTATION IN UNDERGRADUATE CLASSROOM

Waldmir Araujo-Neto¹ and Marcelo Giordan²

¹Federal Institute of Education, Science and Technology of Rio de Janeiro Brazil

²University of São Paulo Brazil

Concurrent session 2.1.2 – Room B First Floor

CRITICAL LITERACY TO SEEK SYNTHESIS FROM DISCRETE AND ESSENTIAL LEARNING UNITS

Michael Gleason, Georgia College USA

PROFILE SHAPING EDUCATION: A PARADIGM SHIFT IN EDUCATION TO EMPOWER STUDENTS FOR SUCCESS IN MODERN LIFE

Ibrahim A. Halloun, Educational Research Center Lebanon

APPROACHES FOR STUDYING DEVELOPMENT OF SCIENTIFIC LITERACY IN POST-SECONDARY STUDENTS

HsingChi von Bergmann, University of British Columbia Canada

USING THE ‘STORY BEHIND THE SCIENCE’ IN HIGH SCHOOL BIOLOGY CLASSROOMS

Ami Friedman, Walled Lake Western High School

Concurrent session 2.1.3 – Room C First Floor

TEACHING TEACHERS THE CONCEPTUAL HISTORY OF PHYSICS

Peter Garik¹, Luciana Garbayo², Yann Benétreau-Dupin¹, Charles Winrich¹, Andrew Duffy¹, Nicholas Gross¹ and Manher Jariwala¹

¹Boston University, ²University of Texas at El Paso USA

PEDAGOGICAL PRACTICES AND IN-SERVICE TEACHERS FORMATIVE PROCESSES: APPROACHING HISTORY AND PHILOSOPHY OF SCIENCE TO PHYSICS TEACHING

Sandra Regina Teodoro Gatti and Roberto Nardi, São Paulo State University Brazil

MIXING CULTURES FOR EPISTEMOLOGICAL TEACHERS' TRAINING TO RESPONSIBILITY

*Hélène Hagège, Christian Reynaud, Claude Caussidier and Daniel Favre
Université Montpellier 2 France*

A TYPOLOGY OF SCIENCE TEACHERS' AIMS IN INCORPORATING THE HISTORY OF SCIENCE IN SCIENCE TEACHING

Serhat Irez¹, Cicek Dilek Bakanay¹, Hayati Seker¹, Burcu Guney¹, Ajda Kahveci², Serhad Sadi Barutcuoglu¹

¹Marmara University, ²Canakkale 18 Mart University Turkey

Concurrent session 2.1.4 – Room 01 Groundfloor

CIRCLES AND SPHERES IN PTOLEMY'S ASTRONOMY

Anastasia Guidi Itokazu, Universidade Federal do ABC Brazil

TEACHING PHYSICS WITHIN HISTORY: THE COMPARATIVE STUDY OF THE PRE-NEWTONIAN LAWS OF MOTION AS A VEHICLE FOR THE STUDY OF THE NEWTONIAN LAW OF MOTION

Manolis Kartsonakis, The Hellenic Open University Greece

REVITALIZING KEPLER'S DISCOVERY IN EYE VISION FOR SCHOOL SCIENCE TEACHING

Youngmin Kim¹, Jongwon Park², Young-Shin Park³

¹Pusan National University, ²Chonnam National University, ³Chosun University S. Korea

ON THE USE OF A STANDARD SPREADSHEET TO MODEL PHYSICAL SYSTEMS IN SCHOOL TEACHING

Andreas Quale, University of Oslo Norway

Concurrent session 2.1.5 – Room 05 Groundfloor

COUNTERING THE GROWING INCONSISTENCIES IN SCIENCE EDUCATION BY TAKING A STEP BACK TO INSTITUTIONALIZE ERNST MACH'S TEACHING IDEAS

Hayo Siemsen, Ernst Mach Institute for Philosophy of Science and INK, University of Applied Sciences Emden/Leer, Germany.

PLANETARY MOTIONS: REVISITING NEWTON'S ORIGINAL DERIVATION OF TRAJECTORIES AND KEPLER'S EQUANT MODEL FROM A DIDACTICAL POINT OF VIEW.

Christian Bracco and Jean-Pierre Provost, Université de Nice-Sophia Antipolis France

THE COOLING LAW AND THE DEFINITION OF A TEMPERATURE SCALE, FROM NEWTON TO DALTON: A CASE HISTORY WITH VALUABLE EPISTEMOLOGICAL IMPLICATIONS

Ugo Besson, University of Pavia Italy

GALILEO IN THE COURT-ROOM AND IN THE CLASS-ROOM

Peter Slezak, University of New South Wales Australia

Summer School Session 2.1.6 – Room 202 Second Floor

All summer school participants and advisory committee meet, form groups and main guidelines are provided.

10.30-11.00 Coffee Break

11.00-12.30 Plenary Session 2.2 - Room A Groundfloor

PERSPECTIVES ON SCIENCE: A QUALIFICATION IN THE HISTORY, PHILOSOPHY AND ETHICS OF SCIENCE FOR 16–19 YR OLD STUDENTS

John Taylor¹ and Elizabeth Swinbank²

¹Rugby School - ²University of York UK

12.30-13.30 Lunch Break

13.30-15.00 Concurrent symposia 2.3.1, 2.3.2, 2.3.3, 2.3.4

Concurrent symposium 2.3.1 - Room A Groundfloor

SYMPOSIUM:

NEW PERSPECTIVES ON THE NATURE OF SCIENCE: THE ROLE OF LAWS, EXPLANATIONS AND MODELS IN SCIENCE EDUCATION

Symposium organiser: Zoubeida Dagher, University of Delaware USA

A COMPARATIVE STUDY OF THE NATURE OF LAWS AND EXPLANATIONS IN BIOLOGY AND CHEMISTRY

Zoubeida R. Dagher¹ & Sibel Erduran²

¹University of Delaware USA, ²University of Bristol UK

A DIDACTICAL UNIT TO TEACH A ‘SEMANTIC’ VERSION OF SCIENTIFIC MODELS TO SCIENCE TEACHERS*

Agustín Adúriz-Bravo^{1,2} and Mercè Izquierdo-Aymerich²

¹Universidad de Buenos Aires Argentina, ²Universitat Autònoma de Barcelona Spain

A SEVEN-YEAR PROFESSIONAL DEVELOPMENT JOURNEY FROM LEARNING NATURE OF SCIENCE (NOS) TO TEACHING NOS*

Siu Ling Wong¹ and Ho Yin Lie²

¹The University of Hong Kong, ²Po Kok Secondary School Hong Kong SAR China

Concurrent symposium 2.3.2 – Room B First Floor

SYMPOSIUM:

GENETICS AND THE NATURE OF SCIENCE

Symposium organiser: Kostas Kampourakis, Geitonas School Greece

TEACHING GENETICS AND THE NATURE OF SCIENCE IN THE POST-GENOMIC ERA

Kostas Kampourakis, Geitonas School Greece

SCIENTIFIC LITERACY: NATURE OF SCIENCE AS AN ESSENTIAL INGREDIENT

Norman Lederman, Illinois Institute of Technology, USA

DARWIN'S INVENTION: INHERITANCE, PANGENESIS AND THE NATURE OF SCIENCE

William F. McComas, University of Arkansas USA

Concurrent symposium 2.3.3 – Room 202 Second Floor

SYMPOSIUM:

TRAINING SCIENCE TEACHERS IN THE HISTORY OF SCIENCE

Symposium organiser: Pere Grapí, Universitat Autònoma de Barcelona Spain

AN ONLINE COURSE OF HISTORY OF SCIENCE AND MATHEMATICS FOR IN-SERVICE TEACHERS

Pere Grapí, Universitat Autònoma de Barcelona Spain

ENERGY: FROM ITS HISTORY TO HOW IT IS TAUGHT

Muriel Guedj, Université Montpellier 2 France

HISTORY AND CULTURAL MEDIATION IN SCIENCE AND TECHNOLOGY VERSUS AN EXAMPLE OF TEACHER EDUCATING AT THE UNIVERSITY OF BREST (FRANCE)

