

# PROGRAM

## 14<sup>th</sup> WORLD CONGRESS OF THE RSAI

**Sustainable  
Regional Economic  
growth:  
Global challenges  
and  
new regional  
development trajectories**

14TH RSAI WORLD CONGRESS

8-11 APRIL

**2024**

**KECSKEMÉT,  
HUNGARY**



**The RSAI wishes you all a pleasant and inspiring participation!**

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**WELCOME TO  
THE 2024  
RSAI  
CONGRESS**

## Welcome Message from the RSAI President

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Dear colleagues and friends,

Warm welcome to the John von Neumann University in Kecskemét, Hungary and the 14th World Congress of the Regional Science Association International! Colleagues from about 40 countries are here at the first onsite RSAI Congress since 2018. During four magic days, the latest issues, methods and results in regional science will be presented and discussed. New networks will emerge and lay the foundation for new path-breaking research in the future.

The Local Organizing Committee, led by Dr. Balázs Forman and Dr. József Kárpáti, has done a marvelous job in preparing the Congress. In addition, I want to thank Dr. Andrea Caragliu, the RSAI Executive Director and Ms. Elisabete Martins, RSAI Secretariat for their dedicated efforts.

I wish you all unforgettable days in Kecskemét. Spring is in the air – and for Regional Science it is always springtime!



**Hans Westlund**

*President,*

*Regional Science Association International*

## Welcome Message from the LOC

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Welcome!

Kecskemét is a special place and a special city.

The area has been inhabited for 3000 years.

The name Kecskemét was first mentioned in a royal document 650 years ago.

It can look back on 610 years of urban history.

460 years ago, the various denominations made an agreement on the common use of the old church in the name of religious tolerance.

430 years ago, the citizens of Kecskemét acquired the territory and population of 30 villages in the vicinity from the Turkish landlords with a lease agreement. This is how they provided shelter and greater freedom to the inhabitants of these villages. At that time, the town's economy was mainly based on animal husbandry. Its most profitable export was cattle.

The zoned urban structure and land use of the 18th century were in accordance with Thünen's theory.

190 years ago, they redeemed the fiefdom obligations of the city's residents on their own. The air of the city of Kecskemét in what was still feudal Hungary freed me.

The modern vegetable and fruit cultivation that made Kecskemét famous began 170 years ago.

The railway line connecting Kecskemét to Pest was built 171 years ago.

141 years ago, the Orient Express from Paris to Bucharest first stopped in Kecskemét.

It has been 150 years since the great meeting between Kecskemét and the city-building genius Elek Kada. The nationally known writer, lawyer and politician recognized the unique conjuncture and period for Kecskemét.

Which was Károly Eszterházy for Eger, János Hild for Pest, Lajos Tisza and Lajos Lechner for Szeged, or Eugen Hausmann for Paris, that was Elek Kada for Kecskemét. But behind the complete rebuilding and modernization of these cities were significant public funds.

Mayor Kada built Kecskemét on his own. The citizens of Kecskemét took advantage of the market opportunities caused by the phylloxera epidemic that destroyed Hungary's traditional mountain wine regions. It was then that the local grape and wine production took off. Fruit growing took advantage of the opportunities of the rapidly growing Budapest market. Kecskemét helped with this by establishing a city-owned model garden participating in breed breeding. The cultivation of grapes and fruit laid the foundation for the rapid financial growth of Kecskemét and its citizens.

We owe it to this era, to the unity of Kecskemét's citizens, to Elek Kada's vision, that the city built a modern infrastructure and the iconic Art Nouveau buildings that still define its cityscape and its main square were built. The famous Hungarian poet Sándor Petőfi called Kecskemét the Famous City. The greatest Hungarian novelist, Mór Jókai, called Kecskemét the "metropolis of the deserts". The most populous city of the Hungarian Great Plain at the time became a model city of urbanization. The essence and spirit of Kecskemét was best expressed by another Hungarian writer, Zsigmond Móricz. The writer, who knows the backwardness of the Hungarian Great Plain very well and who also portrays it in his novels, recognizes and describes that Kecskemét is something different, something much more than its surroundings. Hard work is honored here. Kecskemét is "the model area of the working life of the Hungarian people".

Kecskemét is also a stronghold of Hungarian culture. In 1796, Hungary's first traveling theater began its performances here. The aforementioned Mór Jókai and Sándor Petőfi also lived here for a few years.

József Katona, the creator of the Hungarian drama writing was born here, who, incidentally, was the chief prosecutor of Kecskemét, and whose main work is the drama of our national heritage, titled „Bánk bán”.

Zoltán Kodály, the greatest Hungarian composer and music teacher, was born in Kecskemét in 1882. Composer, musicologist, music teacher, folk music researcher, member of the Hungarian Academy of Sciences, then its president from 1946 to 1949. The music teaching method marked by his name is now world famous, and in 2016 UNESCO declared it part of the intellectual cultural heritage.

## PROGRAM | 2024 RSAI CONGRESS

Kecskemét later took part in the development and reinterpretation of Hungarian culture. The cartoon studio has been operating in Kecskemét for more than 40 years. Here, among other things, the cartoon series presenting Hungarian folk tales were made. These animation shorts reinterpreted 19th-century visual techniques of Hungary's centuries-old intellectual heritage, using 20th century technologies.

What does Kecskemét mean? What does the spirit of the place mean, the heritage of a city?

Dealing with all challenges, whether it shall be an external enemy or the forces of nature. Stay on your feet and survive. To be tolerant and cooperate locally. Commitment to work and civil creed together. It is proud of its Hungarians and culture. This is the living heritage of Kecskemét!

Welcome at RSAI 14th World Congress 2024 in Kecskemét!



**Balázs Forman**

*Chair, Local Organising Committee*



**József Kárpáti**

*Chair, Local Organising Committee*

## Welcome Message from the RSAI Executive Director

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Dear RSAI community,

It gives me great pleasure to welcome you all to the 14<sup>th</sup> edition of the RSAI World Congress. More than ever, this year's congress provides a broad overview of the Countries, disciplinary approaches, and techniques in the world of regional science. As a regional scientist, I would like to support this statement with evidence.

On the basis of data on submissions to the 13<sup>th</sup> and 14<sup>th</sup> editions of the World Congress, Trend Surface Analysis regressions (shown in an appendix at the end of this program) suggest that, while the traditional hotspots (North America and Europe) of regional science keep going strong, substantial growth is taking place in other macroareas, with an increase in papers from South America, Asia, and Oceania.

The RSAI is most grateful to the Local Organizing Committee, chaired by Prof. Balázs Forman and Prof. József Kárpáti, and skillfully managed by Imre Vegvari, for professionally cooperating in the organization of the World Congress, and the John Von Neumann University, for graciously hosting the event with its world class premises. We also received great help from various sponsors, from the Municipality of Kecskemét and the city's Public Transport Company (KeKo), to various international organizations, such as DG Regio, the Joint Research Center of the European Union, and the Organization for Economic Cooperation and Development. Institutional support benefitted as usual from the friendly and tight relations with supranational and national sections, among which MRTT, the Hungarian Regional Science Association, and our two journals (*Papers in Regional Science*, and *Regional Science, Policy & Practice*). A scientific committee comprising some of the most productive colleagues in the discipline helped the conference select good papers.

Over the past couple of years, I had the pleasure and the honor to work on the organization of the congress with Prof. Hans Westlund. He worked tirelessly and silently, constantly resolving conflicts, proposing solutions to new problems, and mediating when needed. To him my personal *tack*.

Last but not least: as usual, the congress – as many RSAI activities – is based on the outstanding job done by Ms. Elisabete Martins. You will find her around the campus during the days of the congress – and rest assured, if a problem arises, she will find a way out.

I hope you will enjoy the congress, and I hope to meet many of you in the aisles and classrooms of this hospitable venue!



**Andrea Caragliu**  
*Executive Director,*  
*Regional Science Association International*



**CONFERENCE  
ORGANIZERS  
AND  
COMMITTEE**



## Organizing Committee

### President, RSAI

- Hans Westlund, KTH Stockholm

### Executive Director, RSAI

- Andrea Caragliu, Politecnico di Milano

### Chair, Local Organising Committee

- Balázs Forman , John Von Neumann University
- József Kárpáti , John Von Neumann University

### RSAI Conference Secretariat

Elisabete Martins

RSAI - Regional Science Association International

Email: [rsai@apdr.pt](mailto:rsai@apdr.pt)

### Local Organising Committee

- Imre Végvári, Project Manager
- Anna Tarnóy, John Von Neumann University
- Zoltán Gál, Hungarian Regional Science Association
- Szilárd Rácz, Hungarian Regional Science Association
- Tamás Fülöp, John von Neumann University
- Timea Czeglédi, John von Neumann University
- Edina Suba, John von Neumann University
- Zsolt János Viharos, John von Neumann University
- Éva Etelka Pálinkó, John von Neumann University
- Attila Kasznár, John von Neumann University
- Zsófia Hajnal, John von Neumann University

## Scientific Committee

Andrea Conte, JRC

Abdelwahed Mokni, University of Sfax

Alexander Lembecke, OECD

Amanda Ross, University of Alabama

André Chagas, University of Sao Paulo

Andrea Caragliu, Politecnico di Milano

Anne-Cathrin Niebuhr, Kiel University

Artur Ochojski, University of Katowice

Balázs Forman, John Von Neumann University

Budy Resosudarmo, Australian National University

Camilla Lenzi, Politecnico di Milano

Carlos Azzoni, University of Sao Paulo

Daniela Constantin, Academy of Economic Studies of Bucharest

Denise Pumanin, Géographie-cités, CNRS

Diana Cibulskiene, Institute of Regional Development

Dusan Paredes, Universidad Católica del Norte

Eduardo Haddad, University of Sao Paulo

Eveline Van Leeuwen, Wageningen University

Frank Van Oort, Erasmus University Rotterdam

Giovanni Perucca, Politecnico di Milano

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Miroslav Sipikal, The University of Economics in Bratislava

Monica Navarrete, Universidad de Tarapacá

Nij Tontisirin, Thammasat University

Patricio Aroca, Universidad Nacional Andrés Bello

Paul Snow, Peking University

Roberta Capello, Politecnico di Milano

Rosella Nicolini, Universitat Autònoma de Barcelona

Salma Hichri, University of Sfax

Samuel Amponsah Odei, Univerzita Hradec Králové

Sandy dell'Erba, Univ. of Illinois Urbana-Champaign

Sarah Low, Univ. of Illinois Urbana-Champaign

Sumana Bandyopadhyay, University of Kolkata

Sutee Anantsuksomsri, Chulalongkorn University

Tazviona Richman Gambe, Great Zimbabwe University

Tomaz Dentinho, University of the Azores

Vinko Munstra, University of Split

Yannis Psycharis, Panteion University Athens

Yoshiro Higano, University of Tsukuba

Zoltan Gal, University of Pécs



# SPONSORS

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# CONFERENCE THEMES

## Themes

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### Umbrella Theme

*Sustainable Regional Economic growth: Global challenges and new regional development trajectories*

### Regular Sessions' Themes

- RS01 - Entrepreneurship
- RS02 - Infrastructure, transportation and accessibility
- RS03 - Knowledge and innovation
- RS04 - Local finance
- RS05 - Location theory and applications
- RS06 - Methods in Regional Science and Urban Economics
- RS07 - Migration and regional labor markets
- RS08 - Real estate and housing
- RS09 - Regional and urban policy
- RS10 - Regional development
- RS11 - Rural development
- RS12 - Spatial implications of climate and environmental change
- RS13 - Spatial planning
- RS14 - The spatial dimension of sustainable development
- RS15 - Theoretical and empirical urban economics
- RS16 - Tourism
- RS17 - Globalization and territorial intelligence
- RS18 - Resilience and Risk Management
- RS19 - Green economy and complexity of socio-ecosystems
- RS20 - Biodiversity, ecosystems and ecosystem services
- RS21 - Agriculture, fisheries and food security
- RS22 - Nexus: water, agriculture and energy
- VN01 - Some technical issues in the development of sustainable mobility
- VN02 - Planning methods of sustainable mobility and logistics

### Special Sessions' Themes

**SS01 - The spatial, regional and urban dimensions of circular economy**

Sébastien Bourdin and André Torre

**SS02 - Creating Shared Value (CSV) for Sustainable Regional Development**

Lily Kiminami

**SS03 - Regional Development and Integration in Eurasia in the Belt and Road Era**

John Gibson

**SS04 - A New Toolbox for Novel Research in Regional, Urban and Spatial Studies**

Katarzyna Kopczewska

**SS05 - EU Cohesion Policy in the age of permacrisis. Embracing resilience, transition and growth**

Daniela L. Constantin, Erika Marin and Cristina Serbanica

**SS06 - Cities and climate change**

Zhifu Mi and Xuemei Bai

**SS07 - EU macro regions: the state of the art**

Paolo Sospiro, Marco Ciro Liscio and Daniele Bregoli

**SS08 - Territorial disparities defined along rural-urban axes**

Réka Horeczki and Stefan Bilasco

**SS09 - Borders and Borderlands – Local, Regional, and Geopolitical Aspects**

Péter Reményi, Imre Nagy, Haris Gekić and Szilárd Rácz

**SS10 - Regional Development and Sustainable Peace**

Tomaz Ponce Dentinho and Gabriela Carmen Pascariu

**SS11 - Spatial use and tourism-related mobility in the light of Industry 4.0**

Melinda Jászberényi, Márk Miskolczy and László Kökény

**SS12 - Creative cities and regions in Europe**

Dávid Fekete

**SS13 - Ethnic issues in a regional context: the phenomenon, problematics, and manifestations of ethnoregionalism**

Nóra Baranyai, Péter Balogh and Márton Péti

**SS14 - Sustainable Rural Development and Agricultural Resilience in a Globalized Landscape**

Nóra Gombkötő

**SS15 - Methodological challenges of statistics**

Eva Laczka

**SS16 - Global Value Chains restructuring, regional dynamics and inequalities**

Roberta Capello, Roberto Dellisanti and Giovanni Perucca

**SS17 - Towards local development through a sustainable valorization of cultural heritage: the role of tourism**

Silvia Cerisola and Silvia Emili

**SS18 - Regional and urban innovation ecosystem by Industry 4.0 & 5.0**

Tamás Gyulai

**SS19 - Digitalisation and Transformation of Creative Industries**

Abdul Shaban

**SS20 - The promise of transitions via innovation for sustainable regional development**

Salma Hichri, Hanene Ben Ouda Jamoussi and Abdelwahed Mokni

**SS21 - Territorial intelligence as the key to a sustainable future: new challenges to take opportunities of digital and ecological transition and build new paths for regional development and growth. Data, methods and solutions**

Simona Cafieri

**SS23 - Regional effects of the war in Ukraine – population, societies, and policies**

András Molnár

**SS24 - 300 years of Alföld and modernization. The history of Budapest as a function of innovations**

Balázs Forman

**SS25 - Wellbeing and City Love**

Carolina Guevara, Karima Kourtit and Peter Nijkamp

The background features a warm color palette of oranges and yellows. It is decorated with various geometric shapes, including large, semi-transparent polygons and smaller, solid-colored hexagons. A fine grid of small white dots is overlaid on the background, and several thin, white, curved lines sweep across the scene, adding a sense of movement and depth.

