

IHPST2019 CONFERENCE
PROGRAMME

MONDAY JULY 15, 2019

SUMMER SCHOOL 1 9:30 – 11:00

COFFEE BREAK 11:00 – 11:30

SUMMER SCHOOL 2 11:30 – 13:00

**IHPST COUNCIL MEETING
11:30 – 16:30
ROOM F**

LUNCH BREAK 13:00 – 14:00

SUMMER SCHOOL 3 14:00 – 15:30

COFFEE BREAK 15:30 – 16:00

SUMMER SCHOOL 4 16:00 – 17:30

OPENING SESSION – 1ST PLENARY LECTURE 18:00 – 19:30 - ROOM A
Informing the History and Philosophy of Science through Science Education
Pierre Boulos
University of Windsor
Canada

WELCOME RECEPTION 19:30

TUESDAY JULY 16, 2019

PARALLEL 1.1 9:30 – 11:00

Science for the people

ROOM A - ps1.1

ps1.1.1

Stop teaching science: A philosophical framework to depart from Science Education into Deep Ecological Education

Nathan Willig Lima & Cristiano Moura

Universidade Federal do Rio Grande do Sul

Centro Federal de Educação Tecnológica Celso Suckow da Fonseca

Brazil

ps1.1.2

Nature of Science on Creator-Driven Popular Science YouTube Videos

Veli-Matti Vesterinen & Jaakko Lamminpää

University of Turku

Finland

ps1.1.3

Enjoy science! The ATLAS MOOC approach for science citizenship

Anna Leci & Fanny Seroglou

Aristotle University of Thessaloniki

Greece

PARALLEL 1.2 9:30 – 11:00

Enhancing Nature of Science Instruction through Research-based Strategies I
Series of panels organized by William McComas

ROOM B - ps1.2

ps 1.2.1

Considering the Meaning of, Advocacy for and Instructional Rationales Associated with the Nature of Science (NOS)

William F. McComas & Jennifer Oramous

University of Arkansas

USA

ps 1.2.2

Major Elements of NOS to Guide K-12 Science Teaching and Learning: Considering Consensus

William F. McComas

University of Arkansas

USA

ps 1.2.3

Teaching Aspects of the Nature of Science: A Review of the Literature with Implications for Effective NOS Instruction

William McComas & Noushin Nouri

University of Arkansas - University of Texas

USA

TUESDAY JULY 16, 2019

PARALLEL 1.3 9:30 – 11:00

Experiments for the science classroom inspired by the history of science

ROOM C - ps1.3

ps 1.3.1

Following Al-Jazari's Footsteps in the Science Laboratory

Hakki İlker Koştur & Hasan Özcan
Baskent University - Aksaray University
Turkey

ps 1.3.2

Integrated View of Understanding NOS: The Case of Ptolemy's Experiments on Refraction

Constantina Stefanidou & Vasiliki Psoma
National and Kapodistrian University of Athens
Greece

ps 1.3.3

Students recreate the historical experiments of Galileo

Agtzidis Ioannis & Hariton M. Polatoglou
Aristotle University of Thessaloniki
Greece

PARALLEL 1.4 9:30 – 11:00

Philosophical inputs to science education

ROOM D - ps1.4

ps 1.4.1

R. Descartes' contribution to science teaching

Zuraya Monroy Nasr
National Autonomous University of México
Mexico

ps 1.4.2

Atwood and Einstein

Paulo F. Borges & Ricardo Lopes Coelho
Universidade Federal Fluminense - Rio de Janeiro - Brazil
Universidade de Lisboa - Lisboa - Portugal

ps 1.4.3

The Theory at the Fingertips

Pierre Lauginie
University Paris-Sud
France

TUESDAY JULY 16, 2019

PARALLEL 1.5 9:30 – 11:00

Logic and rational in science learning

ROOM E - ps1.5

ps 1.5.1

More than a Method: The Science Logic Framework is Inherent to Science

Lori Maramante

Delaware Technical Community College

USA

ps 1.5.2

Towards an Educational Model for Scientific Explanation as a means to foster Scientific Literacy

Elisa Izquierdo-Acebes & Keith S. Taber

University of Cambridge

United Kingdom

ps 1.5.3

Give me some equations (and a bit of irrationality) and I will raise the World: A genealogy of de Broglie's conception on quanta

Nathan Willig Lima, Thiago da Silva Peron & Andreia Guerra de Moraes

Centro Federal de Educação Tecnológica Celso Suckow da Fonseca

Brazil

COFFEE BREAK 11:00 – 11:30

2ND PLENARY LECTURE 11:30 – 13:00 - ROOM A

Transformative Science Education activities supported by a historical, philosophical and sociocultural background

Katerina Plakitsi

University of Ioannina

Greece

LUNCH BREAK 13:00 – 14:00

TUESDAY JULY 16, 2019

POSTER SESSION 14:00 – 15:30

FIRST FLOOR – INTERIOR BALCONY

pos 1.1

Travelling with the students to the Center of the Earth

Anastasia Boutzeti & Ourania Samara
Aristotle University of Thessaloniki
Greece

pos 1.2

Aretological values: Contributing to educational leadership and science education

Stella Chatzikou, Fanny Seroglou & Joannis N. Markopoulos
Aristotle University of Thessaloniki
Greece

pos 1.3

A comparative study of slowmation narratives

Eftyhia-Despoina Dalla, Dimitra Pagarliota, Ioanna Petropoulou, Georgia Pozarity
Aristotle University of Thessaloniki
Greece

pos 1.4

Semiotic systems in the teaching of science

González, Sonia Beatriz & Escudero, Consuelo
National University of San Juan
Argentina

pos 1.5

Images of Science in Higher Education: a Discussion on Methods and Languages

Giselle Faur de Castro Catarino, Luciana Santana da Silva & José Claudio de Oliveira Reis
Universidade do Estado do Rio de Janeiro
Brazil

pos 1.6

History and Philosophy of Science and the Experiments in the Physics Teaching: A Galilean Didactic Sequence

Giselle Faur de Castro Catarino, Henrique de Souza Santos, José Claudio de Oliveira Reis & Adelino Carlos Ferreira de Souza
University of the State of Rio de Janeiro
Brazil

TUESDAY JULY 16, 2019

POSTER SESSION 14:00 – 15:30

FIRST FLOOR – INTERIOR BALCONY

pos 1.7

Dialogues on Climate Change – Training Teachers to Handle Complexity and Uncertainty in Biology Classes

Verena Frantzen & Arne Dittmer
University of Regensburg, Regensburg
Germany

pos 1.8

Reframing Theoretical Model to Promote Medical Professionalism from a STEAM curriculum in Science Education

Chia-Hui Hung
Chung Shan Medical University
Taiwan

pos 1.9

atlaswiki: 10 years web-based science education for digital citizenchip

Vassilis Koulountzos & Fanny Seroglou
Aristotle University of Thessaloniki
Greece

pos 1.10

Can Elementary Student Teachers Differentiate Weight and Mass Conceptions?

Sunggi Kwon
Daegu National University of Education
South Korea

pos 1.11

Eugenic scientific practices in Brazil: a way to discuss Brazilian science in basic education?

Mary Anne Marques, Andreia Guerra & Tânia Camel
Centro Federal de Educação Tecnológica Celso Suchoy da Fonseca Rio
Brazil

pos 1.12

Virtual Reality Applications in Science Education

Zinovia Ouzounidou
Aristotle University of Thessaloniki
Greece

TUESDAY JULY 16, 2019

POSTER SESSION 14:00 – 15:30

FIRST FLOOR – INTERIOR BALCONY

pos 1.13

The classroom study of the wave-particle duality of Louis de Broglie from the scientific publications

Thiago Silva Peron, Andreia Guerra de Moraes & Nathan Willig Lima
Instituto Federal do Sudeste de Minas Gerais
Centro Federal de Educação Tecnológica Celso Suckow da Fonseca
Brazil

pos 1.14

Science and Art: A path of insertion for the Nature of Science in the physics teaching

José Claudio de Oliveira Reis, Tainá de Araújo Carvalho & Andreia Guerra
Universidade do Estado do Rio de Janeiro
Brazil

pos 1.15

Teaching Nature and History of Science in context with ecological concepts: guiding documents and textbooks

Cristina Sousa & Isabel Chagas
Universidade do Porto - Universidade de Lisboa
Portugal

pos 1.16

Developing blood-donation related values and attitudes

Angeliki Taratsa
Aristotle University of Thessaloniki
Greece

pos 1.17

Detective stories for science teaching

Iasonas Toskas
Aristotle University of Thessaloniki
Greece

pos 1.18

A review on STEM origins and evolution

Vasiliki Zervoglou
Aristotle University of Thessaloniki
Greece

COFFEE BREAK 15:30 – 16:00

TUESDAY JULY 16, 2019

PARALLEL 2.1 16:00 – 17:30

Logic, mathematics and problem solving in science learning

ROOM A - ps2.1

ps 2.1.1

Exploring the Interpretations of 'OR' in the Scientific Language: Evidences from Science Textbooks in Taiwan

Shih-Wen Chen, Chih-Hsiung Ku & Yi-Chun Chen

National Academy for Educational Research

National DongHaw University

Cheng-Kung Primary School in Keelung

Taiwan

ps 2.1.2

The effectiveness of problem base learning and history of science approach to enhance the understanding about scientific inquiry of Turkish science preservice teachers

Nihal Dogan, Manassero-Mas MA. & Vázquez-Alonso Á.

University of the Balearic Islands

Spain

ps 2.1.3

Calculus and the Age of Processive Imagination

Robert N. Carson & Stuart K. Rowlands

Montana State University – USA

University of Plymouth - UK

PARALLEL 2.2 16:00 – 17:30

WORKSHOP 1

Make your own version of an instrument from the history of physics

Peter Heering

Europa-Universität Flensburg- Germany

PARALLEL 2.3 16:00 – 17:30

Re-contextualizing the science content

ROOM B - ps2.3

ps 2.3.1

Historical scientific drawings and the "Samba de Coco": teaching botany through the history of science and popular culture

Thailine Lima, Silvia Figueirôa & Fernando Santiago dos Santos

University of Campinas

Brazil

ps 2.3.2

A proposal for scientific literacy in second chance education: The 2CHANCE model

Anna Tzampazi

Aristotle University of Thessaloniki

Greece

ps 2.3.3

Teaching Geology Content and Process and the Nature of Science Through a Historically Contextualized Curriculum

Glenn Dolphin, Nicole LaDue & El-Mahadia Ibrahim

University of Calgary – Canada

Northern Illinois University - USA

TUESDAY JULY 16, 2019

PARALLEL 2.4 16:00 – 17:30

NOS and History of Science for young children

ROOM C - ps2.4

ps 2.4.1

Teaching NOS in preschool through book talks

Lena Hansson, Lotta Leden & Susanne Thulin
Kristianstad University
Sweden

ps 2.4.2

From teacher NOS training to preschool NOS learning inspired by women scientists

Areti Botaiti , Despina Kouklidou, Fanny Seroglou & Dimitra Kogidou
Aristotle University of Thessaloniki
Greece

ps 2.4.3

Exploring History of Science in a Science Curriculum for the Early Grades

Eleni Kolokouri & Katerina Plakitsi
University of Ioannina
Greece

PARALLEL 2.5 16:00 – 17:30

History of Science and NOS insights to educational material and textbooks

ROOM D - ps2.5

ps 2.5.1

Digital educational material of the history of Arrhenius' researches over the Greenhouse Effect

Dagkas Dimitrios & Hariton M. Polatoglou
Hellenic Open University - Aristotle University of Thessaloniki
Greece

ps 2.5.2

Diving into the Reality of Waves: An ontological discussion about the nature of Waves in undergraduate Physics textbooks used in Brazil

Nathan Willig Lima, Rodrigo Rodrigues Machado, Mariana Faria Brito Francisquini & Sergio Duarte
Universidade Federal do Rio Grande do Sul
Centro Federal de Educação Tecnológica Celso Suckow da Fonseca
Instituto Federal de Educação - Ciência e Tecnologia do Rio de Janeiro
Brazil

ps 2.5.3

Nature of Computer Simulation Models and Implications for Science Education

Maria Develaki
Hellenic Ministry of Education
Greece

TUESDAY JULY 16, 2019

CITY TOUR 17:30

With a local guide, we will visit some of the most popular highlights of the city listed among the 15 World Heritage Sites of Thessaloniki:

Rotunda - 3rd century Roman circular building with famous mosaics

Galerius Arch - an impressive Triumphal Arch built between the 3rd and 4th century

Agia Sophia - one of the oldest and most imposing byzantine churches in Greece

White Tower - the symbol-building of Thessaloniki located at the Waterfront

Monument of Alexander the Great at the Waterfront

WEDNESDAY JULY 17, 2019

PARALLEL 3.1 9:30 – 11:00

NOS perspectives on Science Education

ROOM A - ps3.1

ps 3.1.1

It's a lot of people in different places working on many ideas: possibilities from Global History of Science to learning about Nature of Science

Haira Emanuela Gandolfi

University College London - Institute of Education

UK

ps 3.1.2

Values in Science Education: A Critical Appraisal of Nature of Science in the Next Generation Science Standards

Sindhuja Bhakthavatsalam

California State University

USA

ps 3.1.3

Abduction as a Mode of Inference in Science Education

Agustín Adúriz-Bravo & Alger Sans Pinillos

Universidad de Buenos Aires - Argentina

UAB-Universitat Autònoma de Barcelona

Catalonia, Spain

WEDNESDAY JULY 17, 2019

PARALLEL 3.2 9:30 – 11:00

Enhancing Nature of Science Instruction through Research-based Strategies II
Series of panels organized by William McComas

ROOM B - ps3.2

ps 3.2.1

Supporting Science Teachers' Nature of Science Understandings through a Specially Developed Philosophy of Science Course

Kostas Kampourakis
University of Geneva
Switzerland

ps 3.2.2

Introducing the human elements of science through a context rich thematic project

Lotta Leden & Lena Hansson
Kristianstad University
Sweden

ps 3.2.3

Learning Aspects of the Nature of Science through a Variety of Authentic Science Experiences: Realities and Potential

Dina Tsybulsky
Technion – Israel Institute of Technology
Israel

ps 3.2.4

Use of the Pendulum in Teaching Aspects of the History and Nature of Science

Michael R. Matthews
University of New South Wales
Australia

PARALLEL 3.3 9:30 – 11:00

Current proposals for biology education

ROOM C - ps3.3

ps 3.3.1

Students as science communicators: an analysis of multimodal designs in a Biology classroom

Cecilia Molinari de Rennie & Victoria Auyanet
Universidad de la República
Uruguay

ps 3.3.2

Debate: Food additives as a socio-scientific issue

Ganime Aydin & Deniz Saribas
Canakkale 18 Mart University - Istanbul Aydin University
Turkey

ps 3.3.3

Modes of observation in biology. Historical cases for science teacher education

Anne Lien
The University of Agder
Norway

WEDNESDAY JULY 17, 2019

PARALLEL 3.4 9:30 – 11:00

Narratives in science education I

ROOM D - ps3.4

ps 3.4.1

Designing VISUAL-GNOSIS, a research model for analyzing multimedia activities, on scientific literacy