Sylvain Laubé, Université de Brest France

HISTORY AND PHILOSOPHY OF SCIENCE IMPROVING INTERDISCIPLINARY TEACHER KNOWLEDGE

Irinéa L. Batista, State University of Londrina Brazil

Concurrent symposium 2.3.4 – Room D Tenth Floor

SYMPOSIUM:

HISTORY OF SCIENCE TEXTBOOKS – PART A: FOUNDATIONAL STUDIES

Symposium organiser: DHST – Teaching Commission

PEDAGOGY AND RESEARCH. NOTES FOR A HISTORICAL EPISTEMOLOGY OF SCIENCE EDUCATION

Massimiliano Badino and Jaume Navarro

Max Planck Institute for the History of Science Germany

READING THE HISTORY OF SCIENCE IN SCIENCE SCHOOL TEXTBOOKS FROM A SOCIOLOGICAL PERSPECTIVE

Diana Farías C.¹ and Josep Castelló E.²

¹Universidad Nacional de Colombia, ²Universitat de Barcelona Spain

DEMYTHOLOGIZING SCIENCE TEXTBOOK HISTORIES: THINKING CRITICALLY ABOUT HISTORICITY

Farzad Mahootian, New York University USA

15.00-15.30 Coffee Break

15.30-17.00 Concurrent sessions 2.4.1, 2.4.2, 2.4.3, 2.4.4, 2.4.5, 2.4.6

Concurrent session 2.4.1 - Room A Groundfloor

DEVELOPING AND USING EVALUATION RESEARCH TOOLS FOR SCIENCE TEACHING CASES INFORMED BY THE HISTORY AND PHILOSOPHY OF SCIENCE

Fanny Seroglou¹, Sotiris Dossis², Nikos Kanderakis², Dimitris Koliopoulos², Vassilis Koulountzos¹, Paris Papadopoulos¹, Eleni Paraskevopoulou², Panagiotis Piliouras¹, Nektarios Tsagliotis¹ and Giorgos Vleioras¹

¹Aristotle University of Thessaloniki, ²University of Patras Greece.

A LARGE SCALE TRANS-NATIONAL COMPARISON OF STUDENTS' UNDERSTANDING OF THE NATURE OF SCIENCE

Ángel Vázquez¹, María-Antonia Manassero¹, Antoni Bennàssar¹ and Antonio García-Carmona²

¹University of the Balearic Islands, ²University of Seville Spain

THE EXPRESSED EPISTEMOLOGIES OF SECONDARY SCIENCE TEACHERS AND HOW THEY RELATE TO TEACHER PRACTICE: A MULTI-YEAR, MULTI-UNIVERSITY STUDY

Glenn Dolphin and John Tillotson, Syracuse University USA

ADVANCED SCIENCE STUDENTS' UNDERSTANDING ON NATURE OF SCIENCE IN FINLAND

Kari Sormunen¹ and Mustafa Serdar Köksa²

¹University of Joensuu Finland

²Inonu University Turkey

Concurrent session 2.4.2 – Room B First Floor

THE LASTING CONTRIBUTION OF PIAGET AND INHELDER TO A SCIENCE OF EDUCATION

Paul Zachos¹ & Seyfi Kenar²

¹Association for the Cooperative Advancement of Science and Education USA

²Marmara University Turkey

WOULD A METATHEORY OF SCIENCE EDUCATION SUPPORT DEWEY'S VISION OF DEMOCRATIC EDUCATION FOR YOUNG ADOLESCENTS?

Karynne L M Kleine, Georgia College USA

BUNUN'S WORLDVIEW OF NATURE AND ITS INFLUENCE ON DAILY LIFE

Huei Lee, Chia-Ling Chiang & Yuh-Chen Lin, National Dong Hwa University Taiwan

HISTORY, PHILOSOPHY AND SCIENCE IN A SOCIAL PERSPECTIVE: A PEDAGOGICAL PROJECT

Andreia Guerra¹, Marco Braga¹ and José Claudio Reis²

¹CEFET-RJ, University of Technology, ²State University of Rio de Janeiro Brazil

Concurrent session 2.4.3 – Room C First Floor

THE FRAGILE NATURE OF TEACHERS VIEWS OF NATURE OF SCIENCE (NOS)

Judith S. Lederman, Norman G. Lederman, Daniel Z. Meyer, Allison Antink-Meyer, Stephen A. Bartos and Gary Holliday

Illinois Institute of Technology USA

PRIMARY TEACHERS' NAÏVE UNDERSTANDING OF NATURAL PHENOMENA: THE ROLE OF BELIEF IN SCIENTIFIC UNDERSTANDING

Thomas McCloughlin¹ and Maria Kallery²

¹Dublin City University Ireland, ²Aristotle University of Thessaloniki Greece

TEACHERS' EPISTEMOLOGICAL CONCEPTIONS ABOUT CONCEPTS AND RELATIONSHIPS BETWEEN CONCEPTS

Cristina Speltini¹, Cristina Wainmaier² and Julia Salinas³

¹Universidad Tecnológica Nacional, ²Departamento Universidad Nacional de Quilmes,

³Universidad Nacional de Tucumán Argentina.

SUBJECTIVITY VERSUS OBJECTIVITY OF SCIENCE IN THE CONTEXT OF TEACHING NATURE OF SCIENCE TO PRE-SERVICE TEACHERS

C.G. Stefanidou¹, A.M. Nounou², D.I. Stavrou³ and K.D. Skordoulis¹

¹University of Athens, ²National Hellenic Research Foundation, ³University of Crete Greece

Concurrent session 2.4.4 – Room 202 Second Floor

WHEN GRANDPA ARCHIMEDES FOUND THE PRINCIPLE OF BUOYANCY. A DIDACTICAL SCENARIO OF SCIENCE EDUCATION FOR STUDENTS 5-9 YEARS OLD BY USING ACTIVITY THEORY AND LEARNING IN SCIENCE EDUCATION LABORATORY LESSONS

Xarikleia Theodoraki, University of Ioannina Greece

OF FARADAY'S LAW

Jenaro Guisasola, Kristina Zuza and Jose Manuel Almudi

University of the Basque Country

USING CURRICULAR MODELS FOR UNDERSTANDING SCIENTIFIC MODELLING – SOME TEACHING UNITS FOR NATURE OF SCIENCE UNDERSTANDING

Maria Develaki, National Secondary Education Council Greece

‘PROJEKT GALILEI’– THE CONCEPT

Peter Heering and Friedhelm Sauer, Universität Flensburg Germany

Concurrent session 2.4.5 – Room 01 Groundfloor

JOSEPH ROTBLAT AND JAMES CHADWICK

M. C. Underwood, University of Oxford / University of Cambridge UK

THE USE OF THOUGHT EXPERIMENTS IN TEACHING PHYSICS THEORIES OF THE 20TH CENTURY TO STUDENTS OF THE UPPER SECONDARY EDUCATION.

*Athanasios Velentzas, Krystallia Halkia and Constantine Skordoulis
University of Athens Greece*

THE COPE-MARSH BONE WAR: ITS IMPACT ON PALEONTOLOGY AND ITS CONTINUED USE TO THE TEACHING OF SCIENCE

*Maureen Babb¹ and Megan Anderson²
¹University of Manitoba, ²University of Winnipeg Canada*

BUT MISS FRANKLIN: WHY DO OPPOSITE CHARGES ATTRACT AND LIKE CHARGES REPEL?

