

**PROGRAM**

# **EELISA Scientific Student Competition 2023**

**17-19 MAY 2023**

**Pisa, Italy**

Alliance members



In Association with

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## EELISA Scientific Student Competition 2023

Sessions	MS TEAMS	Location
<b>17<sup>th</sup> MAY 14:00 – 18:00</b>		
Social Sciences 1	<a href="#">LINK</a>	Toscanelli Aula 1
Smart Materials and Production	<a href="#">LINK</a>	Toscanelli Aula 2
Informatics	<a href="#">LINK</a>	Sede Centrale Aula 3
Architecture	<a href="#">LINK</a>	Sede Centrale Aula 4
Medicine	<a href="#">LINK</a>	Sede Centrale Aula 5
<b>18<sup>th</sup> MAY 14:00 – 17:00</b>		
Social Sciences 2	<a href="#">LINK</a>	Aula Contini
Applied Sciences	<a href="#">LINK</a>	Aula Fermi
Chemical and Bioengineering	<a href="#">LINK</a>	Aula Volterra
Built Environment	<a href="#">LINK</a>	Aula Pasquali
<b>Awarding Ceremony 19<sup>th</sup> MAY 11:15 – 12:00</b>		

### Patrons:

Sofia Costa D'Aguiar (EELISA Executive Director)  
 Dale A. Martin (President of EELISA)  
 István Szabó (Strategic Director, Council of the Hungarian SSA)

### Scientific Committee:

Anikó Grad-Gyenge (BME)	Lukas Gugel (FAU)
Adrián Horváth (BME)	Mária Csete (BME)
Ágnes Urbin (BME)	Mariana Mocanu (UPB)
Alexander Preis (FAU)	Mariana Mirela Stanescu (UPB)
András Pataricza (BME)	Máté Zöldy (BME)
Asli Can Karaca (ITU)	Nirvana Popescu (UPB)
Beatrice Leustean (UPB)	Patricia Isabela BRĂILEANU (UPB)
Bushra Jalil (SSSA)	Ruxandra Ioniță (Lie) (UPB)
Daniele Giachini (SSSA)	Sándor Kiss (BME)
Delia Prisecaru (UPB)	Simona Bibic (UPB)
Emine Gorgul (ITU)	Tamás Iványi (BME)
Gabriel Pinto (UPM)	Tamás Krámer (BME)
Gianfranco Adornato (SNS)	Uğur Töreysin (ITU)
György Hild (BME)	Valentina Casieri (SSSA)
Javier García Martín (UPM)	Veronica Iacovacci (SSSA)
Jonas Walter (FAU)	Yonas Seifu Muanenda (SSSA)
Juan Manuel Muñoz (UPM)	Zsolt Lángi (BME)
László Hegedűs (BME)	

### Organizing Committee:

András Pataricza (BME)	Chiara Busnelli (SSSA)
Balázs Kövesdi (BME)	Rossella Raso (SSSA)
Cecília Liskay (BME)	Elisa Zanobini (SSSA)
László Gergely Vigh (BME)	Claudia Ambrogi (SSSA)
M. Akif Yazici (ITU)	Darya Krasilnikov (SNS)
Brigitta Szilágyi (BME)	Elisa Guidi (SNS)
Members of the EELISA WP5	Esra Çapanoğlu Güven (ITU)

**SOCIAL SCIENCES 1**  
**17<sup>th</sup> MAY 2023**

**Chairman:** Anikó Grad-Gyenge, Budapest University of Technology and Economics

**Jury members:** Ruxandra Ioniță (Lie), Politehnica University of Bucharest  
Tamás Iványi, Budapest University of Technology and Economics

**14<sup>00</sup> TIM AMME:** *Evaluation of Financing Options for Steward-Owned Companies*

**14<sup>20</sup> PATRICIA HIMML:** *The Red Dragon's First Step into the Americas – An Event Study on the China-Chile RTA Using the Chilean Stock Market*

**14<sup>40</sup> JULIANA TONN:** *Social acceptance of renewable energy projects – Development of a rating system for German photovoltaic and wind energy plants*

**15<sup>00</sup> Break**

**15<sup>15</sup> PÉTER ISTVÁN VAJDA:** *Corporate Social Responsibility Opportunities in the Construction Sector*

**15<sup>35</sup> MIRELA LOGHIN:** *Towards a green world: Comparing Public Attitudes and Perceptions of Renewable Energy - an empirical investigation across Countries and Technologies*

**15<sup>55</sup> FABIO SAPPINO:** *The Obscure Effort –Jacopo Gasparini Mediator and Commissioner for Political Affairs in the Ethiopian War*