Alexandra Gkioka & Fanny Seroglou
Aristotle University of Thessaloniki
Greece

ps 3.4.2

Developing Scientific Literacy Through Science Fiction: A Discussion Activity

Hakkı İlker Koştur & Merve Koştur
Baskent University
Turkey

ps 3.4.3

E-book narratives about the nature of science

Eleni Gentzi & Fanny Seroglou,
Aristotle University of Thessaloniki
Greece

PARALLEL 3.5 9:30 – 11:00

History of science and philosophy of science I

ROOM E - ps3.5

ps 3.5.1

Epistemological Construction: The Role of History and Philosophy of Science

Isabel Serra & Elisa Maia
University of Lisbon
Portugal

ps 3.5.2

The Optics of Moving Bodies Under the View of Structural Realism

Felipe Prado Corrêa Pereira & Ivã Gurgel
University of São Paulo
Brazil

ps 3.5.3

Towards Periodizations of Science in the History of Science

Alexander Gabovich & Vladimir Kuznetsov
National Academy of Sciences of Ukraine NASU
Ukraine

3ND PLENARY LECTURE 11:30 – 13:00 - ROOM A

Sculpting the image of science: Communicating through icons

Andrea Woody

University of Washington

USA

LUNCH BREAK 13:00 – 14:00

WEDNESDAY JULY 17, 2019

PARALLEL 4.1 14:00 – 15:30

Experiments from the history of science in the science classroom

ROOM A - ps4.1

ps 4.1.1

What is a chemical substance? C₆₀ diffraction experiment

José A. Chamizo

Universidad Nacional Autónoma de México

Mexico

ps 4.1.2

The role of experimentation in the construction of discourses on the refraction of light: elements for teacher training

Lisbeth L. Alvarado-Guzmán , Nelson E. Hoyos, Edwin G. García Arteaga & Roberto Nardi

State University of São Paulo "Júlio de Mesquita Filho"

University of Valle

Brazil

ps 4.1.3

The dust catcher: transforming dusty collections of scientific instruments into tools of education

Marta Rinaudo & Matteo Leone

University of Turin

Italy

ps 4.1.4

Teaching the Millikan Oil Drop Experiment Historically: Problems and Perspectives

Peter Heering

Europa-Universität Flensburg

Germany

WEDNESDAY JULY 17, 2019

PARALLEL 4.2 14:00 – 15:30

Symposium organised by Andrea Guerra

Science Education in a Damaged World: Nature of Science and Social Justice I

ROOM B - ps4.2

ps 4.2.1

Nature of Science and Social Justice: contributions from the South

Cristiano Moura & Andreia Guerra

Centro Federal de Educação Tecnológica Celso Suckow da Fonseca
Brazil

ps 4.2.2

Images of scientists in textbooks aimed at students in need of adjustments

Lena Hansson & Lotta Leden

Kristianstad University
Sweden

ps 4.2.3

Stereotypes about Scientists as Resources for Teaching Nature of Science

Hagop A. Yacoubian

Lebanese American University
Lebanon

ps 4.2.4

Using the FRA to NOS Framework to Support Teaching Science for Social Justice

Zoubeida R. Dagher

University of Delaware
USA

ps 4.2.5

Political Entanglement and the Changing Nature of Science

Jesse Bazzul

University of Regina
Canada

WEDNESDAY JULY 17, 2019

PARALLEL 4.3 14:00 – 15:30

Scientific thinking and the construction of knowledge

ROOM C - ps4.3

ps 4.3.1

Scientific Thinking and Critical Thinking: A Keystone for History, Philosophy and Sociology of Science Teaching

Ángel Vázquez-Alonso & María-Antonia Manassero-Mas
University of the Balearic Islands
Spain

ps 4.3.2

Science and its representations: implications in the construction of scientific knowledge

Dayvisson Luís Vittorazzi & Alcina Maria Testa Braz da Silva
Centro Federal de Educação Tecnológica Celso Suckow da Fonseca
Brazil

ps 4.3.3

Consciousness and Physics

Ian Winchester
University of Calgary
Canada

PARALLEL 4.4 14:00 – 15:30

History of Science and Philosophy of Science II

ROOM D - ps4.4

ps 4.4.1

Academic Writing in the Middle Ages: Considerations of Al-Jazari

Merve Koştur & Hakkı İlker Koştur
Baskent University
Turkey

ps 4.4.2

What can Science Education learn from Relativism?

Gabriel Wolter Martell, Nathan Willig Lima & Fernanda Ostermann
Federal University of Rio Grande do Sul
Brazil

ps 4.4.3

Nurturing epistemic insight via reading science-related classics

Kai Ming Kiang
The Chinese University of Hong Kong
Hong Kong

WEDNESDAY JULY 17, 2019

PARALLEL 4.5 14:00 – 15:30

History of science and philosophy of science in education

ROOM E - ps4.5

ps 4.5.1

Characterization of the History of Science in Portuguese textbooks

Paulo Maurício, Ricardo Lopes Coelho, Mónica Baptista, Bianor Valente, Isabel Chagas, Cláudia Faria, Filomena Amador & Edite Bolacha
Institute Polytechnic of Lisbon - University of Lisbon
Open University - Ministry of Education
Portugal

ps 4.5.2

The Interaction between Ethics and Science from a Philosophical Perspective

Sofia Alexiadou
Aristotle University of Thessaloniki
Greece

ps 4.5.3

An Analysis of Turkish Elementary Science Textbook: How Meaning-Making Affordances are Constructed by Different Semiotic Modes

Zekai Ayik, M. Davut Gul, and Cecilia Molinari de Rennie
Universidad de la República
Uruguay

ps 4.5.4

Not to Confuse the World with its Theories: Wittgensteinian Insights on the Dependence Between Theories, Language and World-Picture Supported by Examples in Newtonian Mechanics

Maristela do Nascimento Rocha & Ivã Gurgel
University of Sao Paulo
Brazil

COFFEE BREAK 15:30 – 16:00

WEDNESDAY JULY 17, 2019

PARALLEL 5.1 16:00 – 17:30

Feminist Ethics in Science

ROOM A - ps5.1

ps 5.1.1
Feminist Ethics Reflections on Modern Science and Technology
Panatsa Natalia & Panatsa Vasiliki Maria
Aristotle University of Thessaloniki
University of Western Macedonia
Greece

ps 5.1.2
The Historical Emergence of Patriarchy in Science and Technology: A
Critical Feminist Ethics Approach
Panatsa Natalia & Panatsa Vasiliki Maria
Aristotle University of Thessaloniki
University of Western Macedonia
Greece

ps 5.1.3
Feminist Standpoint Epistemology in Education
Nefeli Glezou
University of Ioannina
Greece

PARALLEL 5.2 16:00 – 17:30

Science, Society and Culture

ROOM B - ps5.2

ps 5.2.1
Teaching environmental issues associated with climate change through
the use of alternative activities in the elementary school
Chrysoula Tsilifika & Fanny Seroglou
Aristotle University of Thessaloniki
Greece

ps 5.2.2
The Study of the Human Body Through the Cultural History of Science:
Discussing Practices and Social Actors of Science in Elementary
Education
Priscila do Amaral, Tania de Oliveira Camel, Andreia Guerra
Federal Center for Technological Education
Research Group on Teaching History of Science and Culture
Brazil

ps 5.2.3
Science Ethics in Digital Narratives: The case of forest
Konstantinos Katsinikas, Eleni Gentzi, Antonios Tzortzis & Fanny
Seroglou
Aristotle University of Thessaloniki
Greece

WEDNESDAY JULY 17, 2019

PARALLEL 5.3 16:00 – 17:30

NOS in Science Education

ROOM C - ps5.3

ps 5.3.1

The Effect of Question Type on Engagement with NOS Ideas

Jerrid Kruse, Isaiah Kent-Schneider, Jaclyn Easter, Kinsey Zacharski & Molly Rockefeller
Drake University
USA

ps 5.3.2

Changes in pre-service science teachers' understanding of the social aspects of nature of science

Sila Kaya, Orla McCormack, Sibel Erduran & Naomi Birdthistle
University of Limerick - Ireland
University of Oxford – England
Swinburne University of Technology - Australia

ps 5.3.3

Pre-Service Science Teachers' Incorporation of Aspects of NOS in Formal and Informal Learning Setting Designs

Deniz Saribas & Mehpare Saka
Istanbul Aydin University - Trakya University
Turkey

ps 5.3.4

Fostering Pre-Service Science Teachers' Learning About Nature of Science Using a Problem-Based Learning Activity on Biogeography

Cristina Sousa & Isabel Chagas
Universidade do Porto - Universidade de Lisboa
Portugal

PARALLEL 5.4 16:00 – 17:30 - ROOM D

Discussion

Reflections from the Editors of Science & Education on research on History, Philosophy and Sociology of Science in Science Education

Kostas Kampourakis, University of Geneva, Switzerland

Sibel Erduran, University of Oxford, United Kingdom

SCIENCE & EDUCATION EDITORIAL BOARD MEETING

17:30 ROOM F

THURSDAY JULY 18, 2019

PARALLEL 6.1 9:30 – 11:00

Socio-scientific perspectives on NOS education

ROOM A - ps6.1

ps 6.1.1

Re-conceptualizing Nature-of-Science Education in the Age of Social Media

Dietmar Höttecke & Douglas Allchin
University of Hamburg – Germany
University of Minnesota - USA

ps 6.1.2

How Do University Students Perceive Social-Institutional Aspects of Nature of Science?

Selin Akgun & Ebru Kaya
Bogazici University
Turkey

ps 6.1.3

Reconceptualising the Teaching of Socio-Scientific Reasoning in the Post-Truth Era

Arne Dittmer, Marcus Grace & Jürgen Menthe
University of Regensburg - University of Hildesheim - Germany
University of Southampton – UK

ps 6.1.4

Investigation of pre-service science teachers' understanding of the concepts 'science' and 'pseudoscience'

Yasemin Doygun, Hasan Ozcan & Mehmet FatihTasar
Aksaray University - Gazi University
Turkey

PARALLEL 6.2 9:30 – 11:00

Enhancing Nature of Science Instruction through Research-based Strategies III
Series of panels organized by William McComas

ROOM B - ps6.2

ps 6.2.1

A Critical Thinking Approach for Teaching Nature of Science: Rationale, Procedure and Feasibility Study

Hagop A. Yacoubian
Lebanese American University
Lebanon

ps 6.2.2

Storytelling as a Pedagogical Tool in Nature of Science Instruction

Nausica Kapsala and Evangelia Mavrikaki
National & Kapodistrian University of Athens
Greece

ps 6.2.3

Teaching the Limits of Science with Card Sorting Activities

Lena Hansson
Kristianstad University
Sweden

THURSDAY JULY 18, 2019

PARALLEL 6.3 9:30 – 11:00

Epistemological and practical insights on science learning

ROOM C - ps6.3

ps 6.3.1

Practical Foundations for a Science of Education

Paul Zachos & Monica De Tuya

ACASE – The Association for the Cooperative Advancement of Science and Education

USA

ps 6.3.2

Theories and research on Conceptual Change: Between Philosophy of Science and Science Teaching. An Approach to its Epistemological problems

Zamudio, Alicia Mabel

Universidad Nacional de Lanus

Universidad Nacional de Tres de Febrero

Argentina

ps 6.3.3

Teaching and Learning of the First Thermodynamics Law: The Sufficiency of the Macroscopic Framework from an Epistemological and Didactical Perspective

Kalliopi Meli & Dimitrios Koliopoulos

University of Patras

Greece

PARALLEL 6.4 9:30 – 11:00

Narratives in science education II

ROOM D - ps6.4

ps 6.4.1

Engaging Students in Science: The Potential Role of Narrative Thinking and Romantic Understanding

Yannis Hadzigeorgiou & Roland M. Schulz

Simon Fraser University - Canada

University of the Aegean - Greece

ps 6.4.2

Revealing Science's hidden-actors through writing narratives in a cultural approach to Physics classes

Hermann Schiffer & Andreia Guerra

Centro Federal de Educação Tecnológica Celso Suckow da Fonseca

Brazil

ps 6.4.3

The science edutainment pathway towards learning

Fanny Seroglou, Christina Konstantinidou, Dimitra Prekka, Maria

Seroglou, Christina Duka & Kyriaki Vogiatzi

Aristotle University of Thessaloniki

Greece

THURSDAY JULY 18, 2019

PARALLEL 6.5 9:30 – 11:00

History of science and NOS in educational programmes

ROOM E - ps6.5

ps 6.5.1

The image of science sculpted by the Brazilian higher education access policy

Matheus Monteiro Nascimento, Gabriel Viero & Nathan Willig Lima
Federal University of Rio Grande do Sul
Brazil

ps 6.5.2

Promoting Aspects of the Nature of Scientific Measurement during a Program about Climate and Energy Literacy in Primary Education

Panagiotis Piliouras, Vasiliki Ioakimidou, Maria Dimopoulou, Vasilis Aidinopoulos, Katerina Vlahostergiou, Katerina Plakitsi & Fanny Seroglou
Ministry of Education
University of Ioannina
Aristotle University of Thessaloniki
Greece

ps 6.5.3

The status of the history of science in the frame of different educational programmes: a case of Southern Federal University (Russia)

Konstantin Skripnik & Ekaterina Shashlova
Southern Federal University
Russia

COFFEE BREAK 11:00 – 11:30

PARALLEL 7.1 11:30 – 13:00

STEM education

ROOM A - ps7.1

ps 7.1.1

The Philosophy in/of Integrated STEM Education

Jairo Ortiz-Revilla, Ileana M. Greca & Agustín Adúriz-Bravo
Universidad de Burgos – Spain
Universidad de Buenos Aires - Argentina

ps 7.1.2

Socrates' house: A suitable paradigm to introduce pre-service teachers to Education for Sustainable Development

Anthoula Maidou, Katerina Plakitsi & Hariton M. Polatoglou
University of Ioannina,
Aristotle University of Thessaloniki,
Greece

ps 7.1.3

A STEM education proposal for pre-service teachers

Vassilis Koulountzos, Ioannis Papadopoulos, Nikos Lambrinos & Fanny Seroglou
Aristotle University of Thessaloniki
Greece

THURSDAY JULY 18, 2019

PARALLEL 7.2 11:30 – 13:00

NOS in Biology Education

ROOM B - ps7.2

ps 7.2.1

When the East meets the West: A comparative approach of teaching traditional Chinese medicine in a science general education course

Wai Man Szeto

The Chinese University of Hong Kong

Hong Kong

ps 7.2.2

History and Nature of Science about the Origin of Life: Analysing Textbooks and Guidelines for a Novel Teaching Approach

Cristina Sousa & Isabel Chagas

Universidade do Porto - Universidade de Lisboa

Portugal

ps 7.2.3

Co-teaching and interdisciplinary activity in teachers training: does the phytoplankton know physics?

Armando Gil Ferreira dos Santos, Gloria Regina Pessoa Campello

Queiroz, Patrícia Domingos & Giselle Faur de Castro Catarino

Universidade do Estado do Rio de Janeiro

Centro Federal de Educação Tecnológica Celso Suckow da Fonseca

Brazil

PARALLEL 7.3 11:30 – 13:00

The Mathematics Culture

ROOM C - ps7.3

ps 7.3.1

Is mathematics the language of physics? The case of mathematization of electostatics

Lucas Cavalari Nardi, Ciro T. T. Ferreira & Cibelle Celestino Silva

University of São Paulo

Brazil

ps 7.3.2

History and Philosophy as Facilitating Understanding of Mathematics Knowledge as a Culture

Lina Vinitzky-Pinsky & Igal Galili

Achva Academic College and the Hebrew University of Jerusalem

Israel

ps 7.3.3

Philosophy and History as an Epic Narrative in Secondary School Mathematics

Stuart Rowlands & Robert Carson

University of Plymouth

UK

THURSDAY JULY 18, 2019

PARALLEL 7.4 11:30 – 13:00

Proposals for Science Education inspired by Galileo

ROOM D - ps7.4

ps 7.4.1

A Science Festival approach to History of Science The case of Galileo's Dialogue

Maria Panagopoulou, Constantina Stefanidou, Anthimos Chalkidis,
Constantine Skordoulis & Kosmas Gazeas
National and Kapodistrian University of Athens
Greece

ps 7.4.2

History of Science through Art for Science Education: the case of Galileo

María-Antonia Manassero-Mas, Margarita-Ana Vázquez-Manassero &
Ángel Vázquez-Alonso
University of the Balearic Islands - Autonomous University of Madrid
Spain

ps 7.4.3

Galileo, Brecht and the Nature of Science: Science Teaching inspired by Drama and History of Science

Vasiliki Ioakeimidou, Kyriaki Vogiatzi, Panagiotis Piliouras & Fanny Seroglou
Aristotle University of Thessaloniki
Greece

PARALLEL 7.5 11:30 – 13:00

History of science in science teaching

ROOM E - ps7.5

ps 7.5.1

The Scientist's Journey: Writing Scientific Stories Based on the Archetypical Story Structure to Teach Science

Nausica Kapsala & Evangelia Mavrikaki
National and Kapodistrian University of Athens
Greece

ps 7.5.2

Olbers' paradox: the development of a riddle. A stereotypical approach that reshape the conception of the world

Argiana Foteini
University of Aegean
Greece

ps 7.5.3

Investigative Community: Re-introducing Science through Continuity in Teaching and Learning among Classroom Members and Those of Other Times

Elizabeth Cavicchi
Edgerton Center - MIT
USA

ps 7.5.4

An Investigation on Science Teacher Candidates' Interpretations of the Serendipity Concept

Hasan Ozcan & Yasemin Doygun
Aksaray University
Turkey

THURSDAY JULY 18, 2019

LUNCH BREAK 13:00 – 14:00

IHPST MEMBERS MEETING 14:00 – 15:30 ROOM A

COFFEE BREAK 15:30 – 16:00

PARALLEL 8.1 16:00 – 17:30

WORKSHOP 2

Developing slowmation narratives for NOS teaching

Fanny Seroglou, Vassilis Koulountzos, Anna Letsi & Eleni Gentzi

Aristotle University of Thessaloniki

Greece

PARALLEL 8.2 16:00 – 17:30

Philosophy of Science and Science Education

ROOM A - ps8.2

ps 8.2.1

Mario Bunge at 100 years: The Enlightenment Project and Science Education

Michael R. Matthews

University of New South Wales

Australia

ps 8.2.2

Do Selective Realists Conceded Too Much to Non-realists?

Alberto Cordero

CUNY Graduate Center & Queens College CUNY

City University of New York

USA

ps 8.2.3

Writing philosophy in science teachers education: addressing some obstacles

Ana C. Couló

Universidad de Buenos Aires - Instituto de Filosofía

Argentina

THURSDAY JULY 18, 2019

PARALLEL 8.3 16:00 – 17:30

NOS redefining the science content

ROOM B - ps8.3

ps 8.3.1

Pedagogical Content Knowledge (PCK) for the experimental activity Chemical Kinetics: possible relations with the Nature of Science (NdC)

Kaíza M. P. H Cavalcanti, Glória R. P. C. Queiróz & Roberto S. C. Hastenreiter
Universidade Estadual do Rio de Janeiro
Brazil

ps 8.3.2

History of pressure implemented in a Nature of Science Professional Development Program for science teachers

Anna Koumara
University of Ioannina,
Greece

ps 8.3.3

Sacrificing Content for NOSK? Tales From the Trenches

Ami J. Friedman
Walled Lake Western High School
USA

PARALLEL 8.4 16:00 – 17:30

History of science and the science content

ROOM C - ps8.4

ps 8.4.1

Organizing knowledge for teaching: Conceptual groundings of electric field and their historical connections

Terhi Mäntylä, Maija Nousiainen & Ismo Koponen
Tampere University - University of Helsinki
Finland

ps 8.4.2

Teaching and Learning the Language of Chemistry: The Role of History and Philosophy of Science

