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<th>Date</th>
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<tbody>
<tr>
<td>Monday 11 Sept 06</td>
<td>All morning sessions are single-strand.</td>
<td>14.30 Onwards - Registration Level 9</td>
<td>18.30 Welcome Reception and Buffet - Jeffery Hall</td>
</tr>
<tr>
<td>Tuesday 12 Sept 06</td>
<td>9:00 - Opening remarks - Michael Reiss - Jeffery Hall</td>
<td>14:00 - 15:00 Poster Session Ia (10) Room 901</td>
<td>19:30 Boat Trip</td>
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<td></td>
<td>9:05 - 9.25 Keynote Address - Fotis Kafatos, Imperial College London</td>
<td>Strand 4 Student reasoning, scientific thinking and argumentation</td>
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<tr>
<td></td>
<td>Teaching and research in Biology in an era of unification</td>
<td>Teixeira, Francimar Martins</td>
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<td>9:30 - 11:00 - Paper Session I</td>
<td>Argumentation in Science Class for Brazilian Children: A Case Study</td>
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<td>Jeffery Hall</td>
<td>Grady Venville and Jenny Donovan</td>
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<td>Strand 4 Student reasoning, scientific thinking and argumentation</td>
<td>How Students from Year 2 to Year 12 Use a Model for Abstract Concepts in Genetics</td>
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<td>John K Gilbert, Bev France</td>
<td>Martin Braund, Fred Lubben, Zena Scholtz, Melanie Sadeck &amp; Merle Hodges</td>
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<td>A model for communication about biotechnology</td>
<td>Developing argumentation in grade 10 biology lessons in South Africa: implications for teachers’ professional development</td>
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<td>Vaille Dawson</td>
<td>Riemeier, Tanja</td>
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<td>Argumentation about biotechnology with Western Australian high school students</td>
<td>Students’ argumentation and conceptual development on blood circulation</td>
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<td>Marida Ergazaki &amp; Vassiliki Zogza</td>
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<td>Exploring options for increasing the equilibrium size of a fish population in a lake: Peers’ discursive activity towards the concept of carrying capacity within a computer-supported learning environment</td>
<td>Development of a module of the process of interpretation of arrow Symbolism in biology diagrams</td>
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<td>11:00 -11:30 Coffee Break</td>
<td>Meisert, Anke</td>
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<td>11:30 -13:00 Paper Session II</td>
<td>Working with models and its effects on students’ conception on models’ epistemology</td>
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<td>Jeffery Hall</td>
<td>Konrad J Schönborn, &amp; Trevor R Anderson</td>
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<td>Strand 1 Student Conceptions and Conceptual Change</td>
<td>Measuring the factors influencing students’ interpretation of external representations in biochemistry: a qualitative approach,</td>
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<td>Kattmann, Ulrich</td>
<td>Mariana Guelero do Valle &amp; Marcelo Tadeu Motokane</td>
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<td>Learning Biology by means of anthropomorphic conceptions?</td>
<td>Argumentative structure in students’ written production</td>
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<td>Zabel, Jörg</td>
<td>Sabine Mogge, Helmut Vogt, Bernd Wollring</td>
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<td>Stories about evolution: The role of narrative in Understanding</td>
<td>Scientific Thinking – Modelling Processes of Primary Level Students Regarding Special Natural Science Problems</td>
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<td>Anita Wallin</td>
<td>Alame Adrianna Gomez Galindo and Neus Sanmartí Puig</td>
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<td>One year after teaching – How consistent are students in using the scientific theory of biological evolution by natural selection?</td>
<td>Process of transformation of everyday language into scientific language in primary school children</td>
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</table>
14:00 - 15:00 Poster Session Ib (10)
Room 903
Strand 1 Student Conceptions and Conceptual Change

Show-Yu Lin, Chih-Ming Tu, & Yeong-Jing Cheng
Genetic concept learning of 7th grade students assessed by Concept Diagnostic Inventory-Biology
Gericke, Niklas
Two aspects of learning difficulties in genetics,
Berg, Helene Breiteig
Experience of relevant knowledge and understanding in genetics when facing genetics related socio-scientific issues
Jorge Gross & Harald Gropengiesser
Uniqueness and Variation: The Unexpected Outcomes of Free-choice Learning,
Denise Azevedo & Edson Pereira da Silva
Pupils talk movies: analysis of discourses about evolution
Leonardo Gonzalez Galli & Elsa Meinardi
Obstacles in the learning of natural selection
Athanasiou Kyriacos, Papadopoulou Penelope & Sariggelis Michalis
Views on Evolution and natural selection expressed by high school and university students
Carolyn Boulter, Sue Dale Tunnicliffe, Professor Michael Reiss
Ponds as Natural Habitats: How children express their understandings and the relevance for teaching biology
Daniela Marchetti, Anna Perazzone, Laura Colucci-Gray, Giuseppe Barbiero, Ilenia Grandi, Elena Camino
The conceptual tool „boundary“ and its application to the different levels of biological hierarchical systems
Lucia Prinou, Lia Halkia, Constantine Skordoulis
How Primary School Teachers understand Adaptations and relevant Biological Concepts

Please remove posters by 16.00 today.

