

# Presentations

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## 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 Wollenschläger<sup>1</sup>, Jens Möller<sup>2</sup>, Ute Harms<sup>1</sup>

<sup>1</sup>IPN –Leibniz Institute for Science and Mathematics Education, Germany; <sup>2</sup>Department 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 Dove<sup>1</sup>, Jenny Byrne<sup>2</sup>

<sup>1</sup>Isle of Wight Zoo, United Kingdom; <sup>2</sup>University of Southampton

### 1.1 B Oral: 2

#### **Learning at the museum: motivational aspects of guided tours**

Jennifer Härting<sup>1</sup>, Andrea Möller<sup>2</sup>, Norbert Pütz<sup>1</sup>

<sup>1</sup>University of Vechta - Biology and Didactic, Germany; <sup>2</sup>University of Trier - Biology and Didactic, Germany

### 1.1 B Oral: 3

#### **Beginning biology – interest and inquiry in the early years**

Annette Scheersoi<sup>1</sup>, Sue Dale Tunnicliffe<sup>2</sup>

<sup>1</sup>Goethe University Frankfurt, Germany; <sup>2</sup>Institute 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 Ummels<sup>1</sup>, Marcel Kamp<sup>1</sup>, Hans de Kroon<sup>1</sup>, Kerst Boersma<sup>2</sup>

<sup>1</sup>Radboud University, Netherlands, The; <sup>2</sup>University of Utrecht, Netherlands, The

### 1.2 A Poster: 3

#### **A pattern that connects (some) students' explanations for species evolution**

Jörg Zabel<sup>1</sup>, Harald Gropengießer<sup>2</sup>

<sup>1</sup>Universität Leipzig, Institute for Biology, Germany; <sup>2</sup>Institute 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 Tracana<sup>1</sup>, Sara Viveiros<sup>2</sup>, Graça S. Carvalho<sup>3</sup>**

<sup>1</sup>Polytechnic Institute of Guarda, Guarda, Portugal; <sup>2</sup>CIEC, Institute of Education, University of Minho, Braga, Portugal; <sup>3</sup>CIEC, 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 Yilmaz<sup>1</sup>, Hikmet Katircioğlu<sup>2</sup>**

<sup>1</sup>Hacettepe University, Faculty of Education, Department of Science and Mathematics Fields in Secondary Education, Turkey;

<sup>2</sup>Gazi 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 Rundgren<sup>1</sup>, Carl-Johan Rundgren<sup>2</sup>**

<sup>1</sup>Karlstad University, Sweden; <sup>2</sup>Stockholm University, Sweden

1.2 B Poster: 3

**Embodied metaphors and analogies as imaginative thinking tools**

**Kai Niebert<sup>1</sup>, Treagust David<sup>2</sup>**

<sup>1</sup>Leibniz Universität Hannover; <sup>2</sup>Curtin University of Technology, Australia

1.2 B Poster: 4

**Metacognitive knowledge as a predictor for communication competence in science**

**Kathrin Klöpfel, 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 Acher<sup>1</sup>, Lisa Kenyon<sup>2</sup>**

<sup>1</sup>Martin-Luther-Universität Halle-Wittenberg, Germany; <sup>2</sup>Wright State University, USA

1.2 B Poster: 7

**Students' perspectives on leaves - Challenges in the tree identification processes**

Svenja Affeldt, Dennis Stahl, Jorge Groß  
Leibniz University of Hannover, Germany

1.2 B Poster: 8

**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

1.2 B Poster: 9

**Teeth are not like Teeth: Students' Conceptions when Identifying Clams**

Dennis Stahl, Svenja Affeldt, Jorge Groß  
Leibniz University Hannover, Germany

1.2 B Poster: 10

**Students' conceptions about sexuality and ways to clear their doubts**

Zélia Ferreira Anastácio, Ana Luísa Alves  
University of Minho, Portugal

1.2 B Poster: 11

**Context-contingent influences on the competency of evaluation and judgment**

Melanie Werner, Julia Schwanewedel, Jürgen Mayer  
Universität Kassel, Germany

1.2 B Poster: 12

**The Hidden Hand That Shapes Conceptual Understanding**

Harald Gropengiesser, Kai Niebert, Tanja Riemeier  
Leibniz Universität Hannover, Germany