Kevin de Berg, Avondale College of Higher Education Australia

Concurrent session 2.4.6 – Room 01 Groundfloor

THE NATURE OF SCIENTIFIC OBSERVATION: PERCEPTUAL LEARNING AS A KEY RESOURCE IN SCIENCE EDUCATION

Laura Peresan and Agustín Adúriz-Bravo, Universidad de Buenos Aires Argentina

CONCEPTS FOR AN ARCHITECTURE OF SCHOOL REPRESENTATIONS

*Bruno dos Santos Pastoriza and Rochele de Quadros Loguercio
Federal University of Rio Grande do Sul Brazil*

HOW HISTORY OF SCIENCE CONTRIBUTES TO THE CONSTRUCTION OF KNOWLEDGE IN THE CONSTRUCTIVIST ENVIRONMENTS OF LEARNING

*Rizaki Aikaterini and Kokkotas Panagiotis
National and Kapodistrian University of Athens Greece*

A FACILITATOR MODEL FOR THE USE OF HISTORY OF SCIENCE IN SCIENCE TEACHING

Hayati Seker, Marmara University Turkey.

17.00-19.30 Thessaloniki Sights Guided Tour

Sunday, July 3rd, 2011

09.00-10.30 Poster sessions 3.1.1., 3.1.2, concurrent sessions 3.1.3, 3.1.4, 3.1.5 and Summer School Sessions 3.1.6a,b,c

Poster session 3.1.1. – Groundfloor

RIVERS ON FIRE: ICEBERGS MELTING, USING THE HISTORY OF SCIENCE TO TEACH THE NATURE OF SCIENCE

Janice M. Fulford and David W. Rudge, Western Michigan University USA

DARWIN AND THE CULTURE THAT SHAPED EVOLUTION

Tamara C. Coleman and David W. Rudge, Western Michigan University USA

TEACHING THE NATURE OF SCIENCE CONCEPT OF MULTIPLE METHODS IN SCIENCE AND THE ECOLOGICAL CONCEPT OF CHARACTER DISPLACEMENT USING A HISTORICAL EPISODE

Andrea Marie-Kryger Bierema and David Wyss Rudge, Western Michigan University USA

THE HISTORICAL APPROACH OF TEACHING ATOMIC MODEL

William Mamudi and David Rudge, Western Michigan University USA

THE EDUCATION IN HARMONY WITH NATURE: HISTORICAL DEVELOPMENT OF ENVIRONMENTAL EDUCATION IN FINLAND

Gokhan Ozturk and Cathleen C. Loving, Texas A&M University USA

PREPARING OUR STUDENTS FOR FUTURE: PEDAGOGICAL VALUE AND BENEFITS OF STEM (SCIENCE, TECHNOLOGY, ENGINEERING, MATHEMATICS) EDUCATION

Hyonyong Lee¹, Hyuksoo Kwon², Kyungsook Park¹, Yongju Kwon³, Youngsin Kim¹ and Heejin Oh¹

¹Kyungpook National University, ²Kongju National University of Education, ³Korea National University of Education

TEACHING THE CHANGE OF SEASONS USING MYTHS AND LEGENDS

Evangelia Andria and Evangelia Mitrakou, Aristotle University of Thessaloniki Greece

THE IMPACT OF TWO REFORM MOVEMENTS IN SCIENCE TEXTBOOKS: AN ANALYSIS OF SIXTH GRADE SCIENCE TEXTBOOKS FROM 1975 TO 1997

*Muhammet Mustafa Alpaslan, Bugrahan Yalvac and Cathleen Loving
Texas A&M University USA*

ANALYZING COORDINATION OF THEORY AND EVIDENCE PRESENTED IN PRESERVICE TEACHERS' SCIENCE WRITING FOR INQUIRY ACTIVITIES

Sun-Kyung Lee¹, Gyuho Lee², Chui Im Choi¹, Myeong-Kyeong Shin³

¹Seoul National University, ²Korea Institute of Geoscience and Mineral Resources, ³Gyeongin National University of Education

Poster session 3.1.2 – First Floor

USING POETRY AS A BROKER FINDING COMMON GROUND BETWEEN SCIENCE AND RELIGION

Jesse Bazzul, University of Toronto Canada

SCIENCE AND ART: DESIGN AND EVALUATION OF INSTRUCTIONAL MATERIAL FOR TEACHING SCIENCE

*Athanasios Vassilaros, Kiriaki Vogiatzi, Ekaterini Gerothanasi, Fotini Giannakidou, Areti Gavliaroudi, Chrysoula Karagianni, Anna Marketaki, Theodoros Baltas, Athanasia Tsiatsiana, Chrysanthi Hatzioannidou, Vassilis Koulountzos and Fanny Seroglou
Aristotle University of Thessaloniki Greece*

CINEMA AND SCIENCE TEACHING: THE USE OF SCIENCE FICTION FILMS

Emilios Tanis and Fanny Seroglou, Aristotle University of Thessaloniki Greece

HOW KOREAN GENERAL PHYSICS TEXTBOOKS PRESENT ATOMIC STRUCTURE?

Mansoor Niaz¹, Gyoungho Lee², Sangwoon Kwon² and Nahyun Kim²

¹Universidad de Oriente Venezuela, ²Seoul National University Republic of Korea

TEACHING PHYSICS WITH THE TEXTBOOK *TRAITÉ ÉLÉMENTAIRE DE PHYSIQUE* (GANOT) IN MEXICO IN XIX CENTURY

María de la Paz Ramos Lara, National Autonomous University of Mexico

INTRODUCING SCIENTISTS FROM ASIA TO THE GREEK SCIENCE CLASSROOM

Rafailia-Maria Tsiligidou & Fanny Seroglou, Aristotle University of Thessaloniki Greece

A STUDY OF CERTAIN PHYSICS CONCEPTS: STUDENTS' DIFFICULTIES IN THE CONTEXT OF THE HISTORY OF SCIENCE

Ali Lounis, LDS-ENS-Kouba Alger

Concurrent session 3.1.3 – Room A Groundfloor

RECONTEXTUALIZING SCIENCE TEACHING IN LIFE LONG LEARNING EDUCATION

Vassilis Samaras

NARRATION-BASED COACHING FOR THE WILL AND WILLINGNESS TO DO SCIENCE

Wai-Yin Ng, The Chinese University of Hong Kong

IDEALIZATION AND SCIENTIFIC MODELS: REDUCING THE INFORMATION CONTENT

Demetris Portides, University of Cyprus

SPONTANEOUS EVOCATION OF METACOGNITIVE THOUGHT IN PHYSICS LESSONS: MAKING COMPARISONS WITH THE DAY-TO-DAY SITUATIONS

Cleci Werner da Rosa¹, José de Pinho Alves Filho², Álvaro Becker da Rosa¹

¹Universidade de Passo Fundo, ²Universidade Federal de Santa Catarina Brasil

Concurrent session 3.1.4 – Room B First Floor

WHEN SCIENCE MET PEOPLE THROUGH EDUCATION: MECHANICS' INSTITUTE MOVEMENT IN 19TH CENTURY BRITAIN

Jinwoong Song, Seoul National University Korea

SVANTE ARRHENIUS' CARBONIC ACID AND WORLD CLIMATE HYPOTHESIS: COMPLEXITY, EDUCATION AND THE 19TH-CENTURY ORIGINS OF TODAY'S CLIMATE CHANGE CONTROVERSY