## SMART MATERIALS AND PRODUCTION

### 17<sup>th</sup> MAY 2023

**Chairman:** Máté Zöldy, Budapest University of Technology and Economics

**Jury members:** Lukas Gugel, Friedrich-Alexander-Universität, Erlangen  
Ágnes Urbin, Budapest University of Technology and Economics  
Jonas Walter, Friedrich-Alexander-Universität, Erlangen

**14<sup>00</sup> JOHANNA BLOEHS:** *Homogenisation of the material parameters of a multilayered carbon fiber spring prosthetic foot*

**14<sup>20</sup> CĂTĂLIN CHELMUȘ, RAREȘ COMÎRLĂ, RADU DAMIAN, ANNE-MARIE IOAN, VLAD PÎSLARU, ȘTEFAN URSACHE:** *Supersonic rocket construction and aerodynamics study*

**14<sup>40</sup> BENCE SZABÓ, ÁRPÁD WÁGNER:** *Development of a Discrete Element Model for Studying Soil-Tool Interactions Using Artificial Intelligence*

**15<sup>00</sup> Break**

**15<sup>15</sup> GERGŐ BENDEGÚZ BÉKÉSI:** *Vision System Development for Thermal Transient Measurement Automation of DBCs Using Fully Convolutional Deep Learning Neural Networks, Image Processing Algorithms and Tree-structured Parzen Estimator*

**15<sup>35</sup> IOANA-ALEXANDRA NEAGU:** *Design of a Smart Furniture Piece with an Integrated Dust Collection System*

**15<sup>55</sup> ALEXANDRU-IOAN ANASTASIU:** *Controller software development for an articulated arm educational robot*

**16<sup>15</sup> Break**

**16<sup>30</sup> TAMÁS PÁLFI:** *Aerodynamic study of different types of wingtip devices*

**16<sup>50</sup> DAN FLORENTIN ANGELESCU, IOANA FLORENTINA DUNCA, DAVID PAUL HOLOCIUC:** *The use of smart pneumatics in the construction of Compressed Air Vehicles (CAVs)*

**17<sup>10</sup> ȘTEFAN GAMBEREA, FLORIN LUPAȘCU, DAN-BENE SÂRBU:** *Hydrogen – The fuel of the future*

**INFORMATICS**  
**17<sup>th</sup> MAY 2023**

**Chairman:** András Pataricza, Budapest University of Technology and Economics

**Jury members:** Javier García Martín, Universidad Politécnica de Madrid  
Mariana Mocanu, Politehnica University of Bucharest  
Nirvana Popescu, Politehnica University of Bucharest  
Uğur Töreyn, Istanbul Technical University

**14<sup>00</sup> PÉTER ANTAL:** *Trajectory Planning and Control Design for Payload Grasping and Transportation with Quadcopters*

**14<sup>20</sup> BOTOND LÁSZLÓ MÁRTON:** *Implementing classical communication steps in a CV-QKD system*

**14<sup>40</sup> ANA-ALEXANDRA BUNEA, ALEXANDRU-DRAGOȘ GEORGESCU:**  
*Applicability of Wireless Power Transfer*

**15<sup>00</sup> Break**

**15<sup>15</sup> PABLO IGNACIO MARCOS LÓPEZ:** *CanGraph – a python utility to study and analyse cancer-associated metabolites using knowledge graphs*

**15<sup>35</sup> ȘTEFAN ANDREI LAZĂR:** *Design methods of 3D assets for videogames and CGI*

**15<sup>55</sup> ANDREEA ALISTAR, CIPRIAN DOBRE:** *CRESCDI RESEARCH PORTAL – Enhancing the institutional research capacity of Politehnica University of Bucharest's research institutions*

**16<sup>15</sup> Break**

**16<sup>30</sup> ANDREI SEBASTIAN DARMAZ, MIRUNA-CĂTĂLINA-IOANA DECEA:**  
*Embedded accelerated algorithms for fusing the multi space environment using computer vision on autonomous driving*

**16<sup>50</sup> ONUR CAN KOYUN:** *Focus-and-Detect – A Small Object Detection Framework for Aerial Images*

**17<sup>10</sup> REYHAN KEVSER KESER:** *PURSUhInT – In Search of Informative Hint Points Based on Layer Clustering for Knowledge Distillation*

**17<sup>30</sup> ANDREI CRIVIDENCO, CIPRIAN DOBRE:** *Impact of research based on author's publications – Automatic mapping of WOS Subject Categories)*

**ARCHITECTURE**  
**17<sup>th</sup> MAY 2023**

**Chairman:** Gianfranco Adornato, Scuola Normale Superiore

**Jury members:** Emine Gorgul, Istanbul Technical University  
György Hild, Budapest University of Technology and Economics  
Delia Prisecaru, Politehnica University of Bucharest