# **GENERAL INFORMATION**

# Venue

## JOHN VON NEUMANN UNIVERSITY

Address: Kecskemét, Izsáki út 5, 6000 Hungary

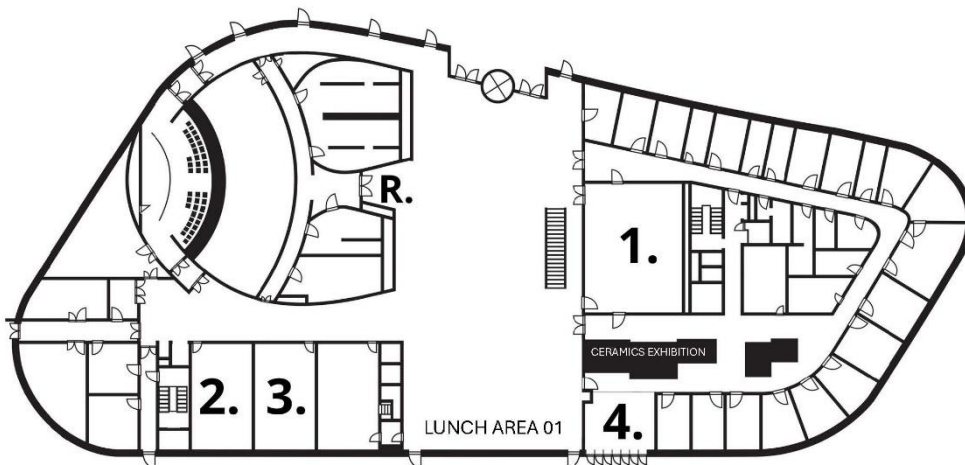




## The Rooms

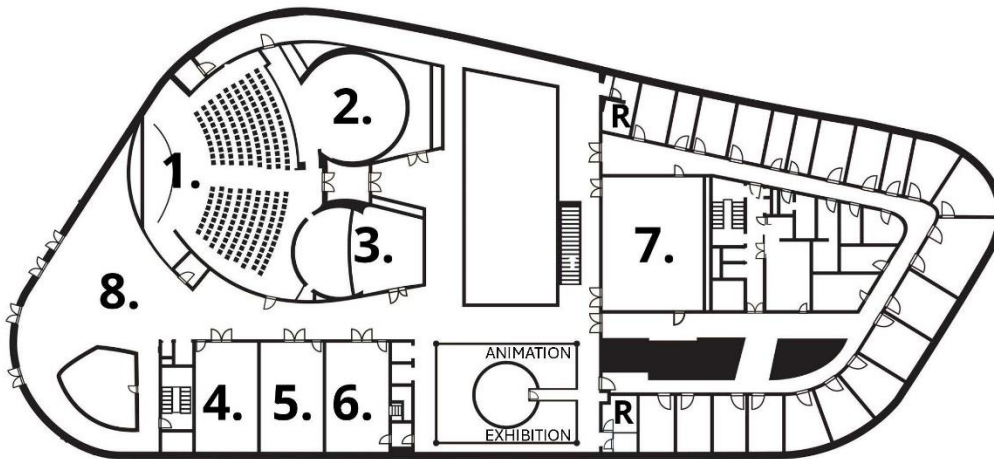
Room number	Room name	Floor
Room 0.23	Kodály Zoltán	Ground Floor
Room 0.24	Horváth Gyula	Ground Floor
Room 0.51	Kopátsy Sándor	Ground Floor
Room 1.06	Auditorium	First Floor
Room 1.13	Meeting Room	First Floor
Room 1.14	Bartók Béla	First Floor
Room 1.15	Rechnitzer János	First Floor
Room 1.45	Csatári Bálint	First Floor
Room 2.08	Board Meeting Room	Second Floor
Room 2.09	Liszt Ferenc	Second Floor
Room 2.10	Varga Attila	Second Floor
Room 2.41	Enyedi György	Second Floor

### Ground Floor - John von Neumann University CAMPUS Building



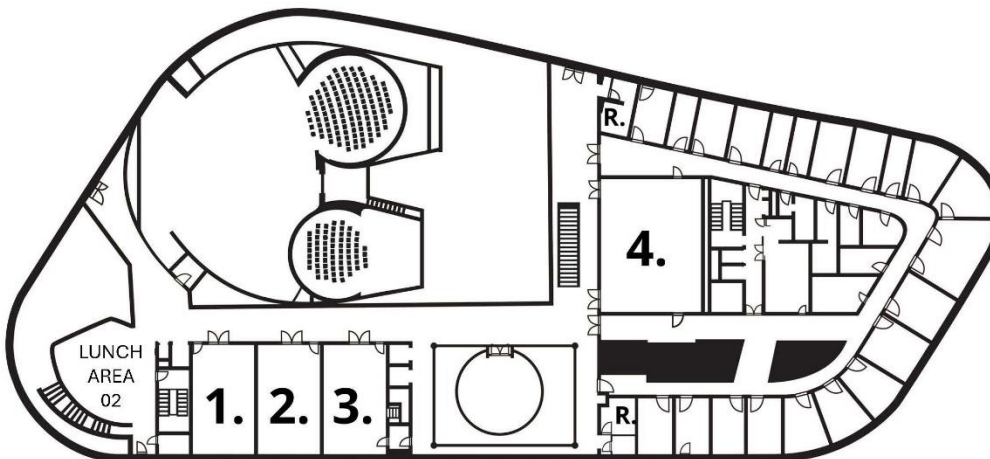
- 1. Room Kopátsy Sándor (0.51)
- 2. Room Kodály Zoltán (0.23)
- 3. Room Horváth Gyula (0.24)
- 4. Coworking
- R. Restroom

First Floor - John von Neumann University CAMPUS Building



- 1. Auditorium (1.06A)
- 2. Auditorium (1.06C)
- 3. Auditorium (1.06B)
- 4. Meeting room (1.13)
- 5. Room Bartók Béla (1.14)
- 6. Room Rechnitzer János (1.15)
- 7. Room Csatári Bálint (1.45)

Second Floor - John von Neumann University CAMPUS Building



- 1. Board Meeting Room (2.08)
- 2. Room Liszt Ferenc (2.09)
- 3. Room Varga Attila (2.10)
- 4. Room Enyedi György (2.41)
- R. Restroom

## About the names of the Rooms

### Kodály Zoltán (Room 0.23)

Vilmos Zoltán Kodály (Kecskemét, December 16, 1882 – Budapest, March 6, 1967) Hungarian composer, musicologist, musicologist, folk music researcher, three-time Kossuth laureate and awarded the title of outstanding artist, member of the Hungarian Academy of Music, then from 1946 to 1949 its president.

Zoltán Kodály was born on December 16, 1882 in Kecskemét. His father, Frigyes Kodály, with Hungarian-Flemish-Czech-Moravian ancestry, was a railway officer. His father was later transferred from Kecskemét to Szob, Galánta, and then to Nagyszombat, where he worked as a station chief. His mother Paulina Jalovetzky was the daughter of a restaurateur of Polish origin. His father played the violin and his mother the piano and sang.

He completed his elementary and high school studies in the folk school in Galánta (1888–1892) and in the archbishop's high school in Nagyszombat (1892–1900). He graduated in 1900. He enrolled in the Hungarian-German major at the Royal Hungarian University in Budapest. Béla Balázs, the later world-famous film director, was his roommate at the Eötvös College. In addition to the university, he also enrolled in the composition department of the Royal Hungarian Academy of Music. In June 1904, he received his diploma as a composer.

In 1905, he started collecting folk songs in Galánta and continued in the surrounding villages. He collected 150 tunes in one month. Later, he completed his dissertation on the knowledge of about a thousand Hungarian folk songs: The stanza structure of Hungarian folk songs (1906). He met Béla Bartók at the beginning of his research, and that's when their lifelong friendship began. In 1906, they jointly published ten folk songs with piano accompaniment under the title Hungarian folk songs. His thesis, Summer Evening, was presented on October 22. From 1907, he was appointed as a teacher of music theory and from 1908 of composition at the Academy of Music.

Between 1909 and 1920, he wrote exclusively songs for piano and orchestra, piano works and chamber pieces. Kodály created Hungarian song culture with his works based on the poems of the Hungarian classical poets János Arany, Sándor Kisfaludy, Dániel Berzsenyi, Ferenc Kölcsey, Mihály Vitéz Csokonai, Bálint Balassi, and Endre Ady.

In 1923, he composed the Psalmus Hungaricus commissioned for the 50th anniversary of the unification of Pest, Buda and Óbuda. With this, Kodály became the leading composer of Hungary at the time. His work was recognized in 1930 with the Corvin wreath award.

Kodály created the periodical Magyar Kórus és Énekszó in the mid-1930s in line with his ideals of popular education and folk education, which undertook to reform Catholic church music and raise the standard of music education. Kodály also composed many works for children. János Háry's song play (1925–27), Marosszéki dances (1930), Galántai dances (1933). Psalmus Hungaricus was played in concert halls in Europe and America. Felszállott a páva (1938–39) was created for the Amsterdam Concertgebouw, Concerto (1934) for the fiftieth anniversary of the Chicago Philharmonic.

In 1937, he wrote his historical summary of folk music entitled Magyar folk music.

The most important theme of Zoltán Kodály's writings was music education, which he considered a "musical inner mission". He spoke on the issue of the Hungarian faculty (1937) and also raised the idea of music education in kindergartens (Music in the Kindergarten, 1941). In parallel with this work, he put a number of pedagogical works on the desks of schoolchildren: the first Bicinia Hungarica (four volumes, 1937–1942), which introduces two-part singing, was published. At the turn of the 1930s and 1940s, Kodály's plan was to raise the standard of vocal education in primary schools.

He was elected a corresponding member of the Hungarian Academy of Sciences in 1943, and a full member in 1945. His mass for orchestra, organ and choir, pleading for peace, composed in 1944, the Missa brevis

Zoltán Kodály's music education concept is today the basis of Hungarian public music education. But it is also used in the United States of America and Japan.

According to his idea, the requisites of a good musician can be summarized in four points: 1. cultivated hearing, 2. cultivated intellect, 3. cultivated heart, 4. cultivated hand. All four must develop in parallel, in a constant balance.

In 2016, the Kodály method was declared part of the intellectual cultural heritage by UNESCO.

Béla Bartók made Hungarian folk music, its world of forms and heritage a part of classical serious music. Kodály, on the other hand, wanted to make the same heritage a public treasure of the people, which is why he was particularly concerned with music education and music pedagogy.

"Music is for everyone"

### Horváth Gyula (Room 0.24)

Gyula Horváth graduated with the first year in 1974 from the seconded faculty of the Károly Marx University of Economics in Pécs.

After obtaining his university diploma, he worked as a scientific assistant at the Transdanubian Institute of Science of the Hungarian Academy of Sciences.

He wrote his university doctoral thesis in 1977. From 1978, he became a scientific associate of the Transdanubian Institute of Science. In 1978 and 1982 he received the Academic Youth Award. He has been a member of ERSA since 1982. He defended his candidate thesis in 1987.

He was the author of 17 articles in the Discussion Papers series published by the MTA RKK. In the *Tér és Társadalom* magazine, founded in 1987, he published a study every year, a total of 23 articles.

From 1988, he taught at the Faculty of Economics of the Janus Pannonius University (now the University of Pécs) in the Department of Agricultural, Environmental and Regional Economics. From 1992, he became the director of the RKK Transdanubian Institute of the Hungarian Academy of Sciences.

During the study trips to Western Europe in the 1980s and 1990s, he began to research the most diverse areas of European regional politics. His interest turned to the examination of the regional policy of the European Communities and the European Union, and the regional political system of individual member countries (Italy, Great Britain, Ireland). In 1996, he participated in the founding of the PTE Regional Politics and Economics Doctoral School. This model was later successfully applied at other Hungarian universities in Győr, Szeged, Gödöllő, Debrecen and Miskolc.

In relation to regional development, instead of the development of post-industrial, mass-producing traditional industrial sectors, regional economic development based on innovation and technological development outlined the factors of structure and development. The description of the government model based on the division of power between the state and regions and its role in its application in Hungary are of great importance.

Since 1993, he has been a member of the Regional Science Committee of the Hungarian Academy of Sciences, of which he was president from 2011 to 2015. Since 1997, the MTA RKK was its director general. He was one of the founders of the Hungarian Regional Science Society (MRTT), founded in 2002, and was its first president until 2011.

He was awarded the academic doctorate in 1999, and in 2000 habilitated. He became a university professor in 2001. In 2010, the Regional Studies Association (RSA) held its annual conference in Pécs, of which he was the main organizer. In addition to research, his scientific activity also included education, school construction, and the training and supply of specialists.

In 1998, he received the Scientific Award of the Academic Committee of the Hungarian Academy of Sciences in Pécs, in 2001 he received the Academic Award, and in 2005 he received the Széchenyi Award.

He has been a member of the Academia Europaea since 2002.

Horváth, Gy. (2015a): *Spaces and places in Central and Eastern Europe: Historical trends and perspectives*. Routledge, London (Regions and Cities; 77.)

Hajdú, Z., Horváth, Gy. (eds.) (1994): *European challenges and Hungarian responses in regional policy*. Center for Regional Studies of the Hungarian Academy of Sciences, Pécs

Horváth, Gy. (1998a): *Regional and cohesion policy in Hungary*. Center for Regional Studies of the Hungarian Academy of Sciences, Pécs (Discussion Papers; 23.)

## Kopátsy Sándor (Room 0.51)

Sándor Kopátsy (Kaposvár, 1922 - Budapest, 2020) Hungarian economist.

The career of one of Hungary's best-known economists spans more than half a century, from economic reform programs to monitoring the privatization of the regime change to the creation of today's innovative economic approach.

He was born on February 27, 1922 in Kaposvár. Among his grandparents, only his paternal grandfather was Hungarian, whose wife was of German origin. His maternal grandparents were of Croatian nationality. His paternal grandfather got rich by building ornamental gardens for castles in the county of Somogy. However, the family became poor after the grandfather's death. He has three sons.

His eldest son lives in Australia with his family. His middle son lives in Hungary, but his wife is Japanese. His youngest son lives in Paris, His Highness is French.