John Murray, University of Manitoba Canada

USING THE HISTORY OF RESEARCH LEADING THE DISCOVERY OF ARCHAEA TO BRING UP ASPECTS OF SCIENCE IN THE CLASSROOM

Serhat Irez and Cicek Dilek Bakanay, Marmara University Turkey

SCIENTIFIC METHODS IN PHYSICS

Hayati Seker¹, Mehmet C. Aya², Burcu G. Guney¹, Serhat Irez¹

¹Marmara University Turkey, ²A&M University USA

Concurrent session 3.1.5 – Room C First Floor

TEACHING CRITICAL INQUIRY IN SCIENCE: THE ROLE OF DIALECTICAL CONTEXT IN SCIENTIFIC REASONING

Sharon Bailin¹ and Mark Battersby²

¹Simon Fraser University, ²Capilano University Canada

NEWTON'S LAWS ARE NOT RELATIVE: PHYSICS STUDENTS' AND FACULTY'S BELIEFS ABOUT KNOWLEDGE IN THE CONTEXT OF SOLVING A WELL-STRUCTURED PROBLEM

Fatih Caglayan Mercan, Bogazici University Turkey

THE EFFECT OF INQUIRY-BASED SCIENCE EXPERIMENTS ON PRE-SCHOOL STUDENTS' COMPREHENSION OF SCIENCE

Fatna Şahin, Sibel Demir, Tufan İnaltekin, and Ercan Tatli, Marmara University Turkey

“HOW WOULD THE EARTH BE WITHOUT AIR?”: TEACHING PROPOSAL FOR THE EXPLORATION OF AIR AND ATMOSPHERIC PRESSURE THROUGH HISTORICAL INSTRUMENTS, EXPERIMENTS AND STORIES

Flora Paparou, University of Athens Greece

Summer School Session 3.1.6a – Room 202 Second Floor

ANALYZING KOREAN GENERAL PHYSICS TEXTBOOKS VIA *INTEREST OF SCIENCE*: FOCUSING ON THE STRUCTURE OF THE ATOM

Sangwoon Kwon, Seoul National University Korea

WHAT DO SCIENCE CURRICULA HAVE TO DO WITH SOCIAL EXCLUSION? PRESENTING THE SCAN RESEARCH MODEL

Anastasios Siatras, Aristotle University of Thessaloniki Greece

Summer School Session 3.1.6b – Room 01 Groundfloor

ENHANCING STUDENTS' GROUP DISCUSSION BY ENGAGING TWO DIFFERENT APPROACHES TO FRICTION

Sangwoo Ha, Seoul National University Korea

PREPARING AN ARGUMENTATION FOR TEACHER TRAINING IN SCIENTIFIC LITERACY: THE CASE OF GLOBAL WARMING

Zoe Tsarsiotou, Aristotle University of Thessaloniki Greece

Summer School Session 3.1.6c – Room 05 Groundfloor

THE HISTORY AND PHILOSOPHY OF CHEMISTRY AS A FOUNDATION FOR TEACHING CHEMISTRY

Rick Wiebe, University of Manitoba Canada

HISTORICAL STUDY AND REGISTRATION OF THE USE OF EXPERIMENTS IN EDUCATION DURING THE 18TH AND THE 19TH CENTURY. THE CASE OF GREECE

Penelope Xanthidou, Aristotle University of Thessaloniki Greece

10.30-11.00 Coffee Break

11.00-12.30 Plenary Session 3.2 - Room A Groundfloor

SPRINGER LECTURE:

HOW MOLECULES BECAME PART OF SCIENTIFIC CONSCIOUSNESS: ON JEAN PERRIN'S CASE FOR REALISM

Stathis Psillos, University of Athens Greece

12.30-13.30 Lunch Break

13.30-15.00 Concurrent sessions 3.3.1, 3.3.2, 3.3.3 and symposia 3.3.4, 3.3.5, 3.3.6

Concurrent session 3.3.1 - Room B First Floor

INTRODUCING THE SEMANTIC VIEW OF SCIENTIFIC THEORIES IN SCIENCE EDUCATION

Agustín Adúriz-Bravo, Yefrin Ariza and Ana Couló, Universidad de Buenos Aires Argentina

A STUDY OF SCIENCE STUDENTS CONCEPTIONS AND ARGUMENTS BASED ON CLASSIC AND CONTEMPORARY THEORIES OF ARGUMENTATION

Aikaterini Konstantinidou, Marina Castells and Josep M. Cerveró

Universitat de Barcelona, Catalonia, Spain

NORMS, KNOWLEDGE CLAIMS AND AUTHORITIES AS JUSTIFICATIONS IN STUDENTS' REASONING ABOUT USING NEW TECHNOLOGY IN SOCIETAL PRACTICE

Mats Lindahl, Linnaeus University / Uppsala University Sweden

PRAGMATIC NATURALISTIC REALISM, OBJECTIVE TRUTH, AND SCIENCE EDUCATION

Christine McCarthy, University of Iowa USA

Concurrent session 3.3.2 - Room C Second Floor

DARWIN'S ARGUMENT IN FAVOUR OF NATURAL SELECTION AND AGAINST SPECIAL CREATIONISM

Robert Nola, The University of Auckland New Zealand

BIOLOGY EDUCATION IN ELEMENTARY SCHOOLS: PUPILS LEARN ABOUT PLANT FUNCTIONS

Eftychia Nanni and Katerina Plakitsi, University of Ioannina Greece

CULTURAL CONSTRAINTS IN THE COGNITION OF BIOLOGICAL NATURAL KINDS CONCEPTS: THE CASE OF MAMMALS

Thomas J.J. McCloughlin¹ and Philip S.C. Matthews²

¹Dublin City University, ²Trinity College University of Dublin

ELOISA DIAZ AND THE MENARCHE OF CHILEAN WOMEN IN THE IXX CENTURY: A CONTRIBUTION TO TEACH FEMALE SEXUALITY IN HIGH SCHOOL.

*Carol Joglar, Sebastian Urra, Juan Brunstein, Mario Quintanilla, Agustin Adúriz-Bravo
Pontificia Universidad Católica de Chile*

Concurrent session 3.3.3 - Room 01 Groundfloor

PHILOSOPHY OF SCIENCE IN THE SCIENCE CLASSROOM

Jorge Paruelo, Universidad de Buenos Aires Argentina

THE INFLUENCE OF POSITIVISM IN THE NINETEENTH CENTURY ASTRONOMY IN ARGENTINA

Haydée Santilli & Jorge Norberto Cornejo, Universidad de Buenos Aires Argentina

RETHINKING THE NATURE OF SCIENCE INSTRUCTION: CONCEPTIONS ABOUT METAPHYSICAL CORE OF MODERN SCIENCE IN THE CONTEXT OF PRESERVICE TEACHERS' WORLDVIEWS

Halil Turgut, Sinop University

DEVELOPING A PHILOSOPHY OF SCIENCE EDUCATION

Roland M. Schulz, Simon Fraser University Canada

Concurrent symposium 3.3.4 - Room A Groundfloor

ENERGY SYMPOSIUM – PART A

Symposium organizer: Fabio Bevilacqua, University of Pavia Italy

CAN HISTORY HELP UNDERSTAND ENERGY CONSERVATION?

Fabio Bevilacqua, University of Pavia Italy

THE LOST MEANING OF ‘WORK’ AND ITS HISTORY

Nikos Kanderakis, Secondary Education Council Greece

ON THE CONCEPT OF ENERGY: ECLECTICISM AND RATIONALITY*

Ricardo Lopes Coelho

Concurrent symposium 3.3.5 – Room 202 Second Floor

SYMPOSIUM:

HOW SHOULD WE INCORPORATE FAMOUS SURPRISES IN THE HISTORY OF SCIENCE INTO THE SCIENCE CURRICULUM?

Symposium organizer: Arthur Stinner, University of Manitoba, Canada

Symposium participants: Juergen Teichmann, Barbara McMillan and Ian Winchester

Concurrent symposium 3.3.6 – Room D Tenth Floor

SYMPOSIUM:

HISTORY OF SCIENCE TEXTBOOKS – PART B: NATIONAL STUDIES 1

Symposium organiser: DHST – Teaching Commission

EUROPEAN TEXTBOOKS OF PHYSICS AND GREEK PRACTICES OF SCIENCE: INTERACTIONS DURING THE NINETEENTH CENTURY

Kostas Tampakis, University of Athens/Hellenic Open University Greece

AN ANALYSIS OF THE VISUAL SYNTAX OF IMAGES ABOUT THE ENVIRONMENT IN GREEK PRIMARY SCHOOL TEXTBOOKS

George P. Stamou, Dimitrios G. Schizas and Ageliki Lefkadiou

Aristotle University of Thessaloniki Greece

EVOLUTION IN THE MIDDLE SCHOOL CURRICULUM AND COMMONLY USED TEXTBOOK IN TURKEY

Devrim Guven, Bogazici University Turkey

ANALYSING TEXTBOOK DEVELOPMENT IN HOSHANGABAD SCIENCE TEACHING PROGRAMME; THE STORY OF *BAL VAIGYANIK* (CHILD SCIENTIST) BOOKS

Kamal Mahendroo, Vidya Bhawan Education Resource Centre India

15.00-15.30 Coffee Break

15.30-17.00 Concurrent sessions 3.4.1, 3.4.2, 3.4.3, 3.4.4, 3.4.5

Concurrent session 3.4.1 - Room A Groundfloor

HISTORY OF SCIENCE TEACHING TO TEACHERS. THE ITALIAN EXPERIENCE OF THE SSIS

Liborio Dibattista and Francesca Morgese, University of Bari “Aldo Moro” Italy

‘MODELING AND INTERDISCIPLINARITY’ – A COURSE FOR PRE-SERVICE UPPER SECONDARY TEACHERS

*Uffe Thomas Jankvist, Jan Alexis Nielsen and Claus Michelsen
Southern University of Denmark*

ATLASWIKI & ATLASWIKIWORK: A “SCIENCE AND CULTURE” E-COURSE FOR PRE-SERVICE TEACHERS

Vassilis Koulountzos and Fanny Seroglou, Aristotle University of Thessaloniki Greece

SOCIAL AND ETHICAL DIMENSIONS OF SCIENTIFIC KNOWLEDGE AND SCIENCE TEACHER EDUCATION

Ana Couló, Universidad de Buenos Aires Argentina

Concurrent session 3.4.2 – Room B First Floor

FOUCAULT’S PENDULUM AND THE SCIENTIFIC-AESTHETIC SPACE

Edvin Østergaard, University of Life Sciences Norway

GEOMETRY AND THEORETICAL MUSIC IN THE RENAISSANCE

Oscar João Abdounur, Universidade de São Paulo Brazil

ART AND SCIENCE: TEACHERS’ PERSPECTIVES ON THE USE OF BEZZUOLI’S PAINTING IN SCIENCE LESSON

Burgu G. Guney and Hayati Seker, Marmara University Turkey

COLOUR VISIONS FROM THE PAST IN SCIENCE TEACHING WITHIN A CULTURAL HISTORICAL ACTIVITY THEORY (CHAT) CONTEXT

Eleni Kolokouri¹ and Xenia Arapak²

¹University of Ioannina, ²University of Thessaly Greece

Concurrent session 3.4.3 – Room C First Floor

USING HISTORICAL EXPERIMENTS FOR TEACHING THE JOULE-THOMSON EFFECT

Serhad Sadi Barutcuoglu¹, Ajda Kahveci² and Hayati Seker¹

¹Marmara University, ²Canakkale Onsekiz Mart University Turkey

TIME TRAVELING – AN INTUITIVE GRASP OF TIME TAKES TIME

Elizabeth Cavicchi, MIT Cambridge MA USA

COUNT RUMFORD, A SOCIAL BENEFACITOR THROUGH PHYSICS

S. Sakkopoulos and E. Vitoratos, University of Patras Greece

THE SHAPE OF THE EARTH AND THE PARTIAL VINDICATION OF NEWTON’S THEORY

Pierre J. Boulos, University of Windsor

Concurrent session 3.4.4 – Room 202 Second Floor

HOW SCIENCE TEXTBOOKS CONSTITUTE SUBJECTS

Jesse Bazzul, University of Toronto Canada.

SHAPING A SCIENTIFIC CULTURE: ASTRONOMY TEXTBOOKS IN THE FIRST HALF OF NINETEENTH-CENTURY PORTUGAL

Luís Miguel Carolino, Centro InterUniversitário de História das Ciências e da Tecnologia / Museu de Ciência da Universidade de Lisboa

WHOSE SCIENCE? WHOSE CURRICULUM? LOCAL KNOWLEDGE AS A NODE IN SCIENCE KNOWLEDGE NETWORKS

Chia-Ling Chiang and Huei Lee, National Dong Hwa University Taiwan

A PROPOSAL FOR A NEW GENRE: THE SCIENCE STORY

Cathrine Froese Klassen and Stephen Klassen, University of Winnipeg Canada

Concurrent session 3.4.5 – Room 01 Groundfloor

HOW DO WE TEACH? HOW DO STUDENTS LEARN?

Calvin S. Kalman, Concordia University / McGill University Montreal Canada

CHILDREN'S INTUITIVE TELEOLOGY: HOW THE PHILOSOPHY OF SCIENCE MAY INFORM CONCEPTUAL DEVELOPMENT RESEARCH

Kostas Kampourakis, Geitonias School Greece

CONVERSATION ACROSS THEORY-CHANGE

Alberto Cordero, CUNY Graduate Center & Queens College CUNY

THE CONSTRUCT OF ANCHORING – A WAY FOR ‘MEASURING’ INTERDISCIPLINARITY IN TEACHING

Uffe Thomas Jankvist, Southern University of Denmark

Concurrent session 3.4.6 – Room 05 Groundfloor

TEACHERS' UNDERSTANDINGS ON THE NATURE OF SCIENCE

Melanie O. Junio, University of the Assumption Philippines

IS THE HISTORY OF SCIENCE HELPFUL FOR RESOLVING DILEMMAS IN TEACHING NEWTON'S FIRST LAW?

Gyoungho Lee¹ and Arie Leegwater²

¹Seoul National University Republic of Korea, ²Calvin College USA

A TEACHING ATTEMPT TO PROMOTE SIXTH GRADERS' UNDERSTANDING ABOUT CERTAIN ASPECTS OF THE NATURE OF SCIENCE

N. Papadouris and C. P. Constantinou, University of Cyprus

**THE HISTORY AND PHILOSOPHY OF SCIENCE - AN ELEMENT POSSIBLE
MOTIVATING IN THE STUDY OF PHYSICS (A PROPOSED DIFFERENTIATED
APPROACHED IN THE 9TH GRADE OF ELEMENTARY SCHOOL IN STUDY
PHYSICS)**

Roberto Soares¹ and Andreia Guerra²

*¹Universidade de São Paulo (USP), ²Centro Federal de Educação Tecnológica Celso
Suckow da Fonseca- CEFET-RJ / Unidade Maracanã*

**REACHING KNOWLEDGE CONSTRUCTION AND JUSTIFICATION EXPERTISE IN
NANOMODELLING**

Suvi Tala, University of Helsinki Finland

17.00-19.30 Archeological and Byzantine Museums Guided Tour

Monday, July 4th, 2011

09.00-10.30 Concurrent sessions 4.1.1, 4.1.2, 4.1.3 & Summer School Session 4.1.4a,b,c

Concurrent session 4.1.1 - Room A Groundfloor

AN ASSESSMENT FOR PRESERVICE ELEMENTARY TEACHERS VIEWS OF NATURE OF SCIENCE

Behiye Akçay, Istanbul University Turkey

PROFESSORS' CONCEPTIONS ABOUT TEACHING AND LEARNING HUMAN ANATOMY IN THE MEDICAL SCHOOL

Juan Brunstein, Ignacia Abud, Carol Joglar and Mario Quintanilla, Universidad de Chile

WHEN BIOLOGY TEACHERS TEND TO SHY AWAY FROM PHILOSOPHY: A SOCIAL PSYCHOLOGICAL PERSPECTIVE ON THE SOCIALIZATION IN HIGHER EDUCATION

Arne Dittmer, University of Hamburg Germany

FACTORS OF THE SOCIAL AND ACADEMIC ENVIRONMENT ON THE NATURE OF SCIENCE (NOS) TEACHER'S CONCEPTIONS

Fernando Flores-Camacho and Leticia Gallegos-Cázares

Universidad Nacional Autónoma de México

Concurrent session 4.1.2 – Room B First Floor

THE HISTORY OF THE PERIODIC LAW IN THE LATIN AMERICAN CONTEXT: REVIEW JOURNALS IN THE PERIOD BETWEEN 2000 AND 2010

Fredy Ramon Garay Garay¹, Maria da Conceição Marinho Ok² and Charbel Niño El-Hani².

¹UFBA/UEFS, ²Universidade Federal da Bahia.

A NEW UNIVERSITY COURSE IN HISTORY AND PHILOSOPHY OF CHEMISTRY

Jose Antonio Chamizo Guerrero

PLURALISTIC CONSTITUTION OF CHEMISTRY: PLANES OF THOUGHT, CURRICULUM GUIDELINES, EPISTEMOLOGICAL AND DIDACTIC

Marcos Antonio Pinto Ribeiro¹ and Duarte Costa Pereira²

¹UESB Brasil, ²University of Porto Portugal

FREDERICK ACCUM (1769-1838) AND THE APPLICATION OF CHEMISTRY TO SOCIAL PROBLEMS

W. P. Palmer, Curtin University

Concurrent session 4.1.3 – Room C First Floor

FORMATIVE ASSESSMENT TO ENHANCE STUDENTS' LEARNING OF NATURE OF SCIENCE

Yalcin Yalaki and Gultekin Cakmakci, Hacettepe University

TOWARDS A MORE AUTHENTIC CLASSROOM TREATMENT OF THE SUBSTANTIVE CONTENT OF 'NATURE OF SCIENCE' AND THE PROCESS OF ITS DEVELOPMENT

Hagop A. Yacoubian, University of Alberta Canada

THE VIEWS OF PRIMARY STUDENTS ON NATURE OF SCIENTIFIC MODELS

Gul Unal Coban¹, Ercan Akpinar¹, Dilek Akpinar²

¹Dokuz Eylul University, ²Mustafa Urcan Primary School Turkey

SPANISH STUDENTS' UNDERSTANDING OF NATURE OF SCIENCE: RELATIVE AND ABSOLUTE ASSESSMENTS

María-Antonia Manassero¹, Ángel Vázquez¹, Antoni Bennàssar¹ and Antonio García-Carmona²

¹University of the Balearic Islands, ²University of Seville Spain

Summer School Session 4.1.4a – Room 202 Second Floor

SCIENTIFIC AND TECHNOLOGICAL LITERACY IN FINNISH UPPER SECONDARY SCHOOL CHEMISTRY CURRICULA, TEXTBOOKS, AND MATRICULATION EXAMINATIONS BETWEEN THE YEARS 1985 AND 2010

Veli-Matti Vesterinen, University of Helsinki, Finland

PHYSICS AND SPORTS: USING SPORTS TO TEACH PHYSICS AT SCHOOL, AND PHYSICS TO EXPLAIN SPORTS

Kostas Vourlias, Aristotle University of Thessaloniki Greece

Summer School Session 4.1.4b – Room 01 Groundfloor

FEATURES OF EDUCATIONAL USE BY THE FORMAL EDUCATION OF THE MUSEUM OF NATURAL HISTORY FIRST GENERATION. THE EFFECT OF EDUCATIONAL ACTIVITIES TAKING PLACE AT THE ZOOLOGICAL MUSEUM OF THE UNIVERSITY OF PATRAS IN THE CONSTRUCTION OF THE CONCEPT OF CLASSIFICATION FOR PRESCHOOL CHILDREN

Irene Gouskou, University of Patras Greece

ENHANCEMENT OF PEER INSTRUCTION IN A INTRODUCTORY PHYSICS LABORATORY COURSE USING CLASSROOM RESPONSE SYSTEMS

Theodoros Pierratos, Aristotle University of Thessaloniki Greece

THE IMAGE OF THE SCIENTIST IN PRIMARY EDUCATION: REPRESENTATIONS OF STUDENTS AND TEACHERS AND PEDAGOGICAL IMPLICATIONS

Giannis Samaras, University of Thessaly Greece

Summer School Session 4.1.4c – Room 05 Groundfloor

MEASURING THE IMPACT OF EPISTEMOLOGICAL TRAINING FOR FUTURE SCIENCE TEACHERS TO DEVELOP RESPONSIBILITY IN THE SCHOOL ENVIRONMENT

Thi Quynh Huong Dang, Université Montpellier 2 France

TEACHING NATURE OF SCIENCE IN PRE-SERVICE TEACHERS THROUGH THE HISTORY OF SCIENCE- THE CASE OF ELECTRIC CHARGE

Constantina Stefanidou, University of Athens Greece

10.30-11.00 Coffee Break

11.00-12.30 Plenary Session 4.1 - Room A Groundfloor

CURRENT PHILOSOPHICAL AND EDUCATIONAL ISSUES IN NATURE OF SCIENCE (NOS) RESEARCH, AND POSSIBLE FUTURE DIRECTIONS

Norman Lederman¹, Robert Nola² and Gürol Irzik³

¹Illinois Institute of Technology USA, ²The University of Auckland New Zealand, ³Sabanci University Turkey

12.30-13.30 Lunch Break

13.30-15.00 Concurrent symposia

Concurrent symposium 4.3.1 - Room A Groundfloor

ENERGY SYMPOSIUM – PART B

Symposium organizer: Fabio Bevilacqua, University of Pavia Italy

ENERGY, A TRANSFORMIST. INTERACTIVE HISTORICAL EXHIBITION

Lidia Falomo, University of Pavia Italy

A PROPOSAL FOR TEACHING ENERGY AT PRIMARY SCHOOL LEVEL. USING HISTORY AND PHILOSOPHY OF SCIENCE IN SOSIOCONSTRUCTIVIST ENVIRONMENTS

Kokkotas Panagiotis and Rizaki Aikaterini, University of Athens Greece

TEACHING ENERGY CONCEPTS BY WORKING ON THEMES OF CULTURAL AND ENVIRONMENTAL VALUE

Ugo Besson and Anna De Ambrosis, University of Pavia Italy

Concurrent symposium 4.3.2 – Room B First Floor

SYMPOSIUM:

CONCEPTUAL CHANGE IN SCIENCE EDUCATION – PERSPECTIVES FROM PHILOSOPHY AND COGNITIVE SCIENCE

Symposium organizers: Otto Lappi & Terhi Mäntylä, University of Helsinki Finland

CONCEPT POSSESSION – QUALITATIVE, QUANTITATIVE AND EXPERIMENTAL POSSESSION CONDITIONS FOR SCIENTIFIC CONCEPTS*

Otto Lappi, University of Helsinki Finland

**PROMOTING CONCEPTUAL DEVELOPMENT IN PHYSICS TEACHER EDUCATION:
COGNITIVE – HISTORICAL RECONSTRUCTION OF ELECTROMAGNETIC INDUCTION
LAW**

Terhi Mäntylä, University of Helsinki Finland

**CONCEPT DIFFERENTIATION IN LEARNING PHYSICS: A CASE OF CURRENT AND
VOLTAGE REVISITED**

Ismo T. Koponen, University of Helsinki Finland

CONCEPTUAL CHANGE AND CONCEPTUAL GAMES

Anna-Mari Rusanen and Samuli Pöyhönen, University of Helsinki Finland

Concurrent symposium 4.3.3 – Room 202 Second Floor

SYMPOSIUM:

THE IMAGE OF THE SCIENTIST AS REFLECTED IN GENDER AND CULTURE

Symposium organizer: Varda Bar, The Hebrew University of Jerusalem Israel

THE MANY FACES OF THE IMAGE OF THE SCIENTIST

Varda Bar, The Hebrew University of Jerusalem Israel

THE IMAGE OF THE SCIENTIST IN TRADITIONAL SOCIETIES

Varda Bar, Pazit Koren and Edna Rubin, The Hebrew University of Jerusalem Israel

WOMAN ROLE IN SCIENCE THE EFFECT OF INTERVENTION

Varda Bar¹ and Edna Rubin²

¹The Hebrew University of Jerusalem Israel, ²Achava College

**AN INTERVENTION TO CHANGE THE IMAGE OF THE SCIENTIST AMONG PRE-
SERVICE TEACHERS**

Pazit Koren, The Hebrew University of Jerusalem Israel

Concurrent symposium 4.3.4 – Room D Tenth Floor

SYMPOSIUM:

HISTORY OF SCIENCE TEXTBOOKS – PART C: NATIONAL STUDIES 2

Symposium organiser: DHST – Teaching Commission

GEOLOGICAL TEXTBOOKS: A SAMPLE FROM BRAZIL

Silvia F. de M. Figueirôa, University of Campinas Brazil

**SHAPING THE IMAGE OF PHYSICS IN NORWAY: ISAACHSEN'S PHYSICS
TEXTBOOKS FOR THE NORWEGIAN HIGH SCHOOL 1903 – 1969***

Trond Harkjerr, Lillehammer videregående skole Norway

THE LEGACY OF THE FIRST POSITIVISTIC TEXTBOOKS ON SCIENCE EDUCATION*

Marco Braga¹, Andreia Guerra² and José Claudio Reis³

^{1,2}University of Technology, ³State University of Rio de Janeiro Brazil

TEACHING ABOUT LIGHT VELOCITY MEASUREMENT: A COMPARISON OF PHYSICS TEXTBOOKS IN NORTH AMERICA AND GERMANY*

Stephen Klassen¹, Don Metz¹ and Peter Heering²

¹University of Winnipeg Canada, ²Universität Flensburg Germany

15.00-15.30 Coffee Break

15.30-17.00 Concurrent sessions 4.4.1, 4.4.2, 4.4.3, 4.4.4, 4.4.5

Concurrent session 4.4.1 - Room A Groundfloor

FIFTH GRADE PUPILS PERFORM BRECHT'S PLAY "THE LIFE OF GALILEO". LEARNING SCIENCE AND NATURE OF SCIENCE THROUGH DRAMA

Vasiliki Ioakeimidou, Panagiotis Piliouras and Fanny Seroglou

Aristotle University of Thessaloniki Greece

USING MEDIA REPORTS OF SCIENTIFIC RESEARCH AS A MEDIUM FOR TEACHING SCIENCE AND NATURE OF SCIENCE

Gultekin Cakmakci and Yalcin Yalaki, Hacettepe University Turkey

ARGUMENTATION FOR METACOGNITIVE SKILL DEVELOPMENT IN SCIENCE TEACHING

Paris Papadopoulos and Fanny Seroglou, University of Thessaloniki Greece

THE ROLE OF STORY IN THE ETHICAL DECISION-MAKING OF MIDDLE YEARS STUDENTS

Don Metz¹, Barbara McMillan² and Stephen Klassen¹

¹University of Winnipeg, ²University of Manitoba Canada

Concurrent session 4.4.2 – Room B First Floor

THE HISTORICAL RELATIONS BETWEEN PHYSICS AND MATHEMATICS AND THEIR IMPLICATIONS FOR THE TEACHING OF THERMODYNAMICS

Ana Raquel Pereira de Ataíde¹ and Ileana Maria Greca²

¹Universidade Estadual da Paraíba Brazil, ²Universidad de Burgos Spain

MATHEMATICS EDUCATION AND THE OBJECTIVIST PROGRAMME IN HPS

Eduard Glas, Delft University of Technology The Netherlands

THE HISTORY OF THE INTERNATIONALIZATION OF UNIVERSITY MATHEMATICAL KNOWLEDGE IN BRAZIL

Adriana Cesar de Mattos¹ and Oscar João Abdounur²

¹UNESP, ²USP Brazil

HOW PHILOSOPHY CAN HELP THE TEACHING OF SECONDARY SCHOOL MATHEMATICS

Stuart Rowlands, University of Plymouth

Concurrent session 4.4.3 – Room C First Floor

TEACHERS' CONCEPTIONS ABOUT SCIENCE: A PERSPECTIVE FROM REALISM

Agustín Adúriz-Bravo, Rafael Y. Amador, Lorena N. Inzillo, Laura Peresan, María Victoria Plaza, Alejandro P. Pujalte and Olimpia Lombardi
Universidad de Buenos Aires Argentina

TEACHERS' CONCEPTIONS ABOUT THE IMPLEMENTATION OF A HPS TEACHING SEQUENCE CONCERNING THE MOVEMENT OF A SIMPLE PENDULUM

Nikos Kanderakis, Sotiris Dossis and Dimitris Koliopoulos, University of Patras Greece

METAPHYSICS AND ITS RELATION TO SCIENCE AND PHILOSOPHY OF SCIENCE: AN EPISTEMOLOGICAL AND EDUCATIONAL APPROACH

Joannis N. Markopoulos, Aristotle University of Thessaloniki Greece

THE NATURE OF SCIENCE IN PHYSICS COURSES: THE CONTRIBUTION OF COLLECTIVE DOCUMENTARY INVESTIGATIVE SITUATIONS

Laurence Maurines and Daniel Beaufils, University Paris-Sud 11 France

Concurrent session 4.4.4 – Room 202 Second Floor

VISITING THE SCIENCE MARKET: IMPLICATIONS OF PERSPECTIVES ON ECONOMICS OF SCIENCE IN SCIENCE EDUCATION

Sibel Erduran¹ & Ebru Z. Mugaloglu²

¹University of Bristol UK, ²Bogazici University Turkey

SCIENCE FOR SALE: A NEW AGENDA FOR SCIENCE EDUCATION

Gürol Irzik, Sabanci University Turkey

THE ROLE OF THE NATURE OF SCIENCE IN DECISION-MAKING: A CASE STUDY OF UNDERGRADUATES' DEBATE ON SOCIO-SCIENTIFIC ISSUES

Hunkoog Jho¹, Jinwoong Song¹ and Ralph Levinson²

¹Seoul National University Korea, ²Institute of Education UK

METHOD OF SCIENCE AND SOCIAL TRANSFORMATION: INDIAN EXPERIENCE

Sadhna Saxena, University of Delhi India

Concurrent session 4.4.5 – Room 01 Groundfloor

THE POSSIBLE NEW IDENTITIES IN SCIENCE AND PHILOSOPHY

K. Gediz Akdeniz, Istanbul University Turkey

SPACE AND IMAGE: THE RELATIVITY (OF GALILEO AND EINSTEIN) FROM THE STANDPOINT OF ITS RELATIONSHIP WITH IMAGINATION

Leonardo Crochik¹ and João Zanetic²

¹Instituto Federal de Educação, Ciência e Tecnologia de São Paulo, ²Instituto de Física da Universidade de São Paulo Brazil