15:00 - 15:30 Afternoon Tea

15:30 - 17:00 Paper Session IIIa
Room 901
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<tr>
<td>Kostas Kampourakis, Vasso Zogza</td>
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<td>Students’ preconceptions about evolution: a study of explanatory coherence</td>
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<td>Patrícia Jelemenská, Ulrich Kattmann</td>
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<td>Understanding the units of nature: From reification to reflection. A contribution to Educational Reconstruction in the field of ecology</td>
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<th>Strand 3 Student Values, attitudes and decision-making</th>
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<tr>
<td>Birgit Neuhaus, Angela Sandmann &amp; Wen-Hua Chang</td>
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<td>Students’ attitude towards science and the nature of science – A comparison between Taiwanese and German students</td>
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<th>15:30 - 17:00 Paper Session IIIb Room 903</th>
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<td>Strand 7 Health Education and Biology Education</td>
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<tr>
<td>Zélia Anastacio, Graça S Carvalho and Pierre Clement</td>
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<td>Portuguese Primary School Teachers’ Conceptions and Obstacles to Teach Sex Education</td>
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<td>Papadopoulou Penelope, Kartsoglou Anna and Professor Athanasiou Kyriacos</td>
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<td>Biology and health education: Is reproductive biology a real chance for sex education?</td>
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<td>Gillian Kidman Biotechnology Education: Topics of interest to students an teachers</td>
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<th>17:00 - 18:00 Poster Session IIa Room 901</th>
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<td>Strand 1 Student Conceptions and Conceptual Change</td>
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<tr>
<td>Abolaji Mayowa Akinyele and Oyedele Job Segun</td>
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<tr>
<td>The Conservation Club Effect’: An impact Assessment of biodiversity conservation awareness in some selected Nigerian Secondary Schools Bandiera, Milena</td>
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<td>Science education versus science culture: some worrying indications from questionnaires for admission to university Biology courses of studies</td>
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<td>The development of the concept of skeletons in Brazilian students</td>
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<td>Changes of Epistemological Beliefs after a Teaching Unit with Student Experiments on Plant Germination and Growth</td>
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<td>Students’ conceptions about the origin and development of their own life – a study in the first year of the elementary school</td>
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<td>What about knowledge of names of animal and plant species among young students after 12 years in school? – an internet based study</td>
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<td>Cumulative learning by comparing concept-analogue phenomena</td>
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<td>Children’s ideas about plants as living beings and their ontogenetic and phylogenetic development</td>
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<td>17:00 - 18:00 Poster Session IIb Room 903</td>
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<td>Strand 5: Teaching: teaching strategies, teaching environments and educational technology</td>
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<td>Biologie im Kontext (bik) – BMBF program to promote students’ competencies in context-based biology education and to support teachers’ professional development</td>
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<td>Overview of the evaluation concept of the German project „Biologie im Kontext“ and preliminary results</td>
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<td>Teachers’ Voices in Learning Communities – First Results of the Qualitative Evaluation within the Project Biology in Context</td>
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<td>Development of a competency model to differentiate between various levels of biological knowledge</td>
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<td>Paper Session VIII</td>
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<td>Jeffery Hall</td>
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<td>Bev France,</td>
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<td>**Strand 1 Student</td>
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<td>Maike Ehmer &amp;</td>
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<td>Marcus Hammann</td>
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<td>15:00 Bookable Visits</td>
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**Jeffery Hall**

**Strand 5: Teaching: teaching strategies, teaching environments and educational technology**

David Slingsby & Michael J. Reiss
Assessing a new advanced level biology course for 16-19 year-olds
Julia Wadouh, Birgit Neuhaus & Angela Sandmann
Cumulative Learning and Inner Subject Linkage in Biology Education
Gustav Hellden, Constantine Aivazidis & Maria Lazaridou
The advantage of computer assisted instruction in environmental education at secondary level
narrative exploration of significant educational episodes influencing career choices in biotechnology
Ayelet Baram-Tsabari, Anat Yarden