**14<sup>00</sup> CSENGE FAUR:** *Ornamentation over the architectural character – The role of adornment in forming an identity in the matter of social architecture – through the example of the Rusz-house*

**14<sup>20</sup> MAITE RODRÍGUEZ LÓPEZ:** *Efficient growth processes in nature – Physarum Polycephalum and urban transport networks*

**14<sup>40</sup> DORKA JELINEK, BARNABÁS KARAKAS, DÁVID MÁRKUS:** *48 Eötvös Street*

**15<sup>00</sup> Break**

**15<sup>15</sup> JÚLIA BAKUCZ, BÍBORKA BÁNSZEGI, LILLA KAMMERMANN:** *Tripping on Modernist Monuments – The potential of rescue teams of the 20th century built environment in the former Eastern bloc*

**15<sup>35</sup> JUANA MARÍA GARCÍA LADRÓN DE GUEVARA:** *Analysis of design links in virtual architectural environments through a case study – The Witcher III*

**15<sup>55</sup> BEYZA BALLI:** *Plant Ecology Inspired Smart Home Design – A restorative perspective for sustainable behavior change through enhanced user experience*

**16<sup>15</sup> Break**

**16<sup>30</sup> THEODÓRA ESZTER FÜLÖP, TAMÁS GOMBOS, JOHANNA KRISZTINA TAKÁCS:** *Vade mecum*

**16<sup>50</sup> VIKTÓRIA BEGYIK, TIMEA CZAP:** *The future farms of West Bank*

**17<sup>10</sup> MÁTÉ ÉRSEK:** *References in the sacred buildings of Tamás Nagy*

**MEDICINE**  
**17<sup>th</sup> MAY 2023**

- Chairman:** Alexander Preis, Friedrich-Alexander-Universität, Erlangen
- Jury members:** Patricia Isabela Brăileanu, Politehnica University of Bucharest  
Mariana Mirela Stanescu, Politehnica University of Bucharest  
Valentina Casieri, Scuola Superiore Sant'Anna di Pisa
- 14<sup>00</sup> NUOFAN GAO:** *The Usage of Modified Plant Virus Nanoparticles for Rheumatoid Arthritis Diagnosis*
- 14<sup>20</sup> AURA OLTEANU:** *The design of a learning device for children*
- 14<sup>40</sup> JAIME MOUJIR LÓPEZ:** *Design and development of a virtual reality model in otorhinolaryngology aimed at clinical training*
- 15<sup>00</sup> Break**
- 15<sup>15</sup> PAOLO MORFINO:** *Treatment of cardiac fibrosis – From neuro-hormonal inhibitors to CAR-T cell therapy*
- 15<sup>35</sup> LIDIA TROMBELLO:** *Induction of T-cells senescence in the leukemic microenvironment*
- 15<sup>55</sup> BIANCA-VASILICA IFTIMOAI:** *Design of a radiation field measurement platform used in medical imaging specifically for computed tomography*
- 16<sup>15</sup> Break**
- 16<sup>30</sup> MARIA-FLAVIA IONESCU:** *Design of a custom hand prosthesis with myoelectric control*
- 16<sup>50</sup> RUXANDRA IOANA CIPU, STEFANIA MARIA MICHNEA, ANASTASIA MARES:** *Proton beam therapy as cancer treatment*
- 17<sup>10</sup> BIANCA-DELIA-MARIA PATRASCU, MELEK SELIM, MIHAELA-CRISTINA STRIMTOREANU:** *Considerations regarding electroencephalogram (EEG) based brain-computer interface (BCI) systems for enhancing cognitive performance*
- 17<sup>30</sup> LAURA MAILAT:** *Design and study of a prosthetic work clamp with two opposite functions – Open and close*

**SOCIAL SCIENCES 2**  
**18<sup>th</sup> MAY 2023**

**Chairman:** Mária Csete, Budapest University of Technology and Economics

**Jury members:** Daniele Giachini, Scuola Superiore Sant'Anna di Pisa  
Beatrice Leustean, Politehnica University of Bucharest

**14<sup>00</sup> MARKUS SCHOBER:** *Orchestrating Research and Innovation Ecosystems – The Cases of Siemens' University-Industry Collaborations*

**14<sup>20</sup> NIKOLETT CSABA:** *Public service on YouTube? Hungarian university students' attitudes towards public service*

**14<sup>40</sup> DOREL-BOGDAN BALAN:** *Self Esteem and Academic Achievement – Exploring the link in College Students*

**15<sup>00</sup> Break**

**15<sup>15</sup> LEVENTE VARGA:** *Complex preparation of an investment evaluation in the livestock sector II. – Modeling, cash flows, and calculative discount rate*

**15<sup>35</sup> ÁDÁM TÓTH:** *Developing the methodology for the evaluation of value creating processes of emergency healthcare*

