Presentations

1.1 A Oral: Scientific thinking

**Time:** Tuesday, 18/Sep/2012: 11:15am - 12:45pm

1.1 A Oral: 1
**Competential Feedback Effects on Scientific Reasoning, Calibration, and Self-Efficacy**
Mareike Wollenschläger¹, Jens Möller², Ute Harms³
¹IPN – Leibniz Institute for Science and Mathematics Education, Germany; ²Department of Psychology at the University of Kiel, Germany

1.1 A Oral: 2
**Problem Solving in Biology: Assessing Competence Development**
Julia Arnold, Kerstin Kremer, Jürgen Mayer
Department of Biological Education, University of Kassel

1.1 A Oral: 3
**Age-related differences in inquiry-based learning in biology class**
Angelika Kremer, Kirsten Schlüter
Universität zu Köln, Germany

1.1 B Oral: Biology education in informal settings

**Time:** Tuesday, 18/Sep/2012: 11:15am - 12:45pm

1.1 B Oral: 1
**Do zoo visitors need zoology knowledge to understand biodiversity conservation?**
Tracy Dove¹, Jenny Byrne²
¹Isle of Wight Zoo, United Kingdom; ²University of Southampton

1.1 B Oral: 2
**Learning at the museum: motivational aspects of guided tours**
Jennifer Härtling¹, Andrea Möller², Norbert Pütz³
¹University of Vechta - Biology and Didactic, Germany; ²University of Trier - Biology and Didactic, Germany

1.1 B Oral: 3
**Beginning biology – interest and inquiry in the early years**
Annette Scheersoi¹, Sue Dale Tunnicliffe²
¹Goethe University Frankfurt, Germany; ²Institute of Education (IOE) London, England

1.2 A Poster: Session I

**Time:** Tuesday, 18/Sep/2012: 2:15pm - 4:15pm

1.2 A Poster: 1
**Animal biodiversity in ecosystems - the consciousness of pupils and students**
Eija Inkeri Yli-Panula
University of Turku, Finland

1.2 A Poster: 2
**Promoting the development of students’ coherence of biological concepts**
Micha Ummels¹, Marcel Kamp¹, Hans de Kroon¹, Kerst Boersma²
¹Radboud University, Netherlands, The; ²University of Utrecht, Netherlands, The

1.2 A Poster: 3
**A pattern that connects (some) students’ explanations for species evolution**
Jörg Zabel¹, Harald Gropengießer²
¹Universität Leipzig, Institute for Biology, Germany; ²Institute for Science Education, Leibniz Universität Hannover, Germany

1.2 A Poster: 4
**A cognitive model for students’ purpose-based conceptions about biological adaptation**
Holger Weitzel
University of Education Weingarten, Germany

1.2 A Poster: 5
**Students’ Perceptions of Biology --- Glimpses from Indian Context**
Meena Kharatmal, Sugra Chunawala
Homi Bhabha Centre for Science Education (TIFR), Mumbai, India
1.2 A Poster: 6
PRIMARY SCHOOL PUPIL’S CONCEPTIONS ABOUT THE RESPIRATORY TRACT AND SMOKING UNHEALTHY EFFECTS
Rosa Branca Tracana¹, Sara Viveiros², Graça S. Carvalho³
¹Polytechnic Institute of Guarda, Guarda, Portugal; ²CIEC, Institute of Education, University of Minho, Braga, Portugal; ³CIEC, Institute of Education, University of Minho, Braga, Portugal

1.2 A Poster: 7
Enhancing scientific inquiry learning and the quality of motivation - Evaluation of a competence-orientated science-course in year 11
Cornelia Stiller, Stefan Hahn, Andreas Stockey, Matthias Wilde
Universität Bielefeld, Germany

1.2 A Poster: 8
PREDICTORS OF ACADEMIC SUCCESS: ACHIEVEMENT MOTIVATION OF BIOLOGY AND ACADEMIC SELF-EFFICACY
Mirac Yilmaz¹, Hikmet Katırcıoğlu²
¹Hacettepe University, Faculty of Education, Department of Science and Mathematics Fields in Secondary Education, Turkey; ²Gazi University, Faculty of Education, Department of Science and Mathematics Fields in Secondary Education, Turkey

1.2 A Poster: 9
Does Judgment Quality affect the Attitude-Behaviour-Gap in Organ Donation?
Melanie Basten, Matthias Wilde
Universität Bielefeld, Germany

1.2 A Poster: 10
Development of learners' attitudes and concepts at transitions
Alexandra Moormann
Humboldt University of Berlin, Germany, Department of Biology, Didactics of Biology

1.2 A Poster: 11
Undergraduate biology students' ability to read and evaluate research articles
Miriam Ossevoort, Edwin van Lacum, Martin Goedhart
University of Groningen, Netherlands, The

1.2 A Poster: 12
The natural history perspective on bio-communities – a narrative approach
Martin Jurgowiak, Jörg Zabel
Universität Leipzig, Germany

1.2 B Poster: Session I
Time: Tuesday, 18/Sep/2012: 2:15pm - 4:15pm

1.2 B Poster: 1
Fostering Scientific Modeling with Biological Worked-out Examples
Anja Czeskleba, Philipp Schmiemann
Freie Universität Berlin, Germany

1.2 B Poster: 2
Experience-based teaching and learning of socioscientific issues
Shu-Nu Chang Rundgren¹, Carl-Johan Rundgren²
¹Karlstad University, Sweden; ²Stockholm University, Sweden

1.2 B Poster: 3
Embodied metaphors and analogies as imaginative thinking tools
Kai Niebert¹, Treagust David²
¹Leibniz Universität Hannover; ²Curtin University of Technology, Australia

1.2 B Poster: 4
Metacognitive knowledge as a predictor for communication competence in science
Kathrin Köpfler, Julia Schwanewedel, Jürgen Mayer
Universität Kassel, Germany

1.2 B Poster: 5
How teenagers justified their swine flu vaccination decision
Mats Lundström, Margareta Ekborg
Malmö University, Faculty of Education and Society, Sweden

1.2 B Poster: 6
The emergence of criteria for evaluating models in science classrooms
Andres Acher¹, Lisa Kenyon²
¹Martin-Luther-Universität Halle-Wittenberg, Germany; ²Wright State University, USA
Students’ perspectives on leaves - Challenges in the tree identification processes
Svenja Affeldt, Dennis Stahl, Jorge Groß
Leibniz University of Hannover, Germany

Addressing the ideas of replication and observer bias to 5th grade students conducting a mealworm experiment
Roman Asshoff, Hilwerling Ruth, Philipp Westphal
Zentrum für Didaktik der Biologie, WWU Münster, Germany

Teeth are not like Teeth: Students’ Conceptions when Identifying Clams
Dennis Stahl, Svenja Affeldt, Jorge Groß
Leibniz University Hannover, Germany

Students’ conceptions about sexuality and ways to clear their doubts
Zélia Ferreira Anastácio, Ana Luisa Alves
University of Minho, Portugal

Context-contingent influences on the competency of evaluation and judgment
Melanie Werner, Julia Schwanewedel, Jürgen Mayer
Universität Kassel, Germany

The Hidden Hand That Shapes Conceptual Understanding
Harald Gropengiesser, Kai Niebert, Tanja Riemeier
Leibniz Universität Hannover, Germany

Learning Study in upper secondary school: What is the relationship between genome and individual characteristics?
Mona Holmqvist Olander1, Clas Olander1, Kerstin Gross2, Elsa Fagerjord2
1University of Gothenburg, Sweden; 2Bäckäng Upper Secondary School, Borås, Sweden

Observation competency training in guided play activities
Lucia Kohlhaut, Ulrike Rutke, Birgit Neuhaus
Ludwig-Maximilians-University Munich, Germany

The application of concept maps in teaching invertebrate zoology
Jelena D. Stanisavljević, Ljubiša Ž. Stanisavljević
University of Belgrade - Faculty of Biology, Serbia

The didactical implications of biology teachers’ understanding of research as praxis
William John Fraser1, Annemarie Hattingh2, Erna Du Toit2, Mia Abrie1, Johannes Slabbert1, Jan Nieuwenhuis3, Lindelani Mnguni1, Estefie Gaigher2, Elize Randall2
1University of Pretoria, South Africa; 2University of Cape Town; 3University of the Free State

Analyzing students’ argumentations in reasoning about processes of adaptation
Nicolai Basel1, Helmut Prechtl2, Ute Harms3
1IPN-Leibniz-Institute for Science and Mathematics Education, Germany; 2University of Potsdam - Institute of Biology Education

Natures of Science: A Case Study of Biodiversity Conservation
Esther M. van Dijk
University of Hildesheim, Germany

LEARNING BIOLOGY BY LIVING IT - regulation of tenseness
Hélène Bergentoft, Mona Holmqvist
University of Gothenborg, Sweden
1.2 C Poster: 8

**INCLUSIVE SCIENCE: TEACHERS’ ATTITUDES AND PRACTICES**

António Costa¹, Maria Eduarda Ferreira¹, Carlos Sousa Reis², José Miguel Salgado¹

¹Instituto Politécnico da Guarda, Portugal; ²Unidade de Investigação para o Desenvolvimento do Interior; ³UDI – Research Unit for Inland Development

1.2 C Poster: 9

**Using Concept Maps to foster students’ socioscientific reasoning and decision making**

Anne Nitsch, Sabina Eggert, Susanne Bögeholz

Georg-August-University Göttingen, Germany

1.2 C Poster: 10

**ECO-SCHOOL EFFECTIVENESS: A MATTER OF VALUES?**

Jelle Boeve-de Pauw, Peter Van Petegem

University of Antwerp, Belgium

1.2 C Poster: 11

**Content choices within a concept-context approach in primary science education**

Annelotte Lammers¹, Ronald Keijzer¹, Marja van Graft²

¹Freudenthal Institute for Science and Mathematics Education, Utrecht University, The Netherlands; ²Netherlands Institute for Curriculum Development (SLO), Enschede, The Netherlands

1.2 C Poster: 12

**Comparative Study in Biology Lessons between Germany and China**

Ning Liu, Birgit Neuhaus

Ludwig-Maximilians-Universität München, Germany

1.3 A Oral: Student conceptions

**Time:** Tuesday, 18/Sep/2012: 4:45pm - 6:30pm

1.3 A Oral: 1

**Activating a productive epistemological modus – Effects of reflecting intuitive ideas**

Kerstin Oschatz

University of Hamburg, Germany

1.3 A Oral: 2

**Effects of experiments for pupil’s understanding of plant nutrition**

Tanja Steigert, Marcus Schrenk

Pädagogische Hochschule Ludwigsburg, Germany

1.3 A Oral: 3

**Explaining transfer: why students have difficulties recontextualising cellular respiration**

Menno Wierdsma¹, Marie-Christine Knippels¹, Bert van Oers², Kerst Boersma³

¹Freudenthal Institute for Science and Mathematics Education, Utrecht University, The Netherlands; ²Department of Theory and Research in Education, VU University Amsterdam, Netherlands, The; ³Department of Teacher Education, University of Groningen, Netherlands, The

1.3 B Oral: Teaching socio-scientific issues

**Time:** Tuesday, 18/Sep/2012: 4:45pm - 6:30pm

1.3 B Oral: 1

**Intuitive knowledge acquisition when learning with computer simulations in ecology**

Marc Eckhardt¹, Detlef Uhrahne², Olaf Conrad³

¹Leibniz Institute for Science and Mathematics Education (IPN), Germany; ²Martin-Luther-University, Germany; ³University of Hamburg, Germany

1.3 B Oral: 2

**Reasoning patterns in processing multi-criteria socio-scientific decision-making situations**

Nicos Papadouris, Ero Ioannou

University of Cyprus, Cyprus

1.3 B Oral: 3

**Students understanding of the logics of the media about socioscientific issue**

Grégoire Molinatti¹, Laurence Simonneaux²

¹Université des sciences de Montpellier - IUFM, France; ²Ecole Nationale de Formation Agronomique, Toulouse, France