Interest in biology: A developmental shift characterized using self-generated questions
Anja Schmitz, Claudia Nerdel

A Study of the Development of Interest and Knowledge among Students using the Project NaT-Working Meeresforschung (Oceanography) as Example

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<tr>
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<th>Authors</th>
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<tbody>
<tr>
<td>Longitudinal axis in junior-high schools: examining experienced teachers’ PCK</td>
<td>Downs, Colleen T</td>
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<td>Moving away from a lecture-mode to a tutorial-skills based mode: experiences of a 1st year Biology course on two campuses at the University of KwaZulu-Natal, South Africa</td>
<td>Donovan, Jenny and Vaille Dawson</td>
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<td>Factors influencing the use of information communication technology (ICT) by early career science teachers</td>
<td>Michael Ewig &amp; Karen Drews</td>
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<td>Time spent of reproducing, restructuring and transferring knowledge – a comparison of students instructed bilingually and in German only</td>
<td>Van Dijk, Esther M</td>
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<td>Learning about the nature of biology in secondary classes: Rationale and proposals</td>
<td>Sandie Bernard, Graça S Carvalho &amp; Pierre Clement</td>
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<td>The French teaching of human reproduction and sexuality in secondary schools since 1950</td>
<td>Carrió M, Albaina S, Andion, O Larramona, P Calafell, F Baños &amp; J-E Perez</td>
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<td>Assessment of the biology learning by PBL method in undergraduate students: comparison study between traditional method and PBL</td>
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14:00 - 15:30 Poster Session IVa Room 903
 Strand 5: Teaching: teaching strategies, teaching environments and educational technology

Constantine Aivazidis, Harvey Mellar & Ralph Levinson

An investigation into the use of identification keys in the training of biology students
Dorita Demetriou, Konstantinos Korfiatis, Michael Michael & Constantinos Constantinou

Evaluation of an e-curriculum for supporting field studies, an enhancing
classification skills and conceptual understanding in elementary education’s ecology
Hagit Yarden & Anat Yarden

Supporting learning biotechnological methods using interactive and task oriented animations
Korfiatis Konstantinos & Hovardas Tasos

Provoking conceptual change in an ecology university course, using interactive computer models
Ángel D López y Mota & Diana Patricia Rodríguez Pineda

Relationships between science and learning teachers’ conceptions with teaching: an exploratory study of biology in secondary schools
Anna Marba Tallada & Conxita Marquez Bargallo

Learning to read biology (and reading to learn biology)
Sonja M Mork, Øystein Sørborg and Wenche Erljen

Pedagogical use of ICT – the example of gene technology
Quílez, Marie José Gil

Ecology: what ecology?
Retzlaff-Fürst, Carolin

The influence of methods of scientific inquiry on the development of subjective value complexes among pupils of 10th grade – an intervention study
Schaal S, Bogner F X, Girwidz R. & Rubitzko T

Media Assisted Learning in Science Education: An interdisciplinary approach to hibernation
Lida Schoen, Declan Kennedy

Science across the world in teacher training
Sabine Waßenhoven & Dirk Krüger

Biology teachers’ metaphors of learning and teaching,
Alexandre de Sá Friere, Márcia Cristina Fernandes Xavier e Milton Ozório Moraes

A game in Genetics as a meaningful instrument for New Biology teaching
Colleen Aldous & Annemarie Hattingh

The effect of group work on fourth year genetic students’ problem-solving ability
Dempster, Edith

Subject matter knowledge for Biology student-teachers: how much and who should teach it?
Please remove posters by 16.00 today.

15:30 - 16:00 Afternoon Tea

16:00 - 17:00 Paper Session IXa
Room 901
Strand 3 Student Values, attitudes and decision-making

Christiana Th. Nicolaou, Kostantinos Korfiatis, Maria Evagorou, and Constantinos P Constantinou
The development of decision-making skills and environmental concern using interactive models
Jérémy Castera, Catherine Bruguiere, Pierre Clement Lirdhist
The genetic diseases in the French biology school textbooks (for 15-18 years old students): what kinds of genetic determinism?

16:00 - 17:00 Paper Session IXb
Room 903
Strand 1 Student Conceptions and Conceptual Change

Sue Dale Tunnicliffe & Michael J Reiss
Drawing breath: the use of drawings and interviews in a six-year longitudinal study of 5-11 year-olds’ understandings of what is inside themselves
Eva West
Pupils’ (Age 10-12) Conceptions of hearing before teaching

16:00 - 17:00 Workshop on CmapTools, Room 915

Mauri Ahlberg
CmapTools and NatureGate® as practical tools to monitor and promote biological learning and biology education and research on them

17:00 - 18:00 Poster Session IVa
Room 901
Strand 6/7 Environmental Education/Health Education, and Biology Education

Oskarsdottir, Gunnhildur
The development of children’s ideas about the body in the primary school classroom
Tuncer, Gave
**Education for Sustainability**

Tekkaya, Ceren

An Attempt for improving Environmental Education in Elementary teacher

Susanne Menzel (Will not be attending) & Susanne Bögeholz

Differences in the Perception of Biodiversity Loss and Stated Behaviour to Protect Biodiversity – A Survey with 11th-Grade-Students in Chile and Germany

Hauke Hellwig & Annette Upmeier zu Belzen

Teachers’ concepts in biology classes between environmental education and education for sustainable development

Kuracina, Daniel

Cluster analysis of primary schools pupils’ attitude to environmental reality

Rosa Branca Tracana, Maria Eduarda Ferreira & Graça S Carvalho

Environmental Education in Portuguese national programmes and textbooks: Analysis of the sub-topics Ecosystems and cycles Pollution Use of resources and Biodiversity

Constancio Aguirre Pérez; Antonio Simón Albaladejo; Fernando Salcedo Aguilar; Alfonso Salvador Moya; Santiago Prieto Villar; Matilde Molina Ruiz; Ana Mª Vázquez Moliní.

**Tobacco prevention at University: An experience with Teacher Training Students,**

Julia Schwanewedel & Corinna Hößle

Conceptions of health and disease in the context of genetics and genetic technologies

Lundström, Mats

Beliefs in science or pseudoscience in health issues

Cornelia Sander & Dirk Krüger

Rheumatic Patients’ Conceptions of their Disease – Contribution to the Improvement of Physician / Patient Communication

**17:00 - 18:00 Poster Session IVb**

**Room 903**

**Strand 2/3: Student Interest and motivation / Student values, attitudes and decision-making**

De Villiers, Rian

Animal dissection in biology education: attitudes, alternatives and implications
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<td>The aesthetic aspect of an outdoor scientific exhibition: a case study</td>
<td>Wanderley Carvalho; Maria Lúcia de Rezende</td>
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<td>Development and evaluation of a module for enhancing teacher students moral judgment competence</td>
<td>Hubertus Doetkotte &amp; Ute Harms</td>
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<td>Competence of moral judgement in Biology lessons. How do students judge problems of biomedical sciences</td>
<td>Reitschert, Katja</td>
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<td>Exploration of attitudes towards modern biotechnology of Dutch secondary school students</td>
<td>Tanja Klop, Sabine E. Severiens and Marie-Christine P J Knippels</td>
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<td>Strategies of forming students’ attitudes to new technologies during biology lessons</td>
<td>Katarzyna Potyrala &amp; Alicja Walosik</td>
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<td>Educational projects in forming students’ knowledge and attitudes</td>
<td>Claudia Wulff &amp; Armin Lude</td>
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<td>The influence of Religious values on attitudes towards animals</td>
<td>Scheersoi, Annette</td>
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<td>Learning motivation in a bilingual module on biodiversity</td>
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**Friday 15 Sept 06**

**9:00 - 11:00 Paper Session X**

**Jeffery Hall**

*Strand 8 Social, cultural and gender issues in Biology education*

Laurence Simonneaux, Jean Simonneaux
*Teachers’ roles in teaching about controversial socio-scientific issues*

Gregoire Molinatti
*Students meeting neuroscientists about socio scientific issues*

Ralph Levinson
*A model for teaching controversial issues associated with biomedicine and biotechnology*

Rachel Levy Santos, Sandra Escovedo Selles and Marcia Serra Ferreria
*Examining the ambiguities of the human race concept in Biology textbooks: tensions between knowledge and values expressed in the school knowledge*

**14:00 – 15:30 Paper Session XIIa**

**Room 901**

*Strand 5: Teaching: teaching strategies, teaching environments and educational technology*

Cornelia Sommer & Markus Lücken
*Elementary students’ system competency – description and promotion*

Simone Lachmayer & Boy Kramer
*Supporting learning of a complex topic in a multimedia learning environment with different note-taking formats*

William John Fraser, Mbulaheni Obert Maguvhe
*The teaching of life science in special schools to blind and visually impaired learners and its implications to inclusive education in outcomes-based learning environments*

**14:00 – 15:30 Paper Session XII**

**Room 903**

*Strand 9 Practical Work and Field Work in Biology Education*
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<td>Ingrid Glowinski</td>
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<td>15:30 - 16:00</td>
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