**15<sup>55</sup> DJEMAA MOUSSAOUI:** *Sustainable plant based meat analogues – Evaluation of consumer response according to their attitude towards meat reduction*



**APPLIED SCIENCES**  
**18<sup>th</sup> MAY 2023**

**Chairman:** Bushra Jalil, Scuola Superiore Sant'Anna di Pisa

**Jury members:** Simona Bibic, Politehnica University of Bucharest  
Sándor Kiss, Budapest University of Technology and Economics  
Zsolt Lángi, Budapest University of Technology and Economics  
Yonas Seifu Muanenda, Scuola Superiore Sant'Anna di Pisa

**14<sup>00</sup> ANNA KRASZNAI:** *Front propagation and transport in non-integrable spin chains*

**14<sup>20</sup> ISTVÁN CSÉPÁNYI:** *Investigating the dynamical correlation functions of the Ising Quantum Field Theory at zero and finite temperature*

**14<sup>40</sup> FLAVIUS DRĂGOI, ANDRA-CRISTIANA MARIA-FULAȘU:** *A mathematical approach to the impact of climate change on nature and economy – And how it influences many aspects of our lives*

**15<sup>00</sup> Break**

**15<sup>15</sup> BARNABÁS BÖRCSÖK:** *Controlling Laplacian Eigenfluids*

**15<sup>35</sup> BÁLINT TÓTH:** *ECG and PPG signal-based real-time blood pressure estimation with deep learning in an embedded environment*

## CHEMICAL & BIOENGINEERING

### 18<sup>th</sup> MAY 2023

**Chairman:** Asli Can Karaca, Istanbul Technical University

**Jury members:** László Hegedűs, Budapest University of Technology and Economics  
Veronica Iacovacci, Scuola Superiore Sant'Anna di Pisa  
Gabriel Pinto, Universidad Politécnica de Madrid

**14<sup>00</sup> BALÁZS GYULA URBÁN, NÁNDOR MÉSZÁROS:** *Investigation of micro rubber particles from the surface of the driveways and reduction options in rainwater drainage systems*

**14<sup>20</sup> GEORGIANA-NICOLETA STAN:** *Miscible Displacement of Fluids in Capillary Tubes*

**14<sup>40</sup> DAVID-NICOLAE SIMION:** *Ferrofluid's Dynamics in Capillary Tubes*

**15<sup>00</sup> Break**

**15<sup>15</sup> IOANA RASUCEANU:** *Spontaneous liquid invasion in partially prefilled capillary tubes*

**15<sup>35</sup> PETRE-VLAD TARANU:** *Droplet fragmentation of biological fluids on a cylindrical pillar*

**15<sup>55</sup> ÁLVARO DE LA LLAVE PROPÍN:** *Research based learning in aquacultural engineering – Water currents as element of environmental enrichment in rainbow trout (*Oncorhynchus mykiss*) and their effect on growth and flesh quality*

**16<sup>15</sup> ȘTEFANIA-DIANA BOLDEANU, ANDREEA-MARIA DINU:** *Carbon Quantum Dots-Modified Electrodes for D-Fructose Detection*

**BUILT ENVIRONMENT**  
**18<sup>th</sup> MAY 2023**

**Chairman:** Juan Manuel Muñoz, Universidad Politécnica de Madrid

**Jury members:** Adrián Horváth, Budapest University of Technology and Economics  
Tamás Krámer, Budapest University of Technology and Economics

**14<sup>00</sup>** **ANDRÁS HORVÁTH:** *Welding simulation and measurement of normal and high strength steel box sections*

**14<sup>20</sup>** **VINCE SZIGETVÁRI:** *Automated Soil Layer Identification Based on CPT Results*

**14<sup>40</sup>** **HUSSEIN AL-TAMEEMI:** *Strengthening Concrete Columns with Fibre Reinforced Polymer*

**15<sup>00</sup>** *Break*

**15<sup>15</sup>** **CINTYA VILLACORTA:** *Use of conventional and unconventional water resources – implications for agriculture in Murcia, Spain*

**15<sup>35</sup>** **GABRIEL ARBONÈS DOMINGO:** *The Evolution of Irrigation in Spanish Agriculture and Its Impact On Water Body Status*

**15<sup>55</sup>** **CONSTANTIN-LEONTIN DOVÎNCĂ, GEORGIANA DOSPRA, ANDREI FRĂȚILĂ, ȘTEFAN-LEONARD PASCU:** *Consolidation of excellence research in the field of BMS-IoT Smart Digital Technologies in order to increase energy efficiency and reduce environmental impact*

**16<sup>15</sup>** **PETRU-ȘTEFAN SIMION, ANA-RUXANDRA PANAGHIA:** *The impact of solar panel farms*

