

### September 1, 2019, Sunday Student Program

#### *How is it possible to invent such a solution - An Anatomy of Thought*

- 10:00 – 10:15 *The research initiative behind the Student Challenge*  
András G. Benedek, Research Center for the Humanities,  
Hungarian Academy of Sciences
- 10:15 – 11:30 *The “Anatomy of Thinking” in action: presentations, reflections and  
problem-solving practices*  
Prof. Agnes Tuska, California State University, Fresno
- 11:30 – 11:45 Coffee Break
- 11:45 – 12:30 **Keynote**  
*A mesterséges intelligencia hatása a gondolkodásra* – The effect of  
Artificial Intelligence on Thinking  
Prof. László Mérő, Eötvös Loránd University
- 12:30 – 13:00 Change of location: walk to the *Pólya-tree in the memorial tree  
park of the Tagore promenade*
- 13:00 – 13:30 **Commemoration** (néé-Kántor S. Tünde, Univ. of Debrecen)  
and **Announcement of Awards** of the “*Anatomy of Thought*”  
*Student Challenge* by István Bóka, Mayor of Balatonfüred

### September 1, 2019 Sunday Afternoon Programs *Vasváry Gallery*

- 14:00 – 15:30 *Games and Challenges for students and families*  
*Demonstrations using the games and exhibited tools*  
Demonstrators: Prof. Agnes Tuska CSU Fresno, Kristóf  
Huszár, IST Austria, Ildikó Szabó, Experience Workshop,  
Sándor Róka, talent developer, Gergely Bunth, Doctoral  
School of Math and Computer Science, BME
- 16:00 – 17:30 **Boat Tour on Lake Balaton** with Informal discussions  
*Plans for collaboration preparing the Proceedings of Heuristics*  
*Building a Network of Excellence for Heuristic Research*

### August 30, 2019, 09:45 - 12:30, Friday Morning Program

*Video Session and discussion of pre-recorded talks and demonstrations*

Location: *Vasváry Gallery*

- 09:45 – 10:00 *Opening Thoughts on Motivating, Orienting and Modeling Invention*  
András G. Benedek, organizer, Research Centre for the  
Humanities, Hungarian Academy of Sciences
- 10:00 – 10:15 *Problem-solving in a Dynamic Mathematics Environment*  
Erhan Selcuk Haciomeroglu, Temple University, Japan  
Campus
- 10:15 – 10:45 *Computer Assisted Heuristic Learning of Analysis*  
Katalin Munkácsy, Eötvös Loránd University – Eleonóra  
Stettner, Kaposvár University
- 10:45 – 11:00 Coffee break
- 11:00 – 11:25 *Creative Thinking Control: Lev Landa and his Algo-Heuristic Theory*  
Ekaterina Babintseva, University of Pennsylvania, USA
- 11:25 – 11:50 *The Moment of Discovery in Flow*  
Olga Kiss, Corvinus University, Budapest
- 11:50 – 12:15 *Multi-, and transdisciplinary approaches to learning mathematics  
through creative activities, arts and digital technology*  
Prof. Zsolt Lavicza, director, Johannes Kepler University,  
Science, Technology, Engineering and Mathematics  
Education Center, Linz; Kristóf Fenyvesi, Finnish Institute  
for Educational Research, University of Jyväskylä;  
Experience Workshop; Bridges Organization
- 12:15 – 12:30 Commentary by Eleonóra Stettner, Kaposvár University
- 12:30 – 13:30 Informal discussion with the participants  
(No host pizza and salad bar, Club Mauro Pizzéria)

## August 30, 2019, Friday Afternoon Program

Location: *Vasváry Gallery*

- 13:30 – 14:00 *Official Opening Ceremony*  
by the City Council of Balatonfüred  
Katalin Duna, Head of the Lóczy Lajos High School
- 14:00 – 15:45 **Keynotes**
- 14:00 – 14:45 *Psychology of problem-solving and its role in education: from sputnik shock to the web – A problémamegoldás pszichológiája és szerepe a nevelésben: a szputnyik sokktól a webig.*  
Csaba Pléh, member of the Hungarian Academy of Sciences
- 15:00 – 15:45 *A Dienes Módszer – The Dienes Method*  
Prof. Sándor Klein, professor emeritus, University of Pécs
- 15:45 – 16:00 Coffee break

## Friday afternoon Round Table, Location: *Vasváry Gallery*

- 16:00 – 17:00 *Pólya György és Dienes Zoltán hatása a problémamegoldás történetére és számítógépes támogatására – George Pólya's and Zoltán Dienes's effect on the history of problem-solving and its computational augmentation. (in Hungarian)*  
Pléh Csaba akadémikus,  
Klein Sándor, prof. emeritus, PTE,  
Honfi Vid S. főiskolai tanár,  
Márkus Zsolt, SZTAKI e-Learning Osztály Vezető,  
Benedek András, moderator, MTA BTK
- 17:00 – 17:30 *Prof. Dienes's Games and its mathematical connections in art, music, architecture, education, and culture – interactive exhibition*  
Tools and motivations for a transdisciplinary experience  
Opening of the interactive exhibition: Sándor Klein, professor emeritus, University of Pécs, and SHL Hungary
- 18:30 – No host dinner at Halászkert

## August 31, 2019, Saturday Program (Location: *Vasváry Gallery*)

*The Psychology of Heuristics*

Chair: Csaba Pléh, member of the Hungarian Academy of Sciences

- 09:45 – 10:20 *Beyond Symbols: Movement, Communication and Intuition in Valéria Dienes's Philosophy, Psychology and Pedagogy*  
Brigitta Balogh, Partium Christian University / Eötvös Loránd University - Doctoral School of Education
- 10:20 – 10:55 *Brains - Minds - Maths*  
Zsuzsa Kondor, Research Centre for the Humanities, HAS
- 10:55 – 11:30 *Applications of deep learning to brain research*  
Regina Meszlényi-Deák, Research Center for the Natural Sciences of the HAS
- 11:30 – 11:45 Coffee break
- 11:45 – 12:20 *From heuristics to the changing logic of discovery - Pólya and Lakatos;*  
Dániel Golden, Research Centre for the Humanities, HAS
- 12:20 – 12:55 *On the origin and psycho-logic background of Zoltán Dienes's Principles*  
András Benedek, Research Centre for the Humanities, HAS
- 12:55 – 14:00 Lunch break (No host Club Mauro Pizzéria)
- 14:00 – 14:45 **Keynote:** *Implicit sequence learning and abstract structures: How can it be computationally modelled?*  
Prof. Zoltan Dienes, University of Sussex, UK
- 15:00 – 16:30 **Panel discussion** *Symbolism and Embodiment: from movement to mathematics and on the way back:* Agnes Boreczky, professor emeritus, ELTE, István Pálosi, director-choreographer, Hungarian Art of Movement Co., Zsuzsa Kondor and András Benedek, RCH HAS, Brigitta Balogh, Partium Christian Univ.
- 16:30 – 17:30 *Forum of International Projects and Collaborations*  
Agnes Tuska, CSU, Fresno, Deborah Stipek (Stanford University) Development and Research in Early Math Education, Kristóf Fenyvesi, Experience Workshop, Bridges Organization, Stan Yoshinobu, IBL Cal Poly San Luis Obispo