Elisa Maia & Isabel Serra
University of Lisbon
Portugal

ps 8.4.3

The Polysemic Nature of Photons: Hybridization and Backwards Causation in Contemporary Undergraduate Quantum Physics Textbooks

Nathan Willig Lima, Matheus Monteiro Nascimento, Cláudio José de Holanda Cavalcanti & Fernanda Ostermann
Federal University of Rio Grande do Sul
Brazil

NEW IHPST COUNCIL MEETING

17:30 – 19:30

ROOM F

CONFERENCE DINNER 19:30

FRIDAY JULY 19, 2019

PARALLEL 9.1 9:30 – 11:00

Digital application in education

- ROOM A - ps9.1**
- ps 9.1.1
History of 3d printing in a teacher training course
Dimitrios D.Tsiastoudis & Hariton M. Polatoglou
Deaf and H.O.H. School - Greek Ministry of Education
Aristotle University of Thessaloniki
Greece
- ps 9.1.2
Exploring how the Strategic Undergraduate STEM Talent Acceleration Initiative (SUSTAIN) influenced students' understanding of the nature of science in a first-year forum course
Gaye Ceyhan, Alia Thompson, Jeremy Sloane, John W. Tillotson & Jason Wiles
Syracuse University
USA
- ps 9.1.3
Transformations and Emerging Implementations of Scientific Practices in the Digital Age
Dina Tsybulsky
Technion – Israel Institute of Technology
Israel

PARALLEL 9.2 9:30 – 11:00

Symposium organized by Vassilis Koulountzos Creativity Art and Science in Primary Education (CASE)

- ROOM B - ps9.2**
- ps 9.2.1
Learning Science Through Theater
Menelaos Sotiriou & George Triantafyllou
Science View
Greece
- ps 9.2.2
Learning Science Through Digital Storytelling
Giannis Alexopoulos & Sofoklis Sotiriou
Ellinogermaniki Agogi
Greece
- ps 9.2.3
Learning Science Through Slowmation
Fanny Seroglou, Vassilis Koulountzos & Anna Letsi
Aristotle University of Thessaloniki
Greece
-

FRIDAY JULY 19, 2019

PARALLEL 9.3 9:30 – 11:00

History of science and science teaching

ROOM C - ps9.3

ps 9.3.1

History of Science and experimentation in the study of living beings in the middle school

Tercio Augusto Penteado Barbosa & Silvia Fernanda de Mendonça Figueirôa

State University of Campinas
Brazil

ps 9.3.2

A review of astrophysics and a proposal for secondary education

Nikolaos Dintsios, Artemi Stamatia & Polatoglou Hariton
Aristotle University of Thessaloniki
Greece

ps 9.3.3

Recuperating dead science: the original idea of Gauss' principle

Ricardo Lopes Coelho
University of Lisbon
Portugal

PARALLEL 9.4 9:30 – 11:00

Contemporary proposals for motivating science

ROOM D - ps9.4

ps 9.4.1

Engineering education among 9-15 years old representing the disadvantaged sample group

Ganime Aydın , Mehpare Saka, Jale Çakıroğlu, Ezgi Ibis Ercihan, Yesim Ozansak Topcu & Vildan Saruhan
Canakkale 18 Mart University - Trakya University - Middle East Technical University - Istanbul Aydın University
Turkey

ps 9.4.2

Design and evaluation of a teaching strategy in the framework of science education: Introduction to bioclimatic and sustainability principles

Alexandra Gkioka & Fanny Seroglou
Aristotle University of Thessaloniki
Greece

ps 9.4.3

Students as science communicators: an analysis of multimodal designs in a Biology classroom

Cecilia Molinari de Rennie & Victoria Auyanet
Universidad de la República
Uruguay

FRIDAY JULY 19, 2019

PARALLEL 9.5 9:30 – 11:00

NOS and the appreciation of science

ROOM E - ps9.5

ps 9.5.1

A Fleckian View about the Genesis and Development of Quantum Mysticism and its Contributions to Science Teaching

Saito, Marcia Tiemi & Gurgel, Ivã

University of Sao Paulo - Federal Institute of Parana
Brazil

ps 9.5.2

Student's ideas about models in modelling Young's double slit experiment

Juliana Machado

Centro Federal de Educação Tecnológica Celso Suckow da Fonseca
Brazil

ps 9.5.3

Investigating Students' View of Nature of Science Activities as Reflecting Authentic Science

Jerrid Kruse, Kinsey Zacharski, Isaiah Kent-Schneider & Molly Rockefeller
Drake University
USA

COFFEE BREAK 11:00 – 11:30

CLOSING SESSION 11:30 – 13:00

Visit to Archeological and Byzantine Museums

The Archaeological Museum of Thessaloniki is one of the largest museums in Greece and the central museum of northern Greece. All visitors are welcome to experience its unique collections of ancient artifacts as well as its rich and extrovert cultural activities.

In the Byzantine Museum the visitor can visit the 11 galleries of the permanent exhibition and can travel back to the world of Byzantium through thematic sections concerning the daily private and public life, worship and the burial customs, architecture and art, the commercial and business activity. Visitors can discover the continuity and the relationship between past and present.