1.3 B Oral: 4

**Arguments, Values & Beliefs of Pre-Service Teachers discussing Socio-scientific Issues**

Marina Castells, Katerina Konstantinidou

Universitat de Barcelona, Spain
2.1 A Symposium: Supporting students' interactions with Socio-Scientific Issues

Time: Wednesday, 19/Sep/2012: 9:00am - 11:00am

2.1 A Symposium: 1
Supporting students’ interactions with Socio-Scientific Issues
Beverley France¹, Sally Birdsall¹, Ralph Levinson², Olivier Morin³, Laurence Simmonneaux³, Jean Simonneaux³
The University of Auckland, New Zealand; ¹University of London; ²Ecole Nationale de Formation Agronomique de Toulouse, France; ³Lyon 1 (Université Claude Bernard)

2.1 A Symposium: 2
Digital technology to support student’s Socio-Scientific Reasoning about Environmental Issues
Olivier MORIN², Laurence SIMONNEAUX¹, Jean SIMONNEAUX¹
¹Université Tououse 2 le Mirail, France; ²Université Claude Bernard Lyon 1

2.1 A Symposium: 3
Promoting constructive discourse in philosophical issues through an online forum
Ralph Levinson
Institute of Education University of London, United Kingdom

2.1 A Symposium: 4
Changing attitudes to animal research: Introducing the scientists’ perspective
Beverley France, Sally Birdsall
The University of Auckland, New Zealand

2.1 A Symposium: 5
A pedagogy to support understanding of sustainability in 5-year-old children
Sally Birdsall
The University of Auckland, New Zealand

2.1 B Oral: Student conceptions

Time: Wednesday, 19/Sep/2012: 9:00am - 11:00am

2.1 B Oral: 1
Molecular Mechanistic Reasoning: an educational strategy to bridge the gap between the molecular and cellular level.
Marc H.W. van Mil¹,²,³, Paulien A. Postma¹, Dirk Jan Boerwinkel¹,²,³, Arend Jan Waarlo¹,⁵
¹Utrecht University, Netherlands, The; ²Cancer Genomics Centre; ³CSG Centre for Society and the Life Sciences

2.1 B Oral: 2
The interpretation of students' Lamarckian explanations
Kerst Thomas Boersma¹, Caspar Geraedts²
¹Freudenthal Institute for Science and Mathematics Education, Netherlands, The; ²De Praktijk, Amsterdam, Netherlands, The

2.1 B Oral: 3
The Role of Conceptions and Metaphors in Students’ Understanding of Seeing
Sarah Dannemann¹, Dirk Krüger²
¹Leibniz University Hannover, Germany; ²Freie Universität Berlin

2.1 B Oral: 4
The effect of teaching on children’s ideas about plants’ protection
Stella Petrou, Konstantinos Korfiatis
University of Cyprus, Cyprus

2.2 A Oral: Health education

Time: Wednesday, 19/Sep/2012: 11:30am - 12:30pm

2.2 A Oral: 1
A hands-on activity to promote healthy sun exposure behaviours
Maria Joao Fonseca¹,²,³, Patricio Costa¹, Leonard Lencastre⁴, Fernando Tavares¹,³
¹Faculdade de Ciências, Departamento de Biologia, Universidade do Porto, Portugal; ²IBMC - Instituto de Biologia Molecular e Celular, Universidade do Porto, Portugal; ³CIBIO - Centro de Investigação em Biodiversidade e Recursos Genéticos, Universidade do Porto, Portugal; ⁴Faculdade de Psicologia e de Ciências da Educação, Universidade do Porto, Portugal

2.2 A Oral: 2
Comparative Analysis of Food and Nutrients in Textbooks of 16 Countries
Graça S. Carvalho¹, Claudia Ferreira¹, Artur Gonçalves¹, Rosa Branca Tracana¹,²
¹CIEC, University of Minho, Portugal; ²Polytechnic Institute of Guarda, Portugal
2.2 B Oral: Models and modeling