## 1.2 C Poster: Session I

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

1.2 C Poster: 1

**Learning Study in upper secondary school: What is the relationship between genome and individual characteristics?**

Mona Holmqvist Olander<sup>1</sup>, Clas Olander<sup>1</sup>, Kerstin Gross<sup>2</sup>, Elsa Fagerjord<sup>2</sup>  
<sup>1</sup>University of Gothenburg, Sweden; <sup>2</sup>Bäckäng Upper Secondary School, Borås, Sweden

1.2 C Poster: 2

**Observation competency training in guided play activities**

Lucia Kohlhauf, Ulrike Rutke, Birgit Neuhaus  
Ludwig-Maximilians-University Munich, Germany

1.2 C Poster: 3

**The application of concept maps in teaching invertebrate zoology**

Jelena D. Stanisavljević, Ljubiša Ž. Stanisavljević  
University of Belgrade - Faculty of Biology, Serbia

1.2 C Poster: 4

**The didactical implications of biology teachers' understanding of research as praxis**

William John Fraser<sup>1</sup>, Annemarie Hattingh<sup>2</sup>, Erna Du Toit<sup>3</sup>, Mia Abrie<sup>1</sup>, Johannes Slabbert<sup>1</sup>, Jan Nieuwenhuis<sup>1</sup>, Lindelani Mnguni<sup>1</sup>, Estelle Gaigher<sup>1</sup>, Elize Randall<sup>1</sup>  
<sup>1</sup>University of Pretoria, South Africa; <sup>2</sup>University of Cape Town; <sup>3</sup>University of the Free State

1.2 C Poster: 5

**Analyzing students' argumentations in reasoning about processes of adaptation**

Nicolai Basel<sup>1</sup>, Helmut Precht<sup>2</sup>, Ute Harms<sup>1</sup>  
<sup>1</sup>IPN-Leibniz-Institute for Science and Mathematics Education, Germany; <sup>2</sup>University of Potsdam - Institute of Biology Education

1.2 C Poster: 6

**Natures of Science: A Case Study of Biodiversity Conservation**

Esther M. van Dijk  
University of Hildesheim, Germany

1.2 C Poster: 7

**LEARNING BIOLOGY BY LIVING IT - regulation of tenseness**

Heléne Bergentoft, Mona Holmqvist  
University of Gothenborg, Sweden

1.2 C Poster: 8

### **INCLUSIVE SCIENCE: TEACHERS' ATTITUDES AND PRACTICES**

**António Costa**<sup>2,3</sup>, **Maria Eduarda Ferreira**<sup>1,3</sup>, **Carlos Sousa Reis**<sup>1,3</sup>, **José Miguel Salgado**<sup>1,3</sup>

<sup>1</sup>Instituto Politécnico da Guarda, Portugal; <sup>2</sup>Unidade de Investigação para o Desenvolvimento do Interior; <sup>3</sup>UDI – 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 Lammers**<sup>1</sup>, **Ronald Keijzer**<sup>1</sup>, **Marja van Graft**<sup>2</sup>

<sup>1</sup>Freudenthal Institute for Science and Mathematics Education, Utrecht University, The Netherlands; <sup>2</sup>Netherlands 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 Wierdsma**<sup>1,3</sup>, **Marie-Christine Knippels**<sup>1</sup>, **Bert van Oers**<sup>2</sup>, **Kerst Boersma**<sup>1</sup>

<sup>1</sup>Freudenthal Institute for Science and Mathematics Education, Utrecht University, Netherlands, The; <sup>2</sup>Department of Theory and Research in Education, VU University Amsterdam, Netherlands, The; <sup>3</sup>Department 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 Eckhardt**<sup>1</sup>, **Detlef Urhahne**<sup>2</sup>, **Olaf Conrad**<sup>3</sup>

<sup>1</sup>Leibniz Institute for Science and Mathematics Education (IPN), Germany; <sup>2</sup>Martin-Luther-University, Germany; <sup>3</sup>University 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 Molinatti**<sup>1</sup>, **Laurence Simonneaux**<sup>2</sup>

<sup>1</sup>Université des sciences de Montpellier - IUFM, France; <sup>2</sup>Ecole 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**

**Beverly France**<sup>1</sup>, **Sally Birdsall**<sup>1</sup>, **Ralph Levinson**<sup>2</sup>, **Olivier Morin**<sup>4</sup>, **Laurence Simonneaux**<sup>3</sup>, **Jean Simonneaux**<sup>3</sup>

<sup>1</sup>The University of Auckland, New Zealand; <sup>2</sup>University of London; <sup>3</sup>Ecole Nationale de Formation Agronomique de Toulouse, France; <sup>4</sup>Lyon 1 (Université Claude Bernard)

### 2.1 A Symposium: 2

#### **Digital technology to support student's Socio-Scientific Reasoning about Environmental Issues**

**Olivier MORIN**<sup>2</sup>, **Laurence SIMONNEAUX**<sup>1</sup>, **Jean SIMONNEAUX**<sup>1</sup>

<sup>1</sup>Université Toulouse 2 le Mirail, France; <sup>2</sup>Université 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**

**Beverly 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 Mil**<sup>1,2,3</sup>, **Paulien A. Postma**<sup>1</sup>, **Dirk Jan Boerwinkel**<sup>1,2,3</sup>, **Arend Jan Waarlo**<sup>1,3</sup>

<sup>1</sup>Utrecht University, Netherlands, The; <sup>2</sup>Cancer Genomics Centre; <sup>3</sup>CSG Centre for Society and the Life Sciences

### 2.1 B Oral: 2

#### **The interpretation of students' Lamarckian explanations**

**Kerst Thomas Boersma**<sup>1</sup>, **Caspar Geraedts**<sup>2</sup>

<sup>1</sup>Freudenthal Institute for Science and Mathematics Education, Netherlands, The; <sup>2</sup>De Praktijk, Amsterdam, Netherlands, The

### 2.1 B Oral: 3

#### **The Role of Conceptions and Metaphors in Students' Understanding of Seeing**

**Sarah Dannemann**<sup>1</sup>, **Dirk Krüger**<sup>2</sup>

<sup>1</sup>Leibniz University Hannover, Germany; <sup>2</sup>Freie 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 João Fonseca**<sup>1,2,3</sup>, **Patrício Costa**<sup>4</sup>, **Leonor Lencastre**<sup>4</sup>, **Fernando Tavares**<sup>1,3</sup>

<sup>1</sup>Faculdade de Ciências, Departamento de Biologia, Universidade do Porto, Portugal; <sup>2</sup>IBMC - Instituto de Biologia Molecular e Celular, Universidade do Porto, Portugal; <sup>3</sup>CIBIO - Centro de Investigação em Biodiversidade e Recursos Genéticos, Universidade do Porto, Portugal; <sup>4</sup>Faculdade 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**

**Grça S. Carvalho**<sup>1</sup>, **Claudia Ferreira**<sup>1</sup>, **Artur Gonçalves**<sup>1</sup>, **Rosa Branca Tracana**<sup>1,2</sup>

<sup>1</sup>CIEC, University of Minho, Portugal; <sup>2</sup>Polytechnic 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. Hadjichambis<sup>1</sup>, Demetrios G. Mappouras<sup>1</sup>, Constantinos C. Manoli<sup>2</sup>, Bruce Johnson<sup>3</sup>  
<sup>1</sup>Cyprus Ministry of Education and Culture, Cyprus; <sup>2</sup>University of Cyprus; <sup>3</sup>University 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 Domènech 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 Bartoszeck<sup>1</sup>, Sue Dale Tunnicliffe<sup>2</sup>

<sup>1</sup>University of Paraná, Brazil; <sup>2</sup>University of London, UK

### 3.3 A Poster: 2

#### **Support for and barriers to animal welfare education**

michel vidal<sup>1</sup>, laurence simonneaux<sup>2</sup>

<sup>1</sup>Sup Agro Montpellier, France; <sup>2</sup>ENFA 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 Lutze, 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-Łanczkowska, Katarzyna Ewa Potyrala

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<sup>1</sup>, Fernanda da Rocha Brandão<sup>2</sup>, Ana Maria de Andrade Caldeira<sup>1</sup>**

<sup>1</sup>Universidade Estadual Paulista/ UNESP, Brazil; <sup>2</sup>Universidade de São Paulo/ USP, Brazil

3.3 B Poster: 6

#### **Utilization and impact of conservation messages in informal learning settings**

**Julia Kögler, Hauke Hellwig, 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 Großschedl, 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<sup>1</sup>, Arend Jan Waarlo<sup>2</sup>, Tsjalling Swierstra<sup>3</sup>**

<sup>1</sup>Freudenthal Institute for Science and Mathematics Education, Netherlands, The; <sup>2</sup>Freudenthal Institute for Science and Mathematics Education, Netherlands, The; <sup>3</sup>Dpt. 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

3.3 C Poster: 4

**Peers' discursive activity about predation in a computer-supported learning environment**

Marida Ergazaki, Vassiliki Zogza  
University of Patras, Greece

3.3 C Poster: 5

**Mapping controversies about the use of pesticides and agronomy teaching.**

Nadia Cancian  
ENFA UMR EFTS, France

3.3 C Poster: 6

**THE DIFFICULTIES PROSPECTIVE BIOLOGY TEACHERS FACE DURING THE RUBRIC DEVELOPMENT**

Perihan Güneş<sup>1</sup>, Ali Alas<sup>2</sup>  
<sup>1</sup>Aksaray University, Turkey; <sup>2</sup>Necmettin Erbakan University, Turkey

3.3 C Poster: 7

**The measurement of constructivist instruction based on student perceptions**

Sabine Marsch<sup>1</sup>, Matthias Wilde<sup>2</sup>, Detlef Urhahne<sup>3</sup>  
<sup>1</sup>Freie Universität Berlin, Germany; <sup>2</sup>Universität Bielefeld, Germany; <sup>3</sup>Universität Halle-Wittenberg, Germany

3.3 C Poster: 8

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

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

3.3 C Poster: 9

**Processes of Scientific Inquiry in Theory and Practice**

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

3.3 C Poster: 10

**Sharing experiences of two LearningLABs on bioinformatics for European teachers.**

Louisa Wood<sup>1</sup>, Philipp Gebhardt<sup>2</sup>  
<sup>1</sup>EMBL-European Bioinformatics Institute, United Kingdom; <sup>2</sup>European Learning Laboratory for the Life Sciences, European Molecular Biology Laboratory, Germany

3.3 C Poster: 11

**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

3.3 C Poster: 12

**Conceptual Reconstruction and Role of Metaphors in Understanding Germ Theory**

Barnd Unger  
Leibniz Universität Hannover, Germany

3.3 C Poster: 13

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

Yann Lhoste<sup>1</sup>, Patricia Schneeberger<sup>2</sup>, Brigitte Peterfalvi<sup>3</sup>  
<sup>1</sup>Université de Bordeaux, France (LACÉS, ÉA 4140); <sup>2</sup>Université de Bordeaux, France (LACÉS, ÉA 4140); <sup>3</sup>Université de Nantes, France (CREN, ÉA 2661)

## 3.4 A Symposium: Teaching evolution: cognitive and affective factors

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

3.4 A Symposium: 1

**Teaching evolution: cognitive and affective factors**

Marcus Hammann<sup>1</sup>, Christiane Konnemann<sup>1</sup>, Clas Olander<sup>2</sup>, Penelope Papadopoulou<sup>3</sup>  
<sup>1</sup>Zentrum für Didaktik der Biologie, WWU Münster, Germany; <sup>2</sup>Institutionen för didaktik och pedagogisk profession, Göteborg, Sweden; <sup>3</sup>University of Western Macedonia, Greece

3.4 A Symposium: 2

**Why am I learning biological evolution?**

Clas Ludvig Olander  
University of Gothenburg, Sweden

3.4 A Symposium: 3

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

PENELOPE PAPADOPOULOU<sup>1</sup>, EFSTRATIOS KATAKOS<sup>2</sup>, KYRIACOS ATHANASIOU<sup>2</sup>  
<sup>1</sup>UNIVERSITY OF WESTERN MACEDONIA, Greece; <sup>2</sup>UNIVERSITY 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 testinstruments 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 Wieringa, 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 Wilhelmsson<sup>1</sup>, Christina Ottander<sup>1</sup>, Gun Lidestav<sup>2</sup>**  
<sup>1</sup>Umeå university, Sweden; <sup>2</sup>Swedish University of Agricultural Sciences

#### 4.1 A Oral: 2

##### **From matter cycle to ecosystem: a learning progression proposal**

**Eva Novella<sup>2</sup>, Anna Marbà-Tallada<sup>1</sup>**  
<sup>1</sup>Universitat Autònoma de Barcelona. Grup de Recerca Consolidat LIEC. Catalunya.; <sup>2</sup>Escola 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 Tsaushu, 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