**ELABORATION OF TWO DIFFERENT TEACHING DESIGNS FOR PROMOTING
EPISTEMOLOGICAL UNDERSTANDINGS**

N. Kalyfommatou, N. Papadouris and C. P. Constantinou, University of Cyprus

GREEK SCIENTISTS' CONTEMPORARY AND HISTORICAL SELF-IMAGES

Vasilía Christidou¹, Apostolos Kouvatas² and Vassilia Hatzinikita³

¹University of Thessaly, ²Aiani Gymnasium, ³Hellenic Open University Greece

17.00-18.30 IHPST Group Business Meeting

20.00-22.30 Conference Dinner

Tuesday, July 5th, 2011

09.00-10.30 Concurrent sessions 5.1.1, 5.1.2, 5.1.3, 5.1.4, symposium 5.1.5 and Summer School Session 5.1.6

Concurrent session 5.1.1 - Room A Groundfloor

CHILDREN IDEAS CONCERNING COLOR MIXTURES OF TWO NAHUATL COMMUNITIES

Leticia Gallegos-Cázares, Elvia Perrusquía-Máximo, Elena Calderón-Canales and Beatriz García-Rivera, Universidad Nacional Autónoma de México

A FRAMEWORK FOR STUDENT QUESTIONS IN THE SCIENCE CLASSROOM

Stephen Klassen¹, Don Metz¹, Barbara McMillan² and Carly Scramstad²

¹University of Winnipeg, ²University of Manitoba Canada

THE EFFECT OF A SCIENCE CAMP ON CHILDREN'S CONCEPTION SCIENCE

Gulsen Leblebicioglu, Esra Yardimci and Duygu Metin

Abant Izzet Baysal University Turkey

STUDENTS' PREVIOUS IDEAS ON HISTORY OF PSYCHOLOGY

Zuraya Monroy-Nasr, Germán Álvarez-Díaz de León and Rigoberto León-Sánchez

National Autonomous University of Mexico

Concurrent session 5.1.2 – Room B First Floor

HIPPARCHOS VS. PTOLEMAEOS AND THE ANTIKYTHERA MECHANISM: PIN-SLOT DEVICE PARAMETERS ULTIMATELY RELATED TO REAL ECCENTRICITY OF MOON'S ORBIT

Elias Gourtsoyannis, Kunming Number 1 Senior School

FARADAY CAGE: THE USE OF SCIENTIFIC TECHNOLOGY IN PHYSICS INTERACTION

Burgu G. Guney and Hayati Seker, Marmara University Turkey

BOHR'S COMPLEMENTARITY: A POWERFUL EPISTEMOLOGICAL FRAMEWORK FOR OBJECTIVITY AND UNDERSTANDING

Pandora Hadzidaki, University of Athens Greece

'PROJEKT GALILEI' – THE PRACTICE

Friedhelm Sauer and Peter Heering, Universität Flensburg Germany

Concurrent session 5.1.3 – Room C First Floor

JOINING TOGETHER THE USEFUL AND THE PLEASANT: A BOOK WITH HISTORICAL CASE STUDIES IN PHYSICS AND THEIR EXPERIMENTAL RECONSTRUCTION

Ana Paula Bispo Silva¹, Peter Heering² and Marcelo Gomes Germano¹

¹State University of Paraiba Brazil, ²University of Flensburg Germany

DEVELOPING HISTORY OF SCIENCE MATERIALS FOR SCIENCE CLASSROOMS: A CURRICULUM ORIENTED APPROACH

Çiçek Dilek Bakanay, Serhat Irez and Hayati Şeker, Marmara University Turkey

RESEARCH INTO THE ROLE OF HISTORY OF SCIENCE IN THE FORMATION OF THE MODERN SOCIOCULTURAL APPROACHES TO SCIENCE EDUCATION AIMS

George Polozois

CONSTRUCTING HPS-BASED CASE STUDIES FOR TEACHING AND LEARNING SCIENCE

Dietmar Höttecke¹ and Andreas Henke²

¹University of Hamburg, ²University of Bremen Germany

Concurrent session 5.1.4 – Room 01 Groundfloor

A CRITICAL READING OF ECOCENTRISM AND ITS META-SCIENTIFIC USE OF ECOLOGY: IMPLICATIONS FOR SCIENCE EDUCATION AND ENVIRONMENTAL EDUCATION

Tasos Hovardas, University of Thessaly Greece

ECOLOGY AS A PERFECT CANDIDATE FOR ILLUSTRATING CORE NATURE OF SCIENCE AND SCIENTIFIC INQUIRY IDEAS

Ageliki Lefkaditou, Aristotle University of Thessaloniki Greece

THE DIMENSIONS OF ADULTS' AND CHILDREN'S CONCEPTIONS OF ENVIRONMENTAL VALUES AND IMPLICATIONS FOR ENVIRONMENTAL EDUCATION

Stella Petrou, Konstantinos Korfiatis and Tasos Hovardas, University of Cyprus

FROM “STONES & BONES” TO “GENES & MEMES”: THE ASTOUNDING REVOLUTION IN COGNITIVE ARCHAEOLOGY

Robert N. Carson, Montana State University USA

Concurrent symposium 5.1.5 – Room D Tenth Floor

SYMPOSIUM:

HISTORY OF SCIENCE TEXTBOOKS – PART D: MATHEMATICS AND CHEMISTRY

Symposium organiser: DHST – Teaching Commission

A TALE OF TWO TEXTBOOKS: RESHAPING GEOMETRY FOR COLONIAL SOCIETY

Gregg De Young, The American University in Cairo Egypt

TACQUET, DE LACAILLE: TWO EUROPEAN AUTHORS AND THE TRIP OF THEIR MATHEMATICAL TEXTBOOKS FROM EUROPE TO THE GREEK INTELLECTUAL WORLD DURING THE 18TH CENTURY

Maria Terdimou

FROM PROBLEM SOLVING TO THE TEACHING OF ALGEBRA: THE GENESIS OF THE ALGEBRA TEXTBOOK

Albrecht Heffer, Ghent University Belgium

CHEMISTRY TEXTBOOKS: MISCONCEPTIONS AND ABSENCES IN ATOMIC MODEL'S HISTORY

Cesar V. M. Lopes, University of Rio Grande do Sul (UFRGS) Brazil

Summer School Session 5.1.6 – Room 202 Second Floor

All summer school working groups meet together and exchange ideas, experiences and expectations for future summer schools.

10.30-11.00 Coffee Break

11.00-12.30 Plenary Session 5.2 - Room A Groundfloor

INVITED SYMPOSIUM – PART A:

THE ROLE OF HISTORY OF SCIENCE IN THE NEW MUSEOLOGICAL LANDSCAPE OF THE 21ST CENTURY: PROMISE, CHALLENGE AND DEMAND

Symposium organizers:

Dimitris Koliopoulos¹ and Anastasia Filippoupoliti²

¹University of Patras, ²Democritus University of Thrace Greece

Symposium participants:

Jane Wess, Science Museum London

Kamil Fadel, Universcience - Palais de la Découverte Paris

Filippo Camerota, Museo Galileo Firenze

Pedro Ruiz-Castell, Institutd'Història de la Medicina i de la Ciència

López Piñero, Universitat de València

Evangelos Vitoratos, Science & Technology Museum of the University of Patras

Flora Paparou 1st High School of Chios Museum

12.30-13.30 Lunch Break

13.30-15.00 Plenary Session 5.3 - Room A Groundfloor

INVITED SYMPOSIUM – PART B:

THE ROLE OF HISTORY OF SCIENCE IN THE NEW MUSEOLOGICAL LANDSCAPE OF THE 21ST CENTURY: PROMISE, CHALLENGE AND DEMAND

15.00-15.30 Coffee Break

15.30-17.00 Closing Session 5.4 - Room A Groundfloor