Time: Wednesday, 19/Sep/2012: 11:30am - 12:30pm

2.2 B Oral: 1
Students’ Conceptions of Models and Modelling
Ulrike Trier, Annette Upmeier zu Belzen
Humboldt-Universität zu Berlin, Germany

2.2 B Oral: 2
How 7th to 10th Graders Categorize Biological Models
Moritz Krell, Dirk Krüger
Freie Universität Berlin, Germany

3.1 A Oral: Environmental education

Time: Thursday, 20/Sep/2012: 9:00am - 10:30am

3.1 A Oral: 1
New Biology Curriculum: National Results of an Educational Intervention
Andreas Ch. Hadjichambis¹, Demetrios G. Mappouras¹, Constantinos C. Manoli², Bruce Johnson³
¹Cyprus Ministry of Education and Culture, Cyprus; ²University of Cyprus; ³University of Arizona

3.1 A Oral: 2
The place of higher education in promoting socio-environmental responsibility among future citizens and professionals
Tali Tal, Keren Kaplan
Technion, Israel

3.1 A Oral: 3
Group behavior and individual roles of undergraduate students during an Environmental Education course
Anthie Christodoulou, Maria Christodoulou, Demetra Paraskeva-Hadjichambi, Konstantinos Korfiatis
University of Cyprus, Cyprus

3.1 B Oral: Argumentation

Time: Thursday, 20/Sep/2012: 9:00am - 10:30am

3.1 B Oral: 1
Teaching scientific argumentation to pre-university students using primary literature
Marcel Koeneman, Martin Goedhart, Miriam Ossevoort
University of Groningen, Netherlands, The

3.1 B Oral: 2
Students study background and supporting reasons in arguing socio-scientific issues
Nina Christenson, Shu-Nu Chang Rundgren
Karlstad University, Sweden

3.2 A Oral: Health education

Time: Thursday, 20/Sep/2012: 11:00am - 12:30pm

3.2 A Oral: 1
Conceptualizations of Health and Welfare among Elementary School Students in the Negev’s Bedouin Arab Community
Orit Ben Zvi Assaraf, Wisam Sedawi, Julie G. Cwikel
Ben-Gurion University of the Negev, Israel, Israel

3.2 A Oral: 2
Health as a crossroad of Socio-scientific Issues and Critical reading
Ana Maria Doménech Calvet, Conxita Márquez Bargalló, Montserrat Roca Tort
Universitat Autònoma de Barcelona, Spain

3.2 A Oral: 3
Discovering environment and sustainability with mobile devices – concepts and potentials
Sebastian Bleck, Marcel Bullinger, Armin Lude, Steffen Schaal
Ludwigsburg University of Education, Germany
3.2 B Oral: Biology education and Publication in international journals

Time: Thursday, 20/Sep/2012: 11:00am - 12:30pm

3.2 B Oral: 1
Chance and Determinism in Evolution: Teachers' Conceptions in 21 Countries
Pierre Clément
University Lyon 1, France

3.3 A Poster: Session II

Time: Thursday, 20/Sep/2012: 2:00pm - 4:00pm

3.3 A Poster: 1
Visualization of insects in the early years
Amauri Betini Bartoszeck¹, Sue Dale Tunnicliffe²
¹University of Paraná, Brazil; ²University of London, UK

3.3 A Poster: 2
Support for and barriers to animal welfare education
michel vidal¹, laurence simonneaux²
¹Sup Agro Montpellier, France; ²ENFA Toulouse, France

3.3 A Poster: 3
Rivers: something more than just streams of water that arise in the mountains and flow into the sea.
Maria José Gil_Quílez, Begoña Martínez_Peña
University of Zaragoza, Spain

3.3 A Poster: 4
ASSESSING THE DEVELOPMENT OF STUDENTS' ECOLOGICAL CONCEPTUAL UNDERSTANDING
Majken Korsager
University of Oslo, Norway

3.3 A Poster: 5
Learning the energy concept in biological contexts at primary level
Sebastian Opitz, Knut Neumann, Ute Harms
IPN Kiel, Germany

3.3 A Poster: 6
Development and optimization of a testing instrument for recording the Nature of Science (NOS) views of students
Johannes Koska, Dirk Krüger
FU Berlin, Germany

3.3 A Poster: 7
Cell, organ, organism – only a structural hierarchy?
Michaela Lütze, Jörg Zabel
Universität Leipzig, Germany

3.3 A Poster: 8
Learners' conceptions about plant physiology - An intervention study with students
Bettina Walter, Marcus Schrenk
University of Education Ludwigsburg/ Pädagogische Hochschule Ludwigsburg, Germany

3.3 A Poster: 9
Conditions of students’ motivation to learn plant physiology in a virtual environment
Beata Barbara Jancarz-Lanczkowska, Katarzyna Ewa Potyrała
Pedagogical University of Cracow, Institute of Biology, Poland

3.3 A Poster: 10
MOTIVATION TOWARD MASTERY FOR GIFTED STUDENTS IN SOCIO-SCIENTIFIC ISSUES
Bård Knutsen
The Norwegian University of Science and Technology, Norway

3.3 A Poster: 11
Student's Conceptions of Plant Nutrition – an Intervention Study at Primary School
Marcus Schrenk, Anja Vocilka
PH Ludwigsburg, Germany

3.3 A Poster: 12
When students and teachers deal with the classification of animals
Denise ORANGE RAVACHOL
Université de Nantes, France
3.3 B Poster: Session II
Time: Thursday, 20/Sep/2012: 2:00pm - 4:00pm

3.3 B Poster: 1
Teacher Trainees' Trials and Tribulations with IBSE
Philipp Krämer, Stefan Nessler, Kirsten Schlüter
University of Cologne, Germany

3.3 B Poster: 2
Students' interest in plants: Development of a teaching unit
Sara Neumann
Universität Leipzig, Germany

3.3 B Poster: 3
Biotechnology in the Greek secondary biology books
MARIANNA KALAITZIDAKI
UNIVERSITY OF CRETE, Greece

3.3 B Poster: 4
From genes to traits without molecules; genetics in prevocational education.
Horst Wolter
Freudenthal Institute for science and mathematics education, Utrecht University, Netherlands, The

3.3 B Poster: 5
Analysis of the concept of biodiversity present in textbooks
Camila Sanches Miani\textsuperscript{1}, Fernanda da Rocha Brando\textsuperscript{2}, Ana Maria de Andrade Caldeira\textsuperscript{1}
\textsuperscript{1}Universidade Estadual Paulista/UNESP, Brazil; \textsuperscript{2}Universidade de São Paulo/USP, Brazil

3.3 B Poster: 6
Utilization and impact of conservation messages in informal learning settings
Julia Kögler, Hauke Hellig, Stefan Hartmann
Humboldt-Universität zu Berlin, Germany

3.3 B Poster: 7
Students' motivation to engage in student-scientist-partnerships
Christine Heidinger, Martina Höll, Franz Radits, Martin Scheuch
University of Vienna, Austria

3.3 B Poster: 8
Exploring children's views of what's inside their bodies
Johanna Andersson, Lena Tibell, Ragnhild Löfgren
Linköping University, Sweden

3.3 B Poster: 9
Learning trajectories about the Nature of Science in Student-Scientist partnerships
Manfred Bardy-Durchhalter, Franz Radits
Universität Wien, Austria

3.3 B Poster: 10
Assessing Pre-service Teachers' Professional Knowledge in Biology: The Project KiL
Jörg Großschedi, Ingrid Glowinski
Leibniz Institute for Science and Mathematics Education IPN, Germany

3.3 C Poster: Session II
Time: Thursday, 20/Sep/2012: 2:00pm - 4:00pm

3.3 C Poster: 1
Reframing classroom discourses on genetic testing from an STS perspective
Dirk Jan Boerwinkel\textsuperscript{1}, Arend Jan Waarlo\textsuperscript{2}, Tsjalling Swierstra\textsuperscript{3}
\textsuperscript{1}Freudenthal Institute for Science and Mathematics Education, Netherlands, The; \textsuperscript{2}Freudenthal Institute for Science and Mathematics Education, Netherlands, The; \textsuperscript{3}Dept. of Philosophy, Maastricht University, Netherlands

3.3 C Poster: 2
Development of Critiquing Practices in Inquiry-Oriented Programs in Biology
Tom Bielik, Anat Yarden
Weizmann Institute of Science, Israel

3.3 C Poster: 3
High-school teachers’ appropriation of an innovative curriculum in bioinformatics
Yossy Machluf, Hadas Gelbart, Anat Yarden
Weizmann Institute of Science, Israel
Peers’ discursive activity about predation in a computer-supported learning environment

Marida Ergazaki, Vassiliki Zogza
University of Patras, Greece

Mapping controversies about the use of pesticides and agronomy teaching.

Nadia Cancian
ENFA UMR EFTS, France

THE DIFFICULTIES PROSPECTIVE BIOLOGY TEACHERS FACE DURING THE RUBRIC DEVELOPMENT

Perihan Güneş¹, Ali Alaş²
¹Aksaray University, Turkey; ²Necmettin Erbakan University, Turkey

The measurement of constructivist instruction based on student perceptions

Sabine Marsch¹, Matthias Wilde², Detlef Urhahne³
¹Freie Universität Berlin, Germany; ²Universität Bielefeld, Germany; ³Universität Halle-Wittenberg, Germany

Determination and fostering of students’ model competence using hands-on tasks

Juliane Hänsch, Annette Upmeier zu Belzen
Humboldt-Universität zu Berlin, Germany

Processes of Scientific Inquiry in Theory and Practice

Kathrin Helena Nowak, Andreas Nehring, Rüdiger Tiemann
Humboldt-Universität zu Berlin, Germany

Sharing experiences of two LearningLABs on bioinformatics for European teachers.

Louisa Wood¹, Philipp Gebhardt²
¹EMBL-European Bioinformatics Institute, United Kingdom; ²European Learning Laboratory for the Life Sciences, European Molecular Biology Laboratory, Germany

The potential of biology textbooks to integrate molecular genetic knowledge

Chantal de Ruijter, Dirk-Jan Boerwinkel
Freudenthal Institute for Science and Mathematics Education, Utrecht University, Netherlands, The

Conceptual Reconstruction and Role of Metaphors in Understanding Germ Theory

Barnd Unger
Leibniz Universität Hannover, Germany

Comparative analysis of the activity of two teachers in terms of students’ acculturation to science

Yann Lhoste¹, Patricia Schneeberger², Brigitte Peterfalvi³
¹Université de Bordeaux, France (LACÉS, EA 4140); ²Université de Bordeaux, France (LACÉS, ÉA 4140); ³Université de Nantes, France (CREN, EA 2661)

3.4 A Symposium: Teaching evolution: cognitive and affective factors

Time: Thursday, 20/Sep/2012: 4:30pm - 6:30pm

Teaching evolution: cognitive and affective factors

Marcus Hammann¹, Christiane Konnemann¹, Clas Olander², Penelope Papadopoulou³
¹Zentrum für Didaktik der Biologie, WWU Münster, Germany; ²Institutionen för didaktik och pedagogisk profession, Göteborg, Sweden; ³University of Western Macedonia, Greece

Why am I learning biological evolution?

Clas Ludvig Olander
University of Gothenburg, Sweden

Conceptual ecology of the Evolutionary Theory in the Greek cultural frame: Students’ conceptual ecologies before and after teaching.

Penelope Papadopoulou¹, Efstratios Katakos², Kyriacos Athanasiou²
¹UNIVERSITY OF WESTERN MACEDONIA, Greece; ²UNIVERSITY OF ATHENS, Greece
3.4 A Symposium: 4
Attitudes towards evolutionary theory: A multidimensional approach
Christiane Konnemann, Roman Asshoff, Marcus Hammann
Centre for Didactics of Biology, University of Münster, Germany

3.4 A Symposium: 5
Acceptance of evolutionary theory: Do problem concepts and different aspects of evolution make a difference?
Marcus Hammann, Christiane Konnemann, Roman Asshoff
Zentrum für Didaktik der Biologie, WWU Münster, Germany

3.4 B Oral: Pedagogical content knowledge
Time: Thursday, 20/Sep/2012: 4:30pm - 6:30pm

3.4 B Oral: 1
Evaluation and validation of test instruments to measure biology teachers’ PCK&CK
Melanie Juettner, Birgit Jana Neuhaus
University of Munich (LMU), Germany

3.4 B Oral: 2
Characterizing tacit PCK of in-service biology teachers
Ronit Rozenszajn, Anat Yarden
Weizmann institute of science, Israel

3.4 B Oral: 3
Teachers’ PCK development during a professional development course in ecology
Martin Scheuch, Christine Heidinger, Erika Keller, Franz Radits
University of Vienna, Austria

3.4 B Oral: 4
Biology teachers learning to design context-based lessons
Nienke Wieringo, Fred Janssen, Els De Hullu, Jan Van Driel
Leiden University, Netherlands, The

4.1 A Oral: Teaching strategies
Time: Friday, 21/Sep/2012: 9:00am - 10:30am

4.1 A Oral: 1
Teachers’ objectives and knowledge focus in outdoor teaching, grade 4-6
Birgitta Wilhelmsson¹, Christina Ottander¹, Gun Lidestav²
¹Umeå university, Sweden; ²Swedish University of Agricultural Sciences

4.1 A Oral: 2
From matter cycle to ecosystem: a learning progression proposal
Eva Novella¹, Anna Marbá-Tallada²
¹Universitat Autònoma de Barcelona. Grup de Recerca Consolidat LIEC. Catalunya.; ²Escola Aula, Barcelona, Catalunya

4.1 A Oral: 3
The connection between secondary school students’ internal factors, school experiences and sustainability actions
Anna Uitto, Seppo Saloranta
University of Helsinki, Finland

4.1 B Oral: Teaching genetics
Time: Friday, 21/Sep/2012: 9:00am - 10:30am

4.1 B Oral: 1
Instructional efficiency of tutoring hands-on phases in an outreach lab
Franz-Josef Scharfenberg, Franz X. Bogner
University of Bayreuth, Germany

4.1 B Oral: 2
Teachers talk in the classroom: connecting genes with traits
Karin Helena Thörne, Niklas Gericke, Mariana Hagberg
Karlstad University, Sweden

4.1 B Oral: 3
Training teachers to use bioinformatics resources in developing student assignments
Hienke Sminia
Netherlands Bioinformatics Centre, Netherlands, The
4.2 A Oral: Interest and motivation
Time: Friday, 21/Sep/2012: 11:00am - 12:30pm

4.2 A Oral: 1
First-Year Students' Priorities and Choices Related to Science and Technology Education
Doris Elster, Verena Mauk
University Bremen, Germany

4.2 A Oral: 2
Interest development in biology through learning progression
Morten Rask Petersen
University of Southern Denmark, Denmark

4.2 A Oral: 3
Bilingual Biology teaching: students' attitude depending on motivation and achievement
Petra Duske, Julia Drixler, Michael Ewig
Pädagogische Hochschule Weingarten, Germany

4.2 B Oral: Teaching strategies
Time: Friday, 21/Sep/2012: 11:00am - 12:30pm

4.2 B Oral: 1
From lectures to small-group learning in an undergraduate Biology Course
Masha Tsauish, Tali Tal
Technion, Israel

4.2 B Oral: 2
Science standards and individualised teaching – A contradiction?
Iris Venus-Wagner
University of Salzburg, Austria

4.2 B Oral: 3
Good student questions in inquiry learning?
François E. Lombard, Daniel K. Schneider
Université de Genève, Switzerland