Sándor Kopátsy always attended elementary school where the teacher's mother was placed. He graduated from Kaposvár. He attended the Budapest University of Technology, but could not finish the university because of the war. In 1945, he became the secretary of the Peasants' Party. This was not only a workplace for him, but also became his spiritual home and the starting point of his later career. Csoma Kőrösi, playwright László Németh, writer Béla Hamvas, Sándor Karácsony, sociologist Ferenc Erdei, lawyer, politician, writer István Bibó, writer Péter Veres, writer József Darvas were his colleagues and mentors. In 1945, the situation seemed clear that after the defeat in 2 world wars and the collapse of the former Hungarian state, a modern Hungary based on completely new foundations had to be created. The nationalizations carried out in Great Britain and Austria, the land reform in Italy, the introduction of the planned economy in France, and the construction of the Swedish welfare state all showed that it is not only possible, but also necessary to develop an economic system based on state intervention. The leaders of the Peasants' Party considered the creation and implementation of a long-term vision to be the most important. In 1945 and 1946, the most acute crisis management, the rapid reconstruction after the war, the restart of the country and the management of the hyperinflation used to finance it were carried out by the greatest Hungarian economists, Nicolas Kaldor, Béla Csikós-Nagy, Jenő Varga and József Bognár. The vision included the distribution of land, the modernization of Hungarian villages, the raising of the compulsory school age, the introduction of free health care, the modernization of the economy and public administration. However, the realization of the vision has already gone beyond the framework of neoclassical economics promoting free market competition. However, in Hungary, shortly after the Second World War, during the Soviet occupation of the country, a

Soviet-type planned economy was introduced in 1949. Strong feudal and weak bourgeois traditions, market economy players constantly struggling with difficulties, and a country with severely deficient natural resource wealth faced the reality, weaknesses, priorities and war economy of the planned economy. The incompatible structures hindered the operation and modernization of the Hungarian economy for four decades. There is nothing left but the continuous reform of the system. During his long career, Sándor Kopátsy participated in all of them. The priorities changed during the reforms, but the compelling circumstances remained. Several Hungarian economists have dealt with the disturbances in the operation of the economic management system. Among others, János Kornai, Tibor Liska, Sándor Kopátsy. Tibor Liska tried to give new frameworks to the development of entrepreneurship existing in Hungarian society. János Kornai described the operating mechanisms of the planned economy using the tools and concepts of neoclassical economics. Through János Kornai, the world understood not only in the West, but also in Poland and China, how the planned economy, which calls itself socialist, actually works.

Sándor Kopátsy, on the other hand, knowing Hungarian institutions and thinking from the inside, made the unity of the economy, society and the environment the focus of his economic thinking. His most famous idea became TETT. Translated into English, this is Nature – Morality – Knowledge – Talent.

All are scarce but necessary resources in a small country. All of them must be used optimally in order to increase the well-being and well-being of the country's inhabitants. In the thinking of Sándor Kopátsy, nature primarily meant agriculture. But who wouldn't attribute its importance to today's energy crisis and the climate crisis. The coordination of morality, public good and private interests has been one of the central issues of economics since Adam Smith. The most important resource for Hungary is knowledge, the multitude of qualified people and workers. Businesses will be successful if the entrepreneurs have all the necessary knowledge, competence and information. Talent is the most important thing, because Hungary cannot buy the best scientists and researchers, the latest patents and technologies on the international market. Sándor Kopátsy says that through talent management, all the talents of the country's residents and their development are needed to create innovations and new products, to increase the country's competitiveness and prosperity.

## **Bartók Béla (Room 1.14)**

Béla Bartók (Nagyszentmiklós, 1881 - New York, New York, 1945. ) Hungarian composer, pianist, folk music researcher, great collector of Central European and Middle Eastern folk music. He was a teacher at the Academy of Music and one of the most important composers of the 20th century. His art and scientific achievements are also important for universal culture.

János Bartók, the grandfather, became a teacher at the agricultural school in Nagyszentmiklós. He taught his students in their mother tongue: Hungarian, German, Romanian, Serbian. The elder Béla Bartók organized a music society in Nagyszentmiklós, played piano and cello, led an orchestra, and even composed. His mother, Paula Voit, was a teacher and an excellent piano player. His father died young, at the age of 32, in 1888. They moved to where the teacher's mother could find a job. Annual moves followed: after Nagyszentmiklós, Nagyszőlős, Nagyvárad, Bratislava, Beszterce, and then Bratislava again. Here he became a student of László Erkel. At that time, he played works by Chopin, Liszt and Bach. Ernő Dohnányi was a serious inspiration for him. In 1899, he enrolled at the Pest Academy of Music. From 1901, he studied piano and composition at the Academy of Music. He was really influenced by the music of Richard Strauss and Brahms. In 1903, he took piano lessons from Dohnányi. In the summer of 1904, he encountered Hungarian peasant music for the first time. It was then that he gradually began to discover the differences between peasant folk music and folk art, which he had always believed to be folk songs.

He started his folk music collections from 1905. He visited the villages with a phonograph and processed these collections with increasingly conscious scientific detail.

In 1906, he began a new creative era with his Hungarian folk songs for voice and piano, which included twenty arrangements, written together with Zoltán Kodály. His scientific work began at the same time. At first, he collected the music of Hungarians and then of the surrounding peoples, and these motifs soon appeared in his music.

From January 1907, he became a piano teacher at the Academy of Music, succeeding his former teacher. His first larger works were published in 1908. By 1918, he had written down about 3,500 Romanian and 3,200 Slovak melodies.

Béla Bartók realized that the original folk music, with its world of forms and feelings, is the musical art of the peasantry living in deep poverty. The difficulty, drama, and expression of the fates experienced distinguishes it from 19th-century classical serious music. Bartók was a very well-trained musician. His genius and great work ethic made it possible to collect, process, synthesize and incorporate the folk music of the Central European peoples into the world of modern serious music. In the world of music, he relied on an ancient source that had never been recognized or used before, peasant folk music. With the synthesis of folk music expressing dramatic emotions, even in the tragic European era of the 20th century, he was able to authentically express the questions and emotions of the people of the time.

This culminated in the opera Castle of the Bluebeard Prince in 1911. In 1917, his second opera The Wooden Prince was presented.

In 1921, he wrote his monograph A Magyar folk song.

And in 1923, for the fiftieth anniversary of the unification of Budapest, the city commissioned a play from him: it became Táncszvit.

He has made many concert tours in England, Holland, Germany, Italy, Czechoslovakia, and Romania. But he also made it to the United States and the Soviet Union several times.

In 1940, he traveled to the United States for an extended period of time and gave lectures on issues of Hungarian music at Harvard University. He died on September 26, 1945 in New York. He posthumously received the most prestigious Hungarian art award, the Kossuth Prize. In 1955, he received the International Peace Prize posthumously. Biography of his son, jr. It was written by Béla Bartók, an engineer, surveyor, and Unitarian church superintendent.

## Rechnitzer János (Room 1.15)

János Rechnitzer (Hédervár, 1952 - 2023) Hungarian economist, regionalist, winner of the Academic Award (2017), one of the founding professors of Széchenyi István University, head of the Doctoral School of Regional and Economic Sciences, the Research Center for Economic and Regional Sciences scientific advisor. From 2021, professor emeritus and research professor emeritus. He is married and has three daughters.

He graduated from Miklós Révai High School in Győr in 1970. He graduated from the university in 1975 at the Part-time Department of the Károly Marx University of Economics in Pécs. Today, this is the Faculty of Economics of the University of Pécs. Between 1975 and 1982, he was a scientific assistant at the Transdanubian Institute of Hungarian Academy of Sciences. Between 1982 and 1986, he was the economic director of the Pollack Mihály Technical College, then a college associate professor.

Since 1986, he has been a senior researcher at the Regional Research Center of the Hungarian Academy of Sciences. He organized the North-Danubian Department of the MTA RKK, which received institute status in 1995. Between 1995 and 2007, he was the director of the West Hungarian Scientific Institute of the RKK of the Hungarian Academy of Sciences. He was appointed university professor in 2000. Between 2002 and 2008, he was the dean of the newly established Széchenyi István University Faculty of Law and Economics.

In 2004, he founded the Multidisciplinary Social Sciences Doctoral School of István Széchenyi University, in which 140 candidates have obtained their doctorate degrees to date. From 2002, he was the head of the University's Department of Social Sciences, and then of the Department of Regional Studies and Public Policy until 2017. Between 2008 and 2012, he was the academic vice-rector of István Széchenyi University. Between 2008 and 2020, he was the head of the Doctoral School of Regional and Economic Sciences (RGDI) of István Széchenyi University. (2008-2020).

In 1978, he defended his university doctoral dissertation on the balance sheet of regional sectoral relations. That is why he received the Academy's Youth Award in 1979. He expanded the topic with various estimation procedures of the TÁKM. He was the first in Hungary to compile a territorial balance sheet. In his candidate's thesis defended in 1985, he analyzed the regional effects of air pollution. In his later researches, he examined the territorial connections of innovations. In 1995, he wrote his academic doctoral dissertation based on the theoretical and practical results of this. Its title is: Innovations shaping the spatial structure. Basic elements of innovation-oriented regional policy. In 1999, he obtained his habilitation in economics. The main areas of his scientific work: territorial planning, cross-border cooperation, theory and practice of territorial politics, territorial processes of transition, the innovation potential of the urban network, territorial innovation policy, the relationship between territorial capital and urban development, the economic and social effects of autonomous vehicles, East-Central -Development of Europe's big cities. The most important subjects taught at several universities: regional economics, territorial politics.

He was secretary (1993-1996), vice-president (1996-1997), and president (1997-2008, 2015-2017) of the Regional Sciences Committee of the Hungarian Academy of Sciences. Between 2011 and 2017, he was the president of the Hungarian Regional Science Society. Editor-in-chief of *Tér és Társadalom* magazine (1994-2010), member of the editorial board (from 2010).

He received the Officer's Cross of the Hungarian Order of Merit in 2022, the Regional Science Award in 2018, and the Academic Award in 2017. In 2014, he became an Honorary Citizen of the City of Győr County. In 2009, he received the Knight's Cross of the Order of Merit of the Republic of Hungary.

Kézai, P. K. ; Rechnitzer, J.: *Performance of enterprises in cultural and creative industries in large Hungarian cities between 2008 and 2018* REGIONAL STATISTICS 13 : 1 pp. 167-198. , 32 p. (2023)

Rechnitzer, J.; Berkes, J ; Filep, B.: *The most important city development initiatives of Hungary* REGIONAL STATISTICS 9 : 2 pp. 20-44. , 25 p. (2019)

Rechnitzer, J ; Reisinger, A.: *University - city - economy: characteristics of the "Győr model"* In: Aleksander, Surdej; Marcin, Kędzierski (szerk.) *Economic Challenges for higher education in Central and Eastern Europe* Torun, Lengyelország : Wydawnictwo Adam Marszałek (2015) pp. 118-141. , 24 p.

Rechnitzer, J: *The Landmarks of the Economy of Győr from the Regime Change Until the Middle Years of the 2010s* In: Csizmadia, Z; Dusek, T (szerk.) *The Győr Automotive District Győr, Magyarország : Universitas-Győr Nonprofit Kft.* (2014) 243 p. pp. 11-38. , 28 p.

## Csatári Bálint (Room 1.45)

Bálint Csatári (Karcag, August 13, 1949 – Kecskemét, September 17, 2019) Hungarian geographer, university lecturer, researcher of the social geography of the Great Plain. Married, father of three children.

He went to high school in Berettyóújfalu. In Szeged, József Attila University became a mathematics and geography teacher. In 1975, he obtained his doctoral degree at the doctoral school of geography. He returned to Berettyóújfalu, where he worked as a secondary school teacher until 1980. From 1980, he worked and researched as a scholar. In 1984, he was employed by the Kecskemét group of the Regional Research Center of the Academy of Sciences. 1992-2008. former director of the RKK Alföldi Institute of the Hungarian Academy of Sciences. From 2008, he was a senior scientific associate of the institute and head of the Kecskemét Science Department. In addition to his research work, he was an associate professor at the Department of Economic and Social Geography of the University of Szeged. His area of expertise is the geography of settlements, the geography of rural areas, micro- and macro-regional developments.

The main subject of Bálint Csátári's research was the Great Plain, which he loved very much. He researched the driving forces and phenomena of the development of the lowland settlements and their society. His important research areas were the scattered settlements of the Great Plain, the development trajectory of farms and the problems of Hungary's lagging regions. During his public activities, he also stood up for the lagging areas and social strata. He was a regular participant in forums and organizations dealing with regional development.

Csátári B.: *Spatial conflicts in rural areas of Hungary* In: Komornicki T, Czapiewski K Ł (eds.) Central and Eastern Europe: Changing Spatial Patterns of Human Activity: Changing Spatial Patterns of Human Activity. Warszawa: Polish Academy of Sciences, Institute of Geography and Spatial Organization, 2005. pp. 33-38. (Europa XXI; 12.)

Csátári B, Minamizuka S (ed.): *The Transformation of the Systems of East-Central Europe Rural Societies Before and After 1989* Kecskemét: Center for Regional Studies of the Hungarian Academy of Sciences - Chiba University, 1996. 124 p.

Csátári B, Paul L, Simon I, Keresztes Nagy Cs, Groen R, Visser A: *The Changing Function and Position of Rural Areas in Europe* In: Huigen P, Paul L, Volkers K (eds.) The Changing Function and Position of Rural Areas in Europe. Utrecht: Koninklijk Nederlands Aardrijkskundig Genootschap, 1992. pp. 153-168. (Nederlandsee geografische studies; 153.)

In 1997, he received the Academic Award, in 2002 the Award for Higher Education and Scientific Life of Kecskemét, and in 2010 the Officer's Cross of the Order of Merit of the Republic of Hungary.

## Liszt Ferenc (Room 2.09)

Ferenc Liszt (German name Franz Liszt; Doborján, 1811 - Bayreuth, 1886) Hungarian composer, pianist, conductor and music teacher, one of the most important composers of 19th century romantic classical music

His father, Ádám Liszt, was an official of Duke Esterházy. Ferenc Liszt's parents had German, Slavic and Hungarian ancestry. The family's mother tongue was German, Ferenc himself learned Hungarian only in his later years. Although he lived in many countries for longer or shorter periods of time, which he also considered his homeland, he always declared himself Hungarian and used a Hungarian passport as a Hungarian citizen. He recognized his son's exceptional musical talent early on and took every opportunity to develop it. At the age of nine, Liszt already played the piano in public in Sopron and Bratislava, and then continued his studies in Vienna. It was presented in Vienna on December 1, 1822. The first concert of the 11-year-old Liszt caused a great stir. Here he met Beethoven, who was a great role model of Ferenc Liszt. His first work, his variations on the Diabelli theme (circulation), was published here. Following his performance in Vienna, the young Liszt traveled to France with his father in the autumn of 1823, after four highly successful concerts in Pest and Buda, and moved to Paris, one of the centers of European artistic life.

He was not admitted to the Paris Conservatoire, so he returned to Vienna, where he studied music theory and counterpoint privately. His presentation in London was followed by several new invitations to France, Switzerland, and then again to England. His program mostly featured adaptations of popular operas. In 1827, he settled in the French capital for a while. Here he met Chopin, from whom he learned the nuances of playing the piano. He became one of the greatest piano virtuosos of his time. He met Berlioz, from whom he learned the orchestral language and the new achievements of program music.

At the end of the 1830s, he went on another concert tour, traveling all over Europe, from Portugal to Russia.

In 1835, he became a teacher at the Geneva Conservatory.

He supported the victims of the Pest flood disaster of 1838 with the income of his concerts in Vienna.

In the first half of the 1840s, Ferenc Liszt became known to the world as a virtuoso piano performer. Thanks to him, he brought many difficult pieces by Beethoven, Berlioz and Chopin to the stage.

During concert tours in Russia, he became acquainted with the art and love of Russian composers, Princess Carolyne zu Sayn-Wittgenstein, who later contributed to his literary work.

In the early forties, he became the conductor of the court theater in Weimar. For him, it was very important that he popularized and conducted the works of his contemporaries, as well as taught young musicians and composers. Liszt divided the last decades of his life between Weimar, Rome and Budapest.

He was the founding teacher, patron and president of the Budapest Academy of Music. The administrative tasks were carried out by another great Hungarian composer of the time, Ferenc Erkel, who composed the music for the National Anthem. In the first years of the Academy of Music, he willingly helped the newly emerging center of Hungarian music culture and undertook to teach here for a few months of each academic year. He offered a very significant amount from his private wealth for the construction of the Academy of Music building.

Liszt was an extremely prolific composer. He composed most of his works for the piano. But the big problem of his career as a composer and his art is that extraordinary technical knowledge is required to play his works. We can also say that as a composer he could not separate himself from his own virtuosity as a performer. He composed 400 original pieces,

most of which are virtuoso piano pieces, symphonies, symphonic poems, and masses. He composed 1,400 works including arrangements, transcriptions, and arrangements. This makes him one of the most prolific composers of all time. He was an enthusiastic supporter of program music. He also dealt with musical transcriptions and tackled the most complex orchestral works, such as Beethoven's symphonies, which Berlioz described as instrumental dramas. This is what made Liszt's symphonic poems. According to Liszt, the symphony is the past, which must be replaced by the symphonic poem, which unites music and literature and is considered a higher genre. This meant renewing the musical way of thinking, replacing classical forms with new ones. This created a new world of harmony, thereby enhancing the descriptive, expressive, associative, symbolic and synesthetic abilities of music.

His works are indispensable elements of concert programs in all parts of the world. In addition to his musical work, he wrote many essays on various topics: the social position of composers, art analyses, etc.

In May 1861 in Paris III. Napoleon appointed him Commander of the Order of Honor. In 1865 IX. Pope Pius received him at a private hearing. In 1867, he was awarded the Ferenc József Order In 1886, British Queen Victoria received him in London, at Windsor Castle, and presented him with her marble bust.

He lived in Budapest, Vienna, Paris, Geneva, Rome, Weimar, Bayreuth. A world-known piano artist, composer and conductor, he was also an extremely generous patron.

Today, the Academy of Music in Budapest and the international airport bear his name. The most prestigious state award for the most prestigious music artists was named after him.

## Varga Attila (Room 2.10)

Attila Varga (1958-2023) was born in Tatabánya. He completed his primary and secondary education here. He began his university studies in 1979 at the Faculty of Economics of JPTE. He received his degree in economics in 1983. In 1989, he obtained a university doctorate. In 1997, he obtained a PhD degree from the Department of Economics of West Virginia University (USA). From 1998 to 2001, he worked at the Austrian Academy of Sciences and was a senior research fellow at the Vienna University of Economics. He returned to Hungary in 2001. In 2006, he received a habilitation and a doctorate from the Hungarian Academy of Sciences, as well as a university professorship. In 2019, he was elected a corresponding member of the Hungarian Academy of Sciences.

As a university lecturer, he taught microeconomics, spatial economics and methodological issues of regional research at the University of Pécs. Between 2006 and 2012, he was the director of the Institute of Economics and Regional Sciences of PTE KTK, the founder of the Regional Innovation and Entrepreneurship Research Center. In 2013, he became the head of the Doctoral School of Regional Politics and Economics. Under his leadership, the doctoral school became internationally known and visited by foreign students.

Attila Varga's scientific work began and was completed in the United States. His main research area was the sectoral and spatial characteristics of knowledge flows. He investigated how innovations, starting from universities and research institutes, spread in the geographical, economic and administrative space. The book version of his academic doctoral dissertation was published under the title "University research and regional innovation: spatial econometric analysis of scientific technology transfers".

He has been researching the spatial factors of economic growth since the 2000s. He conducted his research with data from Hungary, the European Union and Turkey. The spatial economic impact analysis model was developed under his leadership. The results of his research work were also used in economic policy. His economic policy proposals focused on the development of R&D and human capital, business and innovation network policies, investment support for intelligent specialization, and infrastructure development.

He is one of the most cited Hungarian economists. The number of his references is almost 13,000.

In 2018, he received an Academic Award, in 2023 he was awarded the Order of Merit, and in 2023 he received an ERSA award.

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GROWTH AND CHANGE 52 : 4 pp. 2099-2123. , 25 p. (2021)

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Varga, A. ; Szerb, L. ; Sebestyén, T. ; Szabó, N.: Economic Impact Assessment of Entrepreneurship Policies with the GMR-Europe Model

In: Stenkula, Mikael; Marx, Axel; Sanders, Mark (szerk.) The Entrepreneurial Society : A Reform Strategy for Italy, Germany and the UK Heidelberg, Németország : Springer-Verlag (2020) pp. 39-70. , 32 p.

Varga, A. ; Szabo, N. ; Sebestyén, T.: Economic impact modelling of smart specialization policy: Which industries should prioritization target? PAPERS IN REGIONAL SCIENCE: THE JOURNAL OF THE REGIONAL SCIENCE ASSOCIATION INTERNATIONAL 99 : 5 pp. 1367-1388. , 22 p. (2020)



Varga, A. ; Sebestyén, T. ; Szabó, N. ; Szerb, L.: Estimating the economic impacts of knowledge network and entrepreneurship development in smart specialisation policy REGIONAL STUDIES 54 : 1 pp. 48-59. , 12 p. (2020)  
Varga, A (ed.) ; Erdős, K. (ed.): Handbook of Universities and Regional Development Cheltenham, Egyesült Királyság / Anglia : Edward Elgar (2019) , 424 p.

## Enyedi György (Room 2.41)

György Enyedi (Budapest, August 25, 1930 – Budapest, September 10, 2012) Széchenyi Prize-winning Hungarian geographer, economist, university professor, full member of the Hungarian Academy of Sciences, vice-president between 1999 and 2002. He is a renowned researcher of social geography and regional science.

He completed his secondary school studies at the Piarista High School in Budapest. In 1949, he began his university studies at the Károly Marx University of Economics, majoring in Regional Planning and Economic Geography, where he graduated in 1953. He obtained his university doctorate in 1958. He became a teaching assistant here. From 1955, he worked at Gödöllő University of Agricultural Sciences, where he first worked as a teaching assistant and then as an assistant professor. In 1960, he became a staff member of the Institute of Geography of the Hungarian Academy of Sciences, then became head of department and deputy director. In 1983, he was appointed the founding director general of the Regional Research Center of the Hungarian Academy of Sciences. From 1991, he became a research professor at the institute.

Among others, he taught at the Lajos Kossuth University in Debrecen, where he is an associate professor, at the Janus Pannonius University in Pécs and at the Eötvös Loránd University. He retired in 2008.

In 1962, he defended his candidate's thesis in geography, and in 1975, he defended his academic doctoral thesis. He was elected a corresponding member of the Hungarian Academy of Sciences in 1982, and a full member in 1990. Between 1988 and 1996, during the transition, he was the international secretary of the academy. Since 1999, he has been a member of the European Academy in London. He was also the vice-president of the National Scientific Research Fund and the editor-in-chief of Hungarian Science, the scientific journal of the Hungarian Academy of Sciences.

Between 1984 and 1992, he was vice-president of the International Geographical Union. Between 1998 and 2002, he was the president of the Hungarian UNESCO Commission. In Hungary, he was a decisive actor and shaper of both geography and regional science.

His field of research is regional science and social geography. In the course of his research, he examined the territorial inequalities of society and the characteristics of economic districts and regions (agricultural and industrial). His research on settlement networks is also internationally significant. He developed the concept of the village region. According to his theory, the rural area is not only a recipient or sufferer of urban influences, but also has its own development path: tourism, environmental protection, residence of city workers. While the traditional agricultural villages remained. His most important scientific achievement is the stages of urban development, the model of the urbanization cycle. In the period after the regime change, he investigated the spatial processes of the transition in Hungary. He played an outstanding role in the internationalization of Hungarian geography.

Married. Daughter, filmmaker Ildikó Enyedi.

He received the Academic Award in 1961 and the Széchenyi Award in 1998 for his outstanding academic work in the field of domestic and international regional research. In 1994, he was awarded the Middle Cross of the Order of Merit of the Republic of Hungary.

György Enyedi: Hungary. An Economic Geography. Boulder: Westview Press 1976. 289 p.

Enyedi, Gy: The stages of urban growth In: Szirmai, V (ed.) Urban Sprawl in Europe : Similarities or Differences? Budapest, Hungary : Aula Publishing House (2011) 280 p. pp. 45-62. , 18 p.

Enyedi, Gy: Applied geography in Central Europe In: Bailly, A; Gibson, LJ (ed.) Applied Geography. A World Perspective Dordrecht, The Netherlands : Kluwer Academic Publishers (2004) 328 p. pp. 169-187. 19 p.

# Transport

Public transportation lines in Kecskemét will be free to use for the Congress participants, courtesy of the mayor of the city.

You can find information on travel and accommodation at the RSAI 2024 JvNU website at <https://rsai2024.nje.hu/en/travel-practical-info>. When in Kecskemét, you will be able to use the public transport for free by showing your conference badge - or before picking it up, an image of it on your phone (find this image at the above mentioned web address) to the driver of the vehicle.



## Concept behind the Congress

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Dear Participants, Dear Colleagues,

Welcome to Hungary, to Kecskemét - and to John von Neumann University!

More than 50 countries' representatives are going to discuss their latest results and share opinion at the multi-disciplinary area of regional growth, economics, environment and geography between the 8th and 11th of April, 2024.

As we have been long preparing for this extraordinary event, we would like to give you a short overview of what you can expect during the World Congress.

From a scientific standpoint, the organizing committee made an effort to invite a diverse (from the disciplinary, geographical, and gender angle) pool of great keynote speakers, we are confident we will all learn from. As for sessions, papers have been arranged so as to maximize the time for presentation and allowing for a safe cushion for discussing results. We wanted to avoid the feeling of rushing to conclusions, due to the overcrowding of papers, that many of us have experienced in other events. The LOC also organized interesting opportunities to maximize publication chances, with a number of special issues dedicated to selected papers in both Hungarian and international journals. The LOC also temporarily dedicated conference rooms to great Hungarian regional scientists, as this is also an opportunity for the Hungarian section (MRTT) of the RSAI to showcase its great contributions to the scientific debate.

You can find information on travel and accommodation at the RSAI 2024 JvNU website at <https://rsai2024.nje.hu/en/travel-practical-info>. When in Kecskemét, you will be able to use the public transport for free by showing your conference badge - or before picking it up, an image of it on your phone (find this image at the above mentioned web address) to the driver of the vehicle.

When in Kecskemét, you should definitely visit some of the most important historical sights (<https://kecskemethu/en/turizmus/oroksegunk>) including the wonderful, recently restored Kecskemét City Hall and the visitor centre inside the building, the Hungarian Museum of Photography, the International Ceramics Studio, the Bozsó Collection of Art, the religious buildings of the centre, the Cifra Palota, the Kecskemét Baths and Swimming Pool, the local Cinema and Ballet programs - and the friendly restaurants and pubs in town (one of the pubs called Beszélő Köntös is going to be reserved for ourselves so that it can serve as a meeting point for us in the centre).

A citywide cultural event, the Kecskemét Spring Festival is going to be on in the city during the World Congress, detailed program available here: <https://kecskemeti-tavaszi-fesztival.hu> (please use Translate option for the Hungarian website). We would like to draw your attention to a concert by Ars Nova (at 19:00 on the 7th of April in the Kecskemét Town Hall Ceremonial Hall - free admission), the show of the Hungarian National Dance Ensemble (at 19:00 on the 9th of April in Hires Agora, tickets 5500 HUF, available here: <https://www.jegy.hu/program/magyar-nemzeti-tancegyuttas-karpatok-visszhangja-159002/1113943>) and the amazing percussion concert Vibes & Wires (at 17:30 on the 11th of April at the Kecskemét Kodály Music School).

We plan to bring some of the cultural exhibits to the venue of the event, so that you don't miss out even if you arrive with a very tight schedule: Kecskemét's International Ceramics Art Studio (<http://icshu.org/>) will organize an exhibition in the internal garden of the Campus during the conference days, presenting a great selection of international artwork of guest artists of the Ceramics Studio.

Also, the Kecskemétfilm animation studio (<https://kecskemetfilm.hu/en/homepage>) of our city is preparing to show you its great artwork in animation: you'll be able to view episodes and art of the "Hungarian Folk Tales" animation series which is widely known all over the world. In addition, the animation studio has offered

to allow a guided visit during the conference, to present you the work and results of this unique international workshop. This visit will take place in the afternoon of the 9th of April, places limited (30 member group).

During the days of the event, we would like to give you a literal taste of Hungary - so we plan to provide a different special Hungarian dish at every conference lunch, apart from catering to all the different needs of the participants of the World Congress. In the true spirit of sustainability, we will poll the actual lunch participation needs as we get closer to the event and only prepare the meals that actually get consumed.

We are also striving to render other aspects of the event as sustainable as possible, so we will not print any information materials, will use a special badge, operate the building of the JvNU Campus using renewable energy - and will plant a tree to commemorate the 2024 RSAI World Congress.

Sounds like a lot to cover? We know things at home don't stop while away, so we will provide a coworking space in case you'd need to have some work done!

There will also be ample time to meet and get to know each other even better during the week of the conference as well - a Welcome Reception on Monday and a Gala Dinner in the Sheraton Hotel on the evening of the 10th April (Wednesday).

## Wi-Fi Access

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Complimentary public Wi-Fi is available at the campus. No password is required.

## Meals

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Meals are included in the conference registration fee, with the exception of the Gala Dinner. If you purchased the optional Conference Gala Dinner that will be held on Wednesday night you will need a Ticket. Be prepared to present the dinner ticket on the day of the dinner.

Lunches will be served in the main building of JvNU where all other activities.

The Conference Gala Dinner will be held at Four Points By Sheraton Kecskemét Hotel.

## Instructions to Chairs and Presenters

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1. Sessions will last 2 hours. Please stick to the times shown in the program. If you have a no-show, use the time for a discussion of the proceeding paper(s) or for a recess. Please do not shift papers to fill voids, as individuals may want to attend a particular paper.
2. The majority of sessions have 4 papers. In 3 or 4 paper sessions, each presenter is allowed 20 minutes for presentation, followed by a 10 minutes discussion. In 5 papers session, each presenter is allocated 20 minutes, followed by 4 minutes discussion.
3. Hold each individual to the time available. If a speaker continues after time has expired, please let her/him know that time has expired. The audience and the other speakers will respect and support your decision.

We recall that the duties as Chair of a Session are:

- Promote compliance with schedules and the fair distribution of time available for all communications; and
- Managing debate time.

While formal discussions of papers presented at the conference are not mandatory, we encourage the chair of each session to facilitate the distribution of the papers or presentations about a week before the congress to all session participants. Session chairs are also encouraged to stimulate discussion by appointing a discussant for each paper among session participants.

The background features a warm color palette of oranges and yellows. It is decorated with various geometric shapes, including large, semi-transparent polygons and smaller, solid-colored hexagons and octagons. A fine grid of small white dots is overlaid on the background, and thin white curved lines sweep across the scene. A dark orange rectangular box is positioned in the upper right quadrant, containing the word "EXHIBITS" in white, bold, serif capital letters.

# EXHIBITS

## Exhibits



EUROPEAN COMMISSION  
DG Regional Policy

### DG REGIO

#### **Mission statement - regional and urban policy**

##### **Goal**

Regions growing together

##### **Vision**

Our vision is a European Union where people in all our regions and cities can realise their full potential. We aim for lasting improvement in the economy and quality of life for everybody, wherever they live.

##### **Principles and values**

Openness, integrity, objectivity and accountability are our core values. We are committed to the highest standards and the best results.

##### **Who we are**

We are some 700 professionals from all over the European Union who understand the diverse challenges faced by EU countries and their regions. We use our wide range of expertise to target investments that foster growth and create jobs. We aim to become a knowledge base within the European Commission to inform policy making with regional data and intelligence.

##### **How we work**

We work with EU member countries, regions and other stakeholders to assess needs, finance investments and evaluate the results from a long-term EU perspective. Together we ensure that the money is well spent.

We take pride in what we do and strive to make a difference.



### Joint Research Centre

#### **DG JRC**

#### **Mission statement - Joint Research Centre**

The JRC provides independent, evidence-based knowledge and science, supporting EU policies to positively impact society.

##### **A trusted partner for policymakers**

As a department of the European Commission, we play a key role at multiple stages of the policy cycle. We work closely with other Commission departments, EU institutions and agencies, as well as with scientific partners and policy organisations in Europe and internationally. We offer scientific expertise and competences from a very wide range of scientific disciplines in support of almost all EU policy areas.

##### **What we offer**

**Scientific excellence:** high-quality research accompanied by high standards of scientific integrity and transparency.

**Anticipation of new challenges and opportunities** to prepare policymakers for the complex and interlinked challenges faced by society.

**Capacity to map, review, analyse and synthesise** the best available evidence in support of EU policies.



### Elsevier

Elsevier is a global leader in information and analytics that helps researchers and healthcare professionals advance science and improve health outcomes for the benefit of society. We are proud to partner with RSAI to publish [Papers in Regional Science](#) and [Regional Science Practice and Policy](#).



# OVERVIEW PROGRAM

## Programme Overview

Monday, April 8		Tuesday, April 9		Wednesday, April 10		Thursday, April 11	
Registration desk [08:00-16:00   Main Hall]		Registration desk [08:00-16:00   Main Hall]		Registration desk [08:00-09:00   Main Hall]		Registration desk [08:00-09:00   Main Hall]	
		Parallel session 2 [08:30-10:30]		Parallel session 5 [08:30-10:30]		Parallel session 8 [08:30-10:30]	
		COFFEE BREAK [10:30-11:00]		COFFEE BREAK [10:30-11:00]		COFFEE BREAK [10:30-11:00]	
		Parallel session 3 [11:00-13:00]		Parallel session 6 [11:00-13:00]		Parallel session 9 [11:00-13:00]	
<b>OPENING CEREMONY &amp; PLENARY SESSION I</b> Keynote speech: <b>Sarah A. Low</b> <i>Engagement and Collaboration: Community-framed research for rural resiliency in the face of climate change</i> <b>Balázs Lengyel</b> <i>Small worlds of regional development</i> [13:00-15:30   Auditorium]		LUNCH [13:00-14:00]	LRPC of the RSAI meeting [13:00-14:00]	LUNCH [13:00-14:00]	RSAI Council meeting [13:00-14:00]	LUNCH [13:00-14:00]	
		<b>PLENARY SESSION II</b> Keynote speech: <b>Eduardo Haddad</b> <i>Modeling Spatial and Economic Impacts of Disasters</i> [14:00-15:30   Auditorium]		<b>PLENARY SESSION III</b> Keynote speech: <b>Hee-Jung Jun</b> <i>Urban Housing Development in Korea from a Comparative Perspective</i> [14:00-15:30   Auditorium]		<b>PLENARY SESSION IV</b> Keynote speech: <b>Özge Öner</b> <i>Mapping the Divide: Navigating the Microgeography and Geography of Polarisation and Discontent</i> [14:00-15:30   Auditorium]	
COFFEE BREAK [15:30-16:00]		COFFEE BREAK [15:30-16:00]		COFFEE BREAK [15:30-16:00]		COFFEE BREAK [15:30-16:00]	
<b>OECD Policy Session</b> <i>Shrinking Smartly – Managing Population Decline in Cities and Regions</i> [16:00-18:00   Auditorium]	Parallel session 1 [16:00-18:00]	<b>DG Regio Policy Session</b> <i>Cohesion Policy's contribution for solving legal obstacles in Cross-Border regions</i> [16:00-18:00   Auditorium]	Parallel session 4 [16:00-18:00]	<b>JRC-OECD Science for Policy Session</b> <i>Novelties in data, novelties in methods: What's new, what's next</i> [16:00-18:00   Auditorium]	Parallel session 7 [16:00-18:00]	<b>CLOSING CEREMONY</b> [16:00-18:00   Auditorium]	
Welcome Reception [18:00-20:00   University Main Hall]		<b>Job Market Session</b> <i>Working for international institutions</i> [18:00-19:00]					
		<b>"A Night on the Town"</b> Kecskemét Spring Festival cultural programs, dinner and pub opportunities [19:00-23:00]		<b>GALA DINNER</b> [19:00-22:00   Four Points by Sheraton Kecskemét Hotel]			



## Overview Parallel Sessions

Ground Floor			First Floor			Second Floor		
Room 0.23	Room 0.24	Room 0.51	Room 1.14	Room 1.15	Room 1.45	Room 2.09	Room 2.10	Room 2.41
<b>Monday, April 8 [16:00-18:00] Parallel session 1</b>								
SS14 Sustainable Rural Development and Agricultural Resilience in a Globalized Landscape	RS10.1 Regional development	SS24 300 years of Alföld and modernization. The history of Budapest as a function of innovations	RS18 Resilience and Risk Management	SS18 Regional and urban innovation ecosystem by Industry 4.0 & 5.0	SS10 Regional Development and Sustainable Peace	SS20 The promise of transitions via innovation for sustainable regional development	RS04 Local finance	RS17 Globalization and territorial intelligence
<b>Tuesday, April 9 [08:30-10:30] Parallel session 2</b>								
RS15.1 Theoretical and empirical urban economics	RS02.1 Infrastructure, transportation and accessibility	SS06.1 Cities and climate change	RS21 Agriculture, fisheries and food security	RS03.1 Knowledge and innovation	SS04.1 A New Toolbox for Novel Research in Regional, Urban and Spatial Studies	RS09.1 Regional and urban policy	RS11.1 Rural development	RS07.1 Migration and regional labor markets
<b>Tuesday, April 9 [11:00-13:00] Parallel session 3</b>								
SS02.1 Creating Shared Value (CSV) for Sustainable Regional Development	RS02.2 Infrastructure, transportation and accessibility	SS06.2 Cities and climate change	RS10.2 Regional development	RS03.2 Knowledge and innovation	SS04.2 A New Toolbox for Novel Research in Regional, Urban and Spatial Studies	RS09.2 Regional and urban policy	RS11.2 Rural development	RS07.2 Migration and regional labor markets
<b>Tuesday, April 9 [16:00-18:00] Parallel session 4</b>								
SS02.2 Creating Shared Value (CSV) for Sustainable Regional Development	SS11 Spatial use and tourism-related mobility in the light of Industry 4.0	SS06.3 Cities and climate change	RS10.3 Regional development	RS09.3 Regional and urban policy	SS04.3 A New Toolbox for Novel Research in Regional, Urban and Spatial Studies	RS11.3 Rural development	RS07.3 Migration and regional labor markets	RS03.3 Knowledge and innovation
<b>Wednesday, April 10 [08:30-10:30] Parallel session 5</b>								
SS09.1 Borders and Borderlands – Local, Regional, and Geopolitical Aspects	SS08.1 Territorial disparities defined along rural-urban axes	SS16.1 Global Value Chains restructuring, regional dynamics and inequalities	SS03 Regional Development and Integration in Eurasia in the Belt and Road Era	RS10.4 Regional development	RS03.4 Knowledge and innovation	RS06.1 Methods in Regional Science and Urban Economics	RS14.1 The spatial dimension of sustainable development	RS09.4 Regional and urban policy

<b>Ground Floor</b>			<b>First Floor</b>			<b>Second Floor</b>		
<b>Room 0.23</b>	<b>Room 0.24</b>	<b>Room 0.51</b>	<b>Room 1.14</b>	<b>Room 1.15</b>	<b>Room 1.45</b>	<b>Room 2.09</b>	<b>Room 2.10</b>	<b>Room 2.41</b>
<b>Wednesday, April 10 [11:00-13:00] Parallel session 6</b>								
SS09.2 Borders and Borderlands – Local, Regional, and Geopolitical Aspects	SS08.2 Territorial disparities defined along rural-urban axes	SS16.2 Global Value Chains restructuring, regional dynamics and inequalities	RS10.5 Regional development	RS03.5 Knowledge and innovation	VN01 Some technical issues in the development of sustainable mobility	RS14.2 The spatial dimension of sustainable development	RS09.5 Regional and urban policy	RS06.2 Methods in Regional Science and Urban Economics
<b>Wednesday, April 10 [16:00-18:00] Parallel session 7</b>								
SS09.3 Borders and Borderlands – Local, Regional, and Geopolitical Aspects	SS17 Towards local development through a sustainable valorization of cultural heritage: the role of tourism	RS08 Real estate and housing	SS08.3 Territorial disparities defined along rural-urban axes	RS03.6 Knowledge and innovation	RS14.3 The spatial dimension of sustainable development	RS09.6 Regional and urban policy	RS06.3 Methods in Regional Science and Urban Economics	RS10.6 Regional development
<b>Thursday, April 11 [08:30-10:30] Parallel session 8</b>								
RS12.1 Spatial implications of climate and environmental change	SS25.1 The Regional Science Academy Special Academic Session "Wellbeing and City Love"	SS05.1 EU Cohesion Policy in the age of permacrisis. Embracing resilience, transition and growth	SS12 Creative cities and regions in Europe	RS10.7 Regional development	SS01 The spatial, regional and urban dimensions of circular economy	RS19.1 Green economy and complexity of socio-ecosystems	SS13.1 Ethnic issues in a regional context: the phenomenon, problems, and manifestations of ethno regionalism	RS16.1 Tourism
<b>Thursday, April 11 [11:00-13:00] Parallel session 9</b>								
SS15 Methodological challenges of statistics	SS25.2 The Regional Science Academy Special Academic Session "Wellbeing and City Love"	SS05.2 EU Cohesion Policy in the age of permacrisis. Embracing resilience, transition and growth	RS19.2 Green economy and complexity of socio-ecosystems	RS16.2 Tourism	RS12.2 Spatial implications of climate and environmental change	VN02 Planning methods of sustainable mobility and logistics	SS13.2 Ethnic issues in a regional context: the phenomenon, problems, and manifestations of ethno regionalism	RS15.2 Theoretical and empirical urban economics

# DAY BY DAY PROGRAMME

Presenting authors  
are underlined

# Monday, 8 April 2024

## Special Session on “Highlights of Regional Science in Ukraine”

10:00-12:00 Monday, 8 April 2024

Room Kopátsy Sándor (0.51)

Chair **András Molnár and Carmen Nastase**

- 26 Housing challenges for Ukrainian refugees: a comparative analysis of Vienna and Lviv**  
Solomiia Tkach  
 Dolishniy Institute of Regional Research of National Academy of Science of Ukraine, Ukraine
- 209 Universities as Regional Leaders for Sustainable Energy and Climate EU-Harmonized Policies**  
Maksym Karpash<sup>1</sup>, Andriy Yavorskiy<sup>2</sup>, Ihor Rybitskiy<sup>1</sup>, Liubomyr Zhovtulia<sup>2</sup>, Vitalii Tsykh<sup>1</sup>  
<sup>1</sup>King Danylo University, Ukraine. <sup>2</sup>Ivano-Frankivsk National Technical University of Oil and Gas, Ukraine
- 210 Post-War Recovery Strategy in Ukraine: a Sustainable Development Prospect**  
Ruslan Biloskurskyi, Andrii Verstiak  
 Yuriy Fedkovych Chernivtsi National University, Ukraine
- 223 Strengthening the Financial Capacity of Local Governments as Regards the Recovery of Sustainable Regional Development: An Empirical Case of Ukraine**  
Andrii Buriachenko<sup>1</sup>, Hanna Kotina<sup>2,3</sup>, Maryna Stepura<sup>2,3</sup>  
<sup>1</sup>Head of the Department of Finance named after Viktor Fedosov, Ukraine. <sup>2</sup>Department of Finance named after Viktor Fedosov, Ukraine. <sup>3</sup>Guest Scientist, Professorship in Federal and Regional Financial Relations, University of Bremen, Germany

## OPENING CEREMONY

13:00 - 13:30 Monday, 8 April 2024

Auditorium (1.06)

### Welcome Speeches



**Hans Westlund**  
*President, Regional Science Association International*



**Andrea Caragliu**  
*Executive Director, Regional Science Association International*



**Roberta Capello**  
*President, European Regional Science Association*



**Ilona Pálné Kovács**  
*President, Hungarian Regional Science Association*



**Klaudia Szemerey-Pataki**  
*Mayor, Kecskemét City*



**Norbert Csizmadia**  
*Chairman, John von Neumann University Foundation Board*



**Tamás Fülöp**  
*Rector, John von Neumann University*



**Balázs Forman**  
*Chair, Local Organising Committee*



**József Kárpáti**  
*Chair, Local Organising Committee*

## PLENARY SESSION I

13:30 - 15:30 Monday, 8 April 2024

Auditorium 1.06

### Keynote Speech



*Engagement and Collaboration: Community-framed research for rural resiliency in the face of climate change*

**Sarah A. Low**

University of Illinois Urbana-Champaign, USA  
NARSC



*Small worlds of regional development*

**Balázs Lengyel**

ELKH Centre for Economic and Reg. Studies, Hungary  
ERSA

## OECD Policy Session

16:00-18:00 Monday, 8 April 2024

Auditorium (1.06)



### Shrinking Smartly – Managing Population Decline in Cities and Regions



**Chair:**

**Rudiger Ahrend**

Head of the Economic Analysis, Data and Statistics Division in the OECD

#### Panelists:



**Jae Beum Cho**

Economist and Policy Analyst at OECD



**Andrea Conte**

Team Leader / Economist at European Commission - Joint Research Centre



**Josefina Syssner**

Centre for Local Government Studies, Linköping University



**Anne Goujon**

IIASA Population and Just Societies Program Director

## PARALLEL SESSIONS (1)

16:00-18:00 Monday, 8 April 2024

### SS14 Sustainable Rural Development and Agricultural Resilience in a Globalized Landscape

16:00-18:00 Monday, 8 April 2024

Room Kodály Zoltán (0.23)

Chair **Nóra Gombkötő**

- 131 **Environmental, Social and Economic Dimensions of Community Supported Agriculture**  
Nóra Gombkötő  
Széchenyi István University, Hungary
- 191 **Ecological Feminist Analysis of Sustainable Development in Rural Tourism Economy – A Pilot Study of Hot Spring Village in Shanxi, China**  
Dan Liang  
Xinzhou Normal University, China
- 244 **The transformation of a rural area into a functional urban area through a Hungarian example**  
Andrea Pozsgai  
Széchenyi István University, Hungary
- 380 **The role of Rural Development in Development Policy**  
Pál Goda<sup>1,2</sup>, Katalin Mezei<sup>2</sup>  
<sup>1</sup>Institute of Agricultural Economics, Hungary. <sup>2</sup>Széchenyi István University Albert Kázmér Faculty of Mosonmagyaróvár, Hungary

### RS10.1 Regional development

16:00-18:00 Monday, 8 April 2024

Room Horváth Gyula (0.24)

Chair **Hongming Zhang**

- 6 **Analyzing the Nexus between Cluster Theory and Regional Development: A Case Study of the Bridal Industry in Izmir, Turkey**  
Cihan Mert Sabah  
Istanbul Technical University, Turkey
- 21 **Revitalizing Post-Earthquake Urban Landscapes: A Creative Economy Approach to Sustainable Regional Economic Growth in Eleven Turkish Provinces**  
Mehmet Ronael  
Istanbul Technical University, Turkey
- 23 **Spatial Differentiation of Effects on Housing Price: Estimation with New Media Data**  
Pınar Gökçe  
Istanbul Technical University, Turkey
- 314 **Disentangling Urban Network Externalities: A Juxtaposition of Central Place Theory and Central Flow Theory**  
Hongming Zhang, Tieshan Sun  
Peking University, China

## SS24 300 years of Alföld and modernization. The history of Budapest as a function of innovations

16:00-18:00 Monday, 8 April 2024

Room Kopátsy Sándor (0.51)

Chair **Balázs Forman**

### 360 Budapest 150

[Anna Abraham](#)<sup>1,2</sup>, [Adel Hogye](#)<sup>1</sup>

<sup>1</sup>NJE, Hungary. <sup>2</sup>ELTE, Hungary

### 387 Social perception of the process of demographic shrinkage in one of Hungary's underdeveloped, inner peripheral rural regions – Case study Greater Cumania

[Tibor Kovács](#)<sup>1</sup>, [Csaba Ruszkai](#)<sup>2</sup>, [Mária Vasvári](#)<sup>3</sup>

<sup>1</sup>Municipality of Kisújszállás, Hungary. <sup>2</sup>Eszterházy Károly Catholic University, Hungary. <sup>3</sup>Debrecen University, Hungary

### 395 Questions of social sustainability in an inner peripheral rural Hungarian region in the light of talent geography research

[Tibor Kovács](#)<sup>1</sup>, [Szabolcs Mátyás](#)<sup>2</sup>

<sup>1</sup>Municipality of Kisújszállás, Hungary. <sup>2</sup>National University of Public Service, Hungary

## RS18 Resilience and Risk Management

16:00-18:00 Monday, 8 April 2024

Room Bartók Béla (1.14)

Chair **András Igari**

### 84 Spatio-temporal diffusion of COVID-19 vaccines in Europe and their role in control of the pandemic

[András Igari](#)

ELTE Eötvös Loránd University, Institute of Geography and Earth Sciences, Department of Regional Science, Budapest, Hungary. HÉTFA Research Institute, Budapest, Hungary

### 117 An Analysis of China's Aluminium Ores and Concentrates Import Dependence Risk and Optimization of Layout

[Yu Wang](#)<sup>1,2</sup>, [Jingjing Yan](#)<sup>1,2</sup>, [Ziyao An](#)<sup>1,2</sup>, [Zhangyang Li](#)<sup>1,2</sup>

<sup>1</sup>School of Economics and Management, China University of Geosciences Beijing, China. <sup>2</sup>Key Laboratory of Carrying Capacity Assessment for Resource and Environment, Ministry of Natural Resources, China

### 184 Rethinking social resilience – New approach and measurement concept

[Balázs Mahler](#)

University of Sopron, Hungary

### 275 A Novel Study on “SOULFUL” in “Information and Business Driven”: List of 2020's Pandemic Data for Class; “General and Unification Phenomenon”, Japan

[Hayama Kazuyoshi](#)

Japan



## SS18 Regional and urban innovation ecosystem by Industry 4.0 & 5.0

16:00-18:00 Monday, 8 April 2024

Room Rechnitzer János (1.15)

Chair **Tamás Gyulai**

### 116 Regional innovation ecosystem, urban development, Industry 5.0 –Learning Factory as an enabler

**Tamás Gyulai**<sup>1,2</sup>, **Péter Wolf**<sup>3</sup>, **Ferenc Kása**<sup>4</sup>, **Zsolt János Viharos**<sup>5,6</sup>

<sup>1</sup>IQ Kecskemét Industrial Research, Hungary. <sup>2</sup>Széchenyi István University, Hungary. <sup>3</sup>Pest County Municipality, Hungary.

<sup>4</sup>Neumann Technology Platform, Hungary. <sup>5</sup>John von Neumann University, Hungary. <sup>6</sup>Institute for Computer Science and

Control (SZTAKI), Centre of Excellence in Production Informatics and Control, Hungarian Research Network (HUN-REN),

Centre of Excellence of the Hungarian Academy of Sciences (MTA), Hungary

### 266 The Urban Industrial Landscape: How Digital Advancements Reshape Location Choices

**Jeong-Il Park**

Keimyung University, Korea, Republic of

### 396 The Impact of Széchenyi István University on the Economic and Social Development of the Transdanubian Region

**Eszter Lukács**

Vice-President for International Affairs and Strategic Relations, Széchenyi István University, Győr, Hungary

## SS10 Regional Development and Sustainable Peace 16:00-18:00 Monday, 8 April 2024

Room Csatári Bálint (1.45)

Chair **Tomaz Ponce Dentinho**

### 54 Assessing Tourism Competitiveness Across Hungarian Destinations: Recent Discoveries and Implications

**Géza Tóth**<sup>1,2</sup>, **Ivett Vargáné Gálicz**<sup>3</sup>, **Lóránt Dénes Dávid**<sup>4</sup>

<sup>1</sup>Hungarian Central Statistical Office, Hungary. <sup>2</sup>University of Miskolc, Hungary. <sup>3</sup>Hungarian University of Agricultural and Life Sciences, Doctoral School of Economics and Regional Sciences, Hungary. <sup>4</sup>John von Neumann University, Hungary

### 149 Water for peace: The importance of water and the regional dimension of water-related conflicts

**Zoltán Ködmön**

Széchenyi István University, Hungary

### 225 Natural Disasters, Emergency Declaration, and Corruption

**Ihorlad Ayala**

Banco de la República (Central Bank of Colombia), Colombia

### 322 Impact of Social and Political Instabilities on the Economic Growth of Countries

**Abdul Shaban**

School of Development Studies, Tata Institute of Social Sciences, Mumbai, India

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## SS20 The promise of transitions via innovation for sustainable regional development

16:00-18:00 Monday, 8 April 2024

Room Liszt Ferenc (2.09)

Chair **Salma Hichri**

- 356 **The energy transition and economic growth: An empirical analysis of the EKC in Tunisia**  
**Nahed Brahmi, [Salma Hichri](#)**  
University of Sfax, Tunisia
- 358 **Smart Ports as a Tool for Strengthening Cities' Resilience**  
**[Hanene Jamoussi](#), [Dhouha Rebai](#), [Jamel Louati](#)**  
Université de Mannouba (ESCT), Tunisia
- 401 **Rethinking Tunisia's Transition to Sustainability in Connection with the New Territorial Division**  
**[Hanene Jamoussi](#)**  
High School of Business, Tunisia
- 402 **The impact of socially responsible consumption on nostalgic perception: the case of local food products**  
**[Elhem Gharbi](#), [Hanene Jamoussi](#)**  
High school of Business of Tunis, Tunisia

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## RS04 Local finance

16:00-18:00 Monday, 8 April 2024

Room Varga Attila (2.10)

Chair **Michael Steiner**

- 94 **The impact of sustainable investments on the effectiveness of companies**  
**[Zsófia Hajnal](#)**  
John Von Neumann, Hungary
- 220 **Opportunistic Investment: The Political Economy Impacts of FEMA Hurricane Declarations**  
**[Amanda Ross](#)<sup>1</sup>, [Amir Ferreira Neto](#)<sup>2</sup>, [Rushaine Gouldbourne](#)<sup>3</sup>**  
<sup>1</sup>University of Alabama, USA. <sup>2</sup>Florida Gulf Coast University, USA. <sup>3</sup>Freddie Mac, USA
- 351 **Regional perspectives of limits of public debt. A tentative theoretical and empirical approach.**  
**[Michael Steiner](#), [Sandro Lackner](#)**  
Institute of Economics - University of Graz, Austria

## RS17 Globalization and territorial intelligence

16:00-18:00 Monday, 8 April 2024

Room Enyedi György (2.41)

Chair **Jozsef Karpati**

81 **Strategic Coupling to Global Production Networks in the Regional Development Agenda: Toward Conceptual Integration**

[Isra Hatipoğlu<sup>1</sup>](#), [Ferhan Gezici Korten<sup>1</sup>](#), [Nuri Yavan<sup>2</sup>](#)

<sup>1</sup>Istanbul Technical University, Turkey. <sup>2</sup>Ankara University, Turkey

135 **Driving Eastward: An Analysis of Chinese Automotive Foreign Direct Investment in Central Asian and South-East Asian Economies**

[Jozsef Karpati](#)

John von Neumann University, Hungary

145 **The Logic of Local and Global Identities – as Seen in the Comparative Science of Ideologies**

[Andor Müller](#)

Kecskemét, Hungary

## Welcome Reception

18:00-20:00 Monday, 8 April 2024

University Main Hall

# Tuesday, 9 April 2024

## PARALLEL SESSIONS (2)

08:30-10:30 Tuesday, 9 April 2024

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### RS15.1 Theoretical and empirical urban economics

08:30-10:30 Tuesday, 9 April 2024

Room Kodály Zoltán (0.23)

Chair **Eğinc Simay Ertürk**

**114 China's Foregone Urbanization Dividend: Declining Agglomeration Elasticities and Misplaced Construction**

**Chao Li<sup>1</sup>, John Gibson<sup>2</sup>, Bonggeun Kim<sup>3</sup>**

<sup>1</sup>University of Auckland, New Zealand. <sup>2</sup>University of Waikato, New Zealand. <sup>3</sup>Seoul National University, Korea, Republic of

**176 Searching for the impact of network connectivity on borrowing performance: The case of Turkey**

**Eğinc Simay Ertürk, Ferhan Gezici**

Istanbul Technical University, Turkey

**228 Glaeser Meets Ellison: Coagglomeration and Consumption Amenities**

**Andrea Caragliu<sup>1</sup>, Martijn Smit<sup>2</sup>, Frank van Oort<sup>3</sup>**

<sup>1</sup>Politecnico di Milano, Italy. <sup>2</sup>Utrecht University, Netherlands. <sup>3</sup>Erasmus University Rotterdam, Netherlands

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### RS02.1 Infrastructure, transportation and accessibility

08:30-10:30 Tuesday, 9 April 2024

Room Horváth Gyula (0.24)

Chair **Gabor Miklos**

**12 Relations between the Central-European Trade Routes and Revenues of EU Members**

**Gabor Miklos**

Corvinus University of Budapest, Hungary

**45 High-Speed Railway station Impact on Regional Economic Development in China: An Empirical Analysis Using the SDID Model**

**He Mingxia<sup>1</sup>, Yi Liangjun<sup>2</sup>**

<sup>1</sup>Economics Department in Sichuan University of Science & Engineering, China. <sup>2</sup>Economics Department in Xiamen University, China

**14 Sustainability of Indonesia Transport Loan Financed Projects: Development Outcome Attributions (DOA) on Unemployment, Growth, and Poverty**

**Muhammad A Ingratubun**

<sup>1</sup>IPB University, Indonesia

## SS06.1 Cities and climate change

08:30-10:30 Tuesday, 9 April 2024

Room Kopátsy Sándor (0.51)

Chair **Zhifu Mi**

- 52 **Dynamic Evolution of Urban Space and its Sustainable Path under Climate Change - A Case Study of the Guangdong-Hong Kong-Macao Greater Bay Area**  
Liu Xinyu, Tang Ying  
College of Economics Shenzhen University, China
- 72 **Using crowdsourced data to estimate the carbon footprints of global cities**  
Xinlu Sun, Zhifu Mi  
University College London, United Kingdom
- 307 **Industrial digitalization, government digital attention and low-carbon transformation of energy structures**  
Qiufeng Sun, Rufeng Sun, Li Du  
Jilin University, China

## RS21 Agriculture, fisheries and food security

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Room Bartók Béla (1.14)

Chair **Péter Ruppert**

- 163 **Effect of Information about Wild Boar on Consumers' Behaviors**  
Naoki Sugita<sup>1</sup>, Yoshifumi Kodama<sup>2</sup>, Koji Kato<sup>1</sup>, Ryosuke Kikushima<sup>3</sup>, Kumiko Takeshima<sup>4</sup>  
<sup>1</sup>Utsunomiya University, Japan. <sup>2</sup>Toyo University, Japan. <sup>3</sup>Tokyo University of Agriculture, Japan. <sup>4</sup>Ehime University, Japan
- 337 **Concentration of Exports of the Main Agricultural Products of Mercosur. An inter-regional and international analysis for the period 2013-2022**  
Plinio Ramirez Alvarez, Jorge González Villalba, Victor Enciso Cano, Martín Blanco Desvard, Genaro Torales Solís  
NEIAgro - FCA UNA, Paraguay
- 338 **Dependence on Fertilizers in Paraguay. Analysis of the concentration of imports for the period 2003-2022**  
Jorge Adorno Machai, Plinio Ramirez Alvarez, Victor Enciso Cano, Danny Ríos Velázquez  
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- 354 **Hoodome: the Hungarian Foodome**  
Michael Sebek<sup>1</sup>, Milán Jánosov<sup>2</sup>, Péter Ruppert<sup>1</sup>, Ákos Iózwiak<sup>3</sup>, Albert-László Barabási<sup>1</sup>  
<sup>1</sup>Northeastern University, USA. <sup>2</sup>Geospatial Data Consulting, Hungary. <sup>3</sup>Syreon Research Institute, Hungary

## RS03.1 Knowledge and innovation

08:30-10:30 Tuesday, 9 April 2024

Room Rechnitzer János (1.15)

Chair **Yuanxi Li**

- 41 **Regional differences in the 9<sup>th</sup> and 12<sup>th</sup> grades of Hungarian public education. Equality of opportunity, output and competences**  
[Balazs Gyorgy Forman](#)<sup>1</sup>, [János Blahó](#)<sup>2</sup>, [Máriusz Dunai](#)<sup>3</sup>  
<sup>1</sup>John von Neumann University, Hungary. <sup>2</sup>University of Szeged, Hungary. <sup>3</sup>Stirling University, United Kingdom
- 67 **The geography and path-dependency of social innovations across EU regions**  
[Filippo Berti Mecocci](#)<sup>1</sup>, [Roberto Dellisanti](#)<sup>2</sup>, [Amir Maghssudipour](#)<sup>3</sup>  
<sup>1</sup>Università di Firenze, Italy. <sup>2</sup>Politecnico di Milano, Italy. <sup>3</sup>Università di Padova, Italy
- 119 **Central Hungary's integration into the knowledge society**  
[László Trautmann](#)<sup>1</sup>, [Adél Hógye](#)<sup>2</sup>, [Cecília Vida](#)<sup>3</sup>  
<sup>1</sup>associate professor, Hungary. <sup>2</sup>master's student, Hungary. <sup>3</sup>economist, Hungary
- 315 **Latecomers' catch-up in the 4th technological revolution: Based on the perspective of knowledge complexity**  
[Yuanxi Li](#)<sup>1,2</sup>, [Tieshan Sun](#)<sup>1</sup>, [Hongming Zhang](#)<sup>1,2</sup>  
<sup>1</sup>Peking University, China. <sup>2</sup>Politecnico di Milano, Italy

## SS04.1 A New Toolbox for Novel Research in Regional, Urban and Spatial Studies

08:30-10:30 Tuesday, 9 April 2024

Room Csatári Bálint (1.45)

Chair **Katarzyna Kopczewska**

- 40 **Application of hybrid Gibbs processes to firm location forecasting**  
[Kateryna Zabarina](#)  
 University of Warsaw, Poland
- 93 **Location Signalling: Unravelling causal CBD impact on technological startup survival**  
[Maria Kubara](#)  
 University of Warsaw, Poland
- 349 **Young people in the post-pandemic labour market: response, recovery and resilience in European and worldwide regions**  
[Simona Cafieri](#)  
 ISTAT, National Institute of Statistics, Italy

## RS09.1 Regional and urban policy

08:30-10:30 Tuesday, 9 April 2024

Room Liszt Ferenc (2.09)

Chair **Mahla Shojae Anari**

- 11 **The rule of law as the barrier of cohesion resources**  
[Richárd Kószó](#)  
 Richárd Kószó Ph.D. Reader, Faculty of Law and Political Science, University of Szeged, Hungary, Hungary
- 33 **The role of the financial intermediary system in development policy, highlighting regional development in the 2007-2013 EU development period in Hungary**  
[Sára Somogyi-Farkas](#)  
 John von Neumann University, Hungary
- 75 **Navigating the Pinnacle: Exploring the Paramount Challenges of Urban Big Data in Tehran**  
[Mahla Shojae Anari](#)  
 Ph.D. student at ELTE university of Hungary, Iran, Islamic Republic of
- 107 **Planning and accompanying industry in its transformation: towards a renewal of regional industrial policies?**  
[Lucas Chevrier](#)  
 Ecole des Ponts - CIREN, France

## RS11.1 Rural development

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Room Varga Attila (2.10)

Chair **Mallory Rahe**

- 48 **Problems arising along the urban rural fringe - a case study of Hungarian cities**  
[András Donát Kovács](#), [Gábor Vasárus](#), [Jenő Zsolt Farkas](#)  
 Centre for Economic and Regional Studies - Institute for Regional Studies, Hungary
- 51 **Rural Development Challenges and Resilient Countermeasures in Northern and Central Europe: A Comparison of Sweden and Slovakia**  
[Hans Westlund](#)<sup>1</sup>, [Kamila Borsekova](#)<sup>2</sup>  
<sup>1</sup>KTH Royal Institute of Technology, Sweden. <sup>2</sup>Matej Bel University, Slovakia
- 77 **U.S. rural farmers market vendor persistence and sales during 2019-2021**  
[Mallory Rahe](#)<sup>1</sup>, [Juo-Han Tsay](#)<sup>1</sup>, [Sarah Low](#)<sup>2</sup>  
<sup>1</sup>University of Missouri, USA. <sup>2</sup>University of Illinois, USA

## RS07.1 Migration and regional labor markets

08:30-10:30 Tuesday, 9 April 2024

Room Enyedi György (2.41)

Chair **András Molnár**

- 30 **Occupation portability and regional allocative flexibility: evidence from Brazil**  
**Rafael Pires Oliveira, Carlos Azzoni**  
 University of Sao Paulo, Brazil
- 92 **Beyond the Numbers: Analysing the Complexities of the Western Transdanubian Region's Labour Market**  
**Patrícia Horváth**  
 Széchenyi István University Doctoral School of Regional- and Economic Sciences, Hungary
- 127 **Influence of Regional Cultural Differences on Settlement Intentions of Floating Population in China**  
**Jieping Chen<sup>1</sup>, Xiaoli Hu<sup>2</sup>**  
<sup>1</sup>Sanda University, China. <sup>2</sup>Tongji University, China
- 167 **Wage Premium of Recent Movers – Better Matches or Compensating Differentials?**  
**István Boza<sup>1</sup>, Virág Ilyés<sup>2,1</sup>, László Lőrincz<sup>1,2</sup>, Rikard Eriksson<sup>3</sup>**  
<sup>1</sup>Centre for Economic and Regional Studies (KRTK), Budapest, Hungary. <sup>2</sup>Corvinus University of Budapest, Hungary. <sup>3</sup>Umeå University, Sweden

## Coffee break

10:30-11:00 Tuesday, 9 April 2024

## PARALLEL SESSIONS (3)

11:00-13:00 Tuesday, 9 April 2024

### SS02.1 Creating Shared Value (CSV) for Sustainable Regional Development

11:00-13:00 Tuesday, 9 April 2024

Room Kodály Zoltán (0.23)

Chair **Lily Kiminami**

- 17 **Empirical Study on the Current Situation of Japanese Agricultural Corporations: Perspectives from Creating Shared Value**  
**Akira Kiminami<sup>1</sup>, Lily Kiminami<sup>2</sup>, Shinichi Furuzawa<sup>2</sup>**  
<sup>1</sup>The University of Tokyo, Japan. <sup>2</sup>Niigata University, Japan
- 35 **A Mixed Methods Research on CSV Management in the Japanese Rice Flour-Related Business**  
**Lily Kiminami<sup>1</sup>, Shinichi Furuzawa<sup>1</sup>, Akira Kiminami<sup>2</sup>**  
<sup>1</sup>Niigata University, Japan. <sup>2</sup>The University of Tokyo, Japan
- 43 **Diversity Management in Japanese Agriculture for Creating Shared Value**  
**Shinichi Furuzawa<sup>1</sup>, Lily Kiminami<sup>1</sup>, Akira Kiminami<sup>2</sup>**  
<sup>1</sup>Niigata University, Japan. <sup>2</sup>The University of Tokyo, Japan



## RS02.2 Infrastructure, transportation and accessibility

11:00-13:00 Tuesday, 9 April 2024

Room Horváth Gyula (0.24)

Chair **Tainá Pacheco**

- 101 Do Capital Flows Ride the High-speed Railway? Evidence from China's Mergers and Acquisitions**  
Shuai Shi  
 The University of Hong Kong, Hong Kong
- 106 Development opportunities for Danube freight transport and the evaluation of the results of the Strategy for the Danube Region**  
Dávid Nagy  
 CERS Institute for Regional Studies, Hungary
- 297 Effects of commuting subsidies on commuting distance and mode choice: the role of urban structure**  
Tainá Pacheco  
 UAB (Autonomous University of Barcelona), Spain

## SS06.2 Cities and climate change

11:00-13:00 Tuesday, 9 April 2024

Room Kopátsy Sándor (0.51)

Chair **Zhifu Mi**

- 112 High Tides, High Stakes: the Dual Role of MoSe Barriers in Safeguarding Venice**  
Francesco Angelini<sup>1</sup>, Paolo Figini<sup>2</sup>, Veronica Leoni<sup>3</sup>  
<sup>1</sup>University of Bologna, Department of Statistical Sciences, Italy. <sup>2</sup>University of Bologna, Department of Economics, Italy.  
<sup>3</sup>University of the Balearic Islands, Department of Applied Economics, Spain
- 158 A Quantitative Evaluation Framework of Community Thermal Resilience in Response to Power Outage Events in Heat Waves**  
Wensen Luo<sup>1</sup>, Qian Shi<sup>1</sup>, Chao Xiao<sup>1</sup>, Julian Wang<sup>2</sup>  
<sup>1</sup>School of Economics and Management, Tongji University, China. <sup>2</sup>Department of Architectural Engineering, Pennsylvania State University, USA
- 246 Long-run dynamics of Carbon Dioxide emissions, economic growth and energy efficiency at city level in China**  
Bin Hu  
 Tsinghua University, China
- 389 Charging Forward: Unveiling Dynamics, Challenges, and Strategies in the Shift to Electric Vehicles**  
Dan Liang  
 Xinzhou Normal University, China

## RS10.2 Regional development

11:00-13:00 Tuesday, 9 April 2024

Room Bartók Béla (1.14)

Chair **Balázs Pager**

- 175 **A Double Bell Theory of Regional Income Inequalities: an Integrated Inter and Intra Regional Approach**  
**Roberta Capello, Silvia Cerisola**  
 Politecnico di Milano, Italy
- 178 **Impact of FDI on regional economic development (growth and productivity) in Central and Eastern Europe revisited**  
**Zoltan Gal<sup>1,2</sup>, Stefan Apostol<sup>1</sup>**  
<sup>1</sup>University of Pécs, Hungary. <sup>2</sup>Centre for Economic & Regional Studies, Hungary
- 201 **Unraveling the Complexity of Globalization: A Multidimensional Analysis of Quality Parameters and Competitive Disadvantages**  
**Saverio Di Giorno<sup>1</sup>, Ivano Dileo<sup>1</sup>, Giorgia Scognamiglio<sup>2</sup>**  
<sup>1</sup>University of Naples Parthenope, Italy. <sup>2</sup>Sapienza University of Rome, Italy
- 211 **Regional Sustainability Transition: Evidence on Challenges and Responses from 10 Disadvantaged Danube Regions**  
**Simon Baumgartinger-Seiringer<sup>1</sup>, Veronika Desch<sup>1</sup>, Balázs Páger<sup>1,2</sup>, Michaela Trippel<sup>1</sup>**  
<sup>1</sup>University of Vienna Department of Geography and Regional Research, Austria. <sup>2</sup>Centre for Economic and Regional Studies, Hungary

## RS03.2 Knowledge and innovation

11:00-13:00 Tuesday, 9 April 2024

Room Rechnitzer János (1.15)

Chair **Zsófia Viktória Vida**

- 113 **How does green innovation network affect the green total factor productivity? New evidence from China's Yangtze River Delta region**  
**Hongrui Jiao<sup>1,2</sup>, Hongbing Deng<sup>1,2</sup>, Shengmei Hu<sup>1,2</sup>**  
<sup>1</sup>School of Economics and Management, China University of Geosciences (Wuhan), China. <sup>2</sup>Hubei Institutes of Soft Science on Regional Innovation Capacity Monitoring and Analysis, China
- 136 **Establishing Start-Up Companies in Central and Eastern Europe: The Role of Institutions**  
**István Pesti, Akos Toth**  
 John von Neumann University, Hungary
- 138 **Emerging centres of smart city research. Lessons from science mapping and spatial collaboration patterns**  
**Zsófia Viktória Vida<sup>1</sup>, Balázs Borsi<sup>2</sup>**  
<sup>1</sup>Dept. of Science Policy and Scientometrics, Library and Information Centre of the Hungarian Academy of Sciences, Hungary. <sup>2</sup>ESSCA School of Management, Hungary
- 292 **Digital Entrepreneurship Ecosystem in the Central Eastern European countries in the 2017-2019 time period**  
**László Szerb<sup>1</sup>, Enikő Czigler<sup>1</sup>, Gergely Horváth<sup>2</sup>**  
<sup>1</sup>University of Pécs, Faculty of Business and Economics, Hungary. <sup>2</sup>The Global Entrepreneurship and Development Institute, Hungary

## SS04.2 A New Toolbox for Novel Research in Regional, Urban and Spatial Studies

11:00-13:00 Tuesday, 9 April 2024

Room Csatári Bálint (1.45)

Chair **Katarzyna Kopczewska**

- 95 **Entropic Generalized Q Analysis**  
Tomaz Dentinho  
 University of Azores, Portugal
- 139 **Spatio-temporal Evolution of Patent Clusters: A Comprehensive Analysis from 1980 to 2010 in the UK**  
Zehra Usta  
 University of Warsaw, Poland
- 215 **Interfirm Networks behind Coagglomeration**  
Sandor Iuhasz<sup>1</sup>, Zoltan Elekes<sup>2</sup>, Virag Ilyes<sup>3</sup>, Frank Neffke<sup>1</sup>  
<sup>1</sup>Complexity Science Hub Vienna, Austria. <sup>2</sup>HUN-REN CERS KTI, Hungary. <sup>3</sup>Corvinus University of Budapest, Hungary
- 400 **Examining the Impact of EU Funding in the Mezőkövesd District in 2014-2020, with a Special Focus on Job Creation and Economic Development**  
Boglarka Bánné Gál, György Kocziszky  
 Borsod-Abaúj-Zemplén Vármegye Önkormányzata, Hungary

## RS09.2 Regional and urban policy

11:00-13:00 Tuesday, 9 April 2024

Room Liszt Ferenc (2.09)

Chair **Dagmara Kociuba**

- 109 **A successor model to FDI-driven regional development in Central and Eastern Europe? Challenges, concepts, and exploratory scenarios**  
Gabor Lux<sup>1</sup>, Zoltan Gal<sup>1,2</sup>  
<sup>1</sup>HUN-REN CERS Institute for Regional Studies, Hungary. <sup>2</sup>University of Pécs, Faculty of Economics & Business, Hungary
- 115 **Policy and governance of functional urban areas - the case of Poland**  
Dagmara Kociuba  
 Maria Curie-Skłodowska University in Lublin, Poland
- 123 **Suburbanization within the city: An apparent paradox and its environmental consequences in the case of Hungarian rural centers.**  
Gábor Vasárus, József Lennert  
 Centre for Economic and Regional Studies, Hungary
- 129 **SNAI and Polish FUA: in search of a tailored geographical scale of functional areas**  
Dagmara Kociuba<sup>1</sup>, Elia Vettorato<sup>2</sup>  
<sup>1</sup>Maria Curie-Skłodowska University in Lublin, Poland. <sup>2</sup>Politecnico di Milano, Italy

## RS11.2 Rural development

11:00-13:00 Tuesday, 9 April 2024

Room Varga Attila (2.10)

Chair **Nataliia Moroziuk**

- 79 **Social innovation in the development of rural areas**  
Zsolt Harangozo  
 University of Miskolc, Hungary
- 160 **Comparison of European and Ukrainian Approaches to Rural Development**  
Nataliia Moroziuk  
 KTH Royal Institute of Technology, Sweden
- 233 **Ethnic culture as a basis of a local development: Gyimesbükk / Ghimeş-Făget (RO)**  
Gábor Szalkai  
 ELTE Eötvös Loránd University, Institute of Geography and Earth Sciences, Department of Regional Science, Budapest, Hungary, Hungary

## RS07.2 Migration and regional labor markets

11:00-13:00 Tuesday, 9 April 2024

Room Enyedi György (2.41)

Chair **Carolina Guevara**

- 186 **Regional development and the migrants' challenges: an investigation on Bangladeshi students in Hungary**  
Laila Parvin Suchi  
 PhD student at Eötvös Loránd University, Hungary, Bangladesh
- 234 **On the Gender Pay Gap in Germany**  
Stephan Brunow<sup>1</sup>, Michaela Fuchs<sup>2</sup>, Carsten Ochsen<sup>1</sup>  
<sup>1</sup>University of Applied Labour Studies (HdBA) Schwerin, Germany. <sup>2</sup>Institute for Employment Research (IAB), Germany
- 264 **Probability of migrating and universities in Peru**  
Carolina Guevara<sup>1</sup>, Marco Rios-Luna<sup>2</sup>, José Luis Herrera<sup>3</sup>  
<sup>1</sup>Departamento de Economía Cuantitativa, Escuela Politécnica Nacional, Ecuador. <sup>2</sup>Pontificia Universidad Católica del Perú, Peru. <sup>3</sup>ninguna, Peru
- 270 **Are linguistic policies a barrier to interregional migrations? A case of study in Catalonia.**  
Antonio di Paolo, Raul Ramos, Sebastian Ritter, Vicente Royuela  
 AQR-IREA Research Group - Universitat de Barcelona, Spain

## Business Meeting

*Long Range Planning Committee of the RSAI Meeting*

13:00-14:00 Tuesday, 9 April 2024

Meeting Room (1.13)

## LUNCH BREAK

13:00-14:00 Tuesday, 9 April 2024

## PLENARY SESSION II

14:00 - 15:30 Tuesday, 9 April 2024

Auditorium 1.06

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## Keynote Speech



*Modeling Spatial and Economic Impacts of Disasters*

**Prof. Eduardo Haddad**  
University of Sao Paulo, Brazil  
LARSA

## Coffee break

15:30-16:00 Tuesday, 9 April 2024

## DG Regio Policy Session

16:00-18:00 Tuesday, 9 April 2024

Auditorium (1.06)



### Cohesion Policy's contribution for solving legal obstacles in Cross-Border regions



**Chair:**

**Hans Westlund**

KTH Royal Institute of Technology, Sweden, RSAI President

#### What can be done to overcome border obstacle:



*The role of Cohesion Policy in solving border obstacles, and the future of Cohesion*

**Slawomir Tokarski**

Director, DG REGIO, European Commission

#### Importance of addressing border obstacles:



*Economic impacts of border obstacles, including Covid impacts as illustration of the exposure of border regions to obstacles*

**Roberta Capello**

Politecnico di Milano, Italy

#### What is being done:



*The b-solutions initiative, a mapping of cross-border obstacles in the EU*

**Ricardo Ferreira**

Border Focal Point coordinator, DG REGIO, European Commission

#### What else should be done:



*A new EU Regulation to Facilitate Cross-Border Solutions*

**Philippe Voiry**

French Ambassador for Intergovernmental Commissions, Cooperation and Border Issues

## PARALLEL SESSIONS (4)

16:00-18:00 Tuesday, 9 April 2024

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### SS02.2 Creating Shared Value (CSV) for Sustainable Regional Development

16:00-18:00 Tuesday, 9 April 2024

Room Kodály Zoltán (0.23)

Chair **Lily Kiminami**

- 64 Creating Shared Value in Urban Agriculture: Focusing on Shanghai, China**  
**Yingjie Ge<sup>1</sup>, Lily Kiminami<sup>2</sup>, Shinichi Furuzawa<sup>2</sup>**  
<sup>1</sup>Graduate School of Science and Technology, Niigata University, Japan. <sup>2</sup>Niigata University, Japan
- 159 Sustainable, family-friendly organizations in Hungary**  
**Anna Pátkai Bende**  
 Doctoral School of Regional- and Business Administration Sciences, Széchenyi István University, Hungary. Department of International Studies and Communication, Széchenyi István University, Hungary
- 224 Let's Change the World Together! – Co-Operation Possibilities of Social and Profit Oriented Enterprises**  
**Boglárka Barsi, Melinda Hajdu-Smahó**  
 Centre for Economic and Regional Studies, Hungary

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### SS11 Spatial use and tourism-related mobility in the light of Industry 4.0

16:00-18:00 Tuesday, 9 April 2024

Room Horváth Gyula (0.24)

Chair **Márk Miskolczi and László Kökény**

- 372 Revolutionizing Hospitality Operations: Harnessing the Power of Artificial Intelligence**  
**Bence Csapody, Márk Miskolczi**  
 Corvinus University of Budapest, Hungary
- 381 Disruptive impacts of artificial intelligence (AI) on the dynamics of tourism related mobility**  
**Márk Miskolczi**  
 Corvinus University of Budapest, Hungary
- 382 Only the staff know what the guest wants? Hotel management issues with artificial intelligence**  
**László Kökény**  
 Corvinus University of Budapest, Hungary
- 188 The resilient dimension of the “smart tourism”? A case study on urban areas**  
**Bogdan-Constantin Ibanescu, Gabriela Carmen Pascariu, Alexandru Banica, Ioana Bejenaru**  
 Alexandru Ioan Cuza University of Iasi, Romania

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## SS06.3 Cities and climate change

16:00-18:00 Tuesday, 9 April 2024

Room Kopátsy Sándor (0.51)

Chair **Zhifu Mi**

**179 Urban heat resilience assessment based on PSR framework**

**Qian Shi, Yuan Zhang, Chao Xiao**

School of Economics and Management, Tongji University, China

**261 Urban waste management reinforcement for combined environmental and socioeconomic benefits globally**

**Junnian Song<sup>1,2</sup>, Qilin Cao<sup>1</sup>, Wei Yang<sup>1,3</sup>, Zhifu Mi<sup>2</sup>**

<sup>1</sup>Jilin University, China. <sup>2</sup>University College London, United Kingdom. <sup>3</sup>Cardiff University, United Kingdom

**319 Financing the climate transition of cities – a financing model for Hungarian cities**

**Katalin Döbrönte**

International Business School, Budapest, Hungary

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## RS10.3 Regional development

16:00-18:00 Tuesday, 9 April 2024

Room Bartók Béla (1.14)

Chair **Emmanuelle Faure**

**37 Regions in Development Trap and the Exploitation of Endogenous Resources**

**István Finta**

KRTK, Hungary

**74 Explaining economic performances in the French employment zones: industrial relatedness and spatial externalities**

**Emmanuelle Faure**

Université Paris Nanterre, France

**80 Mitigate or Transfer? Impact of Inter-Regional Power Grid Infrastructure on Carbon Emissions in China**

**Ting Zhu<sup>1</sup>, Zhen Xu<sup>2</sup>**

<sup>1</sup>Peking University, China. <sup>2</sup>Qiyuan Lab, Beijing, China

**90 Unveiling Region-Specific Effects of EU Cohesion Policy**

**Ivana Biondic<sup>1,2</sup>, Jaksa Puljiz<sup>1</sup>**

<sup>1</sup>Institute for Development and International Relations, Croatia. <sup>2</sup>University of Innsbruck, Austria



## RS09.3 Regional and urban policy

16:00-18:00 Tuesday, 9 April 2024

Room Rechnitzer János (1.15)

Chair **Boris Portnov**

**185 Informal Land Buyers' Perspectives in Dilla City, Southern Ethiopia**

**Kibru Alemu Gedecho<sup>1,3</sup>, Bernadett Horvathne Kovacs<sup>2</sup>**

<sup>1</sup>Lecturer of Land Administration and Surveying Department, Ethiopia. <sup>2</sup>Associate Professor at Hungarian University of Agricultural and Life Sciences, Hungary. <sup>3</sup>PhD fellow at Hungarian University of Agricultural and Life Sciences, Hungary.

**189 Looking for trust in all the wrong places: Territorial predictors of trust in local authorities during a crisis**

**Bogdan-Constantin Ibanescu<sup>1</sup>, Mioara Cristea<sup>2</sup>, Alexandra Gheorghiu<sup>1</sup>, Ciprian Alupului<sup>1</sup>**

<sup>1</sup>Alexandru Ioan Cuza University of Iasi, Romania. <sup>2</sup>Heriot-Watt University, United Kingdom

**226 Investigating the Effect of Location on Urban Growth Worldwide: Contemporary Trends**

**Boris A. Portnov**

University of Haifa, Israel

## SS04.3 A New Toolbox for Novel Research in Regional, Urban and Spatial Studies

16:00-18:00 Tuesday, 9 April 2024

Room Csatári Bálint (1.45)

Chair **Simona Cafieri**

**221 Contrast and Brightness in Urban Spaces: Unveiling Patterns of Public Space Perception in Beijing's Historic Districts**

**Song Guo<sup>1</sup>, Chaoyi Huang<sup>1</sup>, Zhijian Miao<sup>2</sup>, Weimin Zhuang<sup>1</sup>**

<sup>1</sup>Tsinghua University, China. <sup>2</sup>Tsinghua University Architectural Design Research Institute Co., Ltd., China

**245 Mapping Regional Knowledge Flows in the Software Industry**

**Johannes Wachs**

Corvinus University Budapest, Hungary. Centre for Economic and Regional Studies, Hungary

**350 Do big cities, small rural areas or suburbs offer a better quality of life? In search of well-being with territorial intelligence**

**Simona Cafieri**

ISTAT, National Institute of Statistics, Italy

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## RS11.3 Rural development

16:00-18:00 Tuesday, 9 April 2024

Room Liszt Ferenc (2.09)

Chair **Damiaan Persyn**

- 281 **The territorial distribution of amputations and Peripheral Artery Disease endovascular treatment options in healthcare and social context in Hungary**  
**Csaba László Dózsa<sup>1</sup>, Petra Fadgyas-Freyler<sup>2</sup>**  
<sup>1</sup>University in Miskolc Health Sciences Faculty, Iceland. <sup>2</sup>Corvinus University Budapest, Hungary
- 340 **The Contested Role of Vocational Training Institutions in Reducing Regional Disadvantage in Hungary**  
**Magdolna Benke**  
University of Debrecen, CHERD, Hungary
- 341 **Life at the edge of the city size distribution**  
**Damiaan Persyn<sup>1,2</sup>, Christian Hundt<sup>1</sup>**  
<sup>1</sup>Thünen Institute, Germany. <sup>2</sup>University of Göttingen, Germany

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## RS07.3 Migration and regional labor markets

16:00-18:00 Tuesday, 9 April 2024

Room Varga Attila (2.10)

Chair **Gábor Lados**

- 279 **Telework in Portugal – regional trends and perspectives in post-COVID times**  
**Eduarda Marques da costa, Ana Louro, Pedro Franco, Paulo Morgado, Nuno Marques da Costa**  
CEG – Centre of Geographical Studies, Institute of Geography and Spatial Planning, Universidade de Lisboa and Associated Laboratory of Excellence TERRA, Portugal
- 289 **Wartime migration of the Hungarian minority from Ukraine**  
**Patrik Tátrai, Katalin Kovály, Ágnes Eróss**  
Geographical Institute, Research Centre for Astronomy and Earth Sciences, HUN-REN, Hungary
- 323 **Diversity of investments and international migration in Central and Eastern Europe**  
**Gabor Lados**  
CERS Institute for Regional Studies, Hungary

## RS03.3 Knowledge and innovation

16:00-18:00 Tuesday, 9 April 2024

Room Enyedi György (2.41)

Chair **Camilla Lenzi**

- 102 **The effect of high-speed railway connection on economic development in China's peripheral cities: A perspective of innovation capacity**  
**Shuang Lyu, Tieshan Sun**  
Peking University, China
- 207 **How Industry-University Research Collaboration Shape Innovative Performance? a Multilayer Network Approach on the European Scale.**  
**Tamás Sebestyén, Erik Braun, Dávid Bilicz, Zita Iloskics**  
University of Pécs, Hungary
- 236 **Unveiling automation anxiety and inequalities in cities**  
**Roberta Capello, Simona Ciappei, Camilla Lenzi**  
Politecnico di Milano, Italy
- 258 **Social network analysis and qualitative insights to understand learning processes within clusters. A case in the vegetable seed breeding industry in China**  
**Qiang Cao, André Torre**  
Université Paris-Saclay, UMR SAD-APT, INRA-Agroparistech, France

## Job Market Session

*Working for international institutions*

18:00-19:00 Tuesday, 9 April 2024

Room Kopátsy Sándor (0.51)

# Wednesday, 10 April 2024

## PARALLEL SESSIONS (5)

08:30-10:30 Wednesday, 10 April 2024

### SS09.1 Borders and Borderlands – Local, Regional, and Geopolitical Aspects

08:30-10:30 Wednesday, 10 April 2024

Room Kodály Zoltán (0.23)

Chair **Paolo Sospiro**

- 38 European Union strategies and their effects on the Adriatic-Ionian region ports**  
**Paolo Sospiro<sup>1,2</sup>, Marco Ciro Liscio<sup>1</sup>, Zeno Olimini<sup>2</sup>, Alice Amatore<sup>2</sup>**  
<sup>1</sup>Università Politecnica delle Marche, Italy. <sup>2</sup>EUAbout, Belgium
- 82 Internal state borders in the Western Balkans face new opportunities and challenges**  
**Zoltán Hajdú**  
 Scientific adviser Institute for Regional Studies, centre for Economic and Regional Studies Centre for, Hungary
- 88 Cross-Border Activity along the EU external borders of Hungary**  
**Klara Czimre<sup>1</sup>, Zsafia Szaniszló<sup>1</sup>, Andras Ricz<sup>2</sup>, Imre Nagy<sup>3</sup>**  
<sup>1</sup>Department of Social Geography and Regional Development Planning, Institute of Geosciences, Faculty of Science and Technology, University of Debrecen, Hungary. <sup>2</sup>Regional Sciences Association, Subotica, Serbia. <sup>3</sup>University of Novi Sad; Institute for Regional Studies of the CERS, Pécs, Hungary, Serbia

### SS08.1 Territorial disparities defined along rural-urban axes

08:30-10:30 Wednesday, 10 April 2024

Room Horváth Gyula (0.24)

Chair **Réka Horeczki**

- 62 Centralized governance and fuzzy spaces - the case of Hungary**  
**Ilona Pálné Kovács**  
 Hungarian research Network, Centre for Economic and Regional Studies, Hungary. President of the Hungarian Regional Science Association, Hungary
- 83 Local development prospects in CEECs after 2020: the case for a foundational approach**  
**Zsuzsanna Zsibók<sup>1</sup>, Ildikó Egyed<sup>2</sup>**  
<sup>1</sup>Centre for Economic and Regional Studies, Hungary. <sