

IV INTERDISCIPLINARY SCIENTIFIC CONFERENCE
MATHEMATICAL TRANSGRESSIONS
Pedagogical University of Cracow
13 - 16 March, 2019
Cracow, Poland

ISCMT 2019 Program

Wednesday, 13th March 2019

8.30 – 9.00 Registration (*in front of Auditorium*)

9.00 – 9.15 Opening Ceremony (*Auditorium*)

9.15 – 10.15 **David Tall**, University of Warwick, UK

Complementing supportive and problematic aspects of mathematics to resolve transgressions in long-term sense making

10.15 – 10.45 Coffee break (Aula)

10.45 – 11.45 **Ingo Witzke**, University of Siegen, Germany

Epistemological Beliefs about Mathematics in Education

11.45 – 12.00 Moving break

12.00 – 13.00 **Zbigniew Semadeni**, University of Euroregional Economy, Józefów-Warsaw, Poland

Rhythms, gestures, subitizing and learning to count

13.00 – 14.30 Lunch break (Aula)

14.30 – 15.30 **Włodimir Mituszew**, Pedagogical University of Cracow, Poland

Higher education in computer epoch. How to teach biology, chemistry, economy, engineering, geography, informatics ... and mathematics?

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15.30 – 16.30 Session 1A: New technologies and mathematics

Felicitas Pielsticker, University of Siegen, Germany

Concept Building in Mathematics Classrooms using New Media: Theoretical Perspectives and Empirical Insights on the Example of 3D-Printing Technology

Sylwia Kania, University of Silesia, Katowice, Poland

Transgressions between "old" methods of problem solving and "new" students

16.30 – 16.45 Moving break

16.45 – 17.45 Session 1B: New technologies and mathematics

Katarzyna Wadoń-Kasprzak, Witold Pilecki University of Applied Sciences in Oświęcim, Poland

Forming the concept of parameter through the work with computer algebra software

Janina Duda, Witold Pilecki University of Applied Sciences in Oświęcim, Poland

Mathematical transgressions of gifted students inspired by using information technology

20.00 – 22.30 Conference Dinner (*Pistacja Restaurant, Karmelicka 7*)

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Thursday, 14th March 2019

9.00 – 10.00 Rina Zazkis, Simon Fraser University, Canada

On interplay between research, mathematics and pedagogy

10.00 – 10.30 Coffee break

10.30 – 12.00 Session 2: Mathematics teaching

Adedeji Tella, University of Ibadan, Nigeria

Use of self-regulated learning strategies by senior secondary school mathematics students

Mirosława Sajka, Pedagogical University of Cracow, Poland

The notion of function as a mathematical study of movement - an excerpt from eye-tracking research

Roberto Tortora, Università degli Studi di Napoli Federico II, Italy

Very often students' errors are all but mistakes

12.00 – 12.15 Moving break

12.15 – 13.45 Session 3: Mathematics teachers' education

Stanislav Lukáč, Tadeáš Gavala, Pavol Jozef Šafárik University in Košice, Slovakia

Development of pre-service mathematics teachers' competencies for inquiry-based teaching

Nelleke den Braber, NHL Stenden University of Applied Sciences, Netherlands

Jenneke Krüger, Freudenthal Institute, University of Utrecht, Netherlands

Gaining perspective: lessons from interviews with non-mathematics teachers by pre-service mathematics teachers

Basia Pieronkiewicz, Pedagogical University of Cracow, Poland

High-school mathematics textbooks as the potential source of pre-service teachers' images of a line tangent to a plane curve

13.45 – 15.00 Lunch break

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15.00 – 16.30 Session 4: History of mathematics

Janet Barnett, Colorado State University – Pueblo, USA

Transgressions in Nineteenth-century Mathematics: Meaningful Context for Today's Classroom

András Benedek, Research Centre for the Humanities, Hungarian Academy of Sciences, Hungary

On the Role of Model Theory in Understanding Mathematical Transgressions: Some examples from the history of continuity, computability and categoricity

Marlena Fila, Pedagogical University of Cracow, Poland

On continuity in Bolzano's 1817 Rein analytischer Beweis

16.30 – 17.00 Coffee break

17.00 – 18.30 Piotr Błaszczyk, Pedagogical University of Cracow, Poland

On Euler's formula. Between standard and non-standard analysis (workshop)

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Friday, 15th March 2019

9.00 – 10.00 Anna Sfar, University of Haifa, Israel

Discursive gaps in mathematics classroom: the invisible pitfalls of routines

10.00 – 10.30 Coffee break

10.30 – 13.00 Session 5: Communication and mathematics

Jorge Soto-Andrade, University of Chile, Chile

Daniela Diaz-Rojas, University of Oxford, UK

Alexandra Yañez-Aburto, University of Chile, Chile

Metaphorising and enacting as a means of transgression in the learning of mathematics

Gaya Jayakody, University of Sri Jayewardenepura, Sri Lanka

Realizations and commognitive conflicts in the discourse of ‘continuous functions’

Janet Barnett, Colorado State University – Pueblo, USA

Cihan Can, Florida State University, USA

Kathleen Clark, Florida State University, USA

Learning Mathematics from Primary Sources: Meta-Discursive Rules, Exogenous Growth and Transgressive Acts

Ioannis Vandoulakis, Hellenic Open University, Greece

Proof-Events as a Fundamental Methodological Concept Integrating History of Mathematics into Intercultural Mathematics Education

Karl Heuer, Technical University of Berlin, Germany

Deniz Sarikaya, Universität Hamburg, Germany

Variations in open problem fields as a tool for mathematical education: From basics to open questions in the twinkling of an eye

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14.30 – 15.30 Jakub Jernajczyk, Academy of Art and Design, Wrocław, Poland

Thinking in images – mathematical inspirations in contemporary conceptual art

15.30 – 15.45 Moving break

15.45 – 17.15 Session 6: Mathematics and Arts

Melissa Rodd, UCL Institute of Education, United Kingdom

Introducing mathematics through art, a case study: Maryam Mirzakhani's geometry for high school students

Agata Hoffmann, University of Wrocław, Poland

Zvi Hecker and his mathematical inspirations

Michaela Kaslová, Charles University, Czech Republic

Paola Vighi, Università di Parma, Italy

How young pupils perceive geometrical shapes and structure?

17.30 - 19.00 Farewell Meeting

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Saturday, 16th March 2019

9.00 – 10.00 Gerald Goldin, Rutgers University, USA

Beauty, Insight, Power, and Connection: The Conative Dimension of Mathematical Engagement

10.00 – 10.30 Coffee break

10.30 – 12.00 Session 7: Affect and mathematics

Bronislaw Czarnocha, Hostos CC, CUNY, NYC, USA

Gerald Goldin, Rutgers University, USA

Peter Liljedahl, Simon Fraser University, Canada

Illuminating Aha! Moment through the Analysis of Relationships between Affect, Cognition and Conation

Kathleen Clark, Florida State University, USA

Cihan Can, Florida State University, USA

Primary Source Projects as Transgressive Acts: Perspectives on Affective Experiences

Monika Szczygieł, Pedagogical University of Cracow, Poland

Math anxiety of mothers, fathers, and teachers explains math anxiety and mathematical performance of early school-age children

12.00 – 12.30 Closing ceremony

12.30 – 14.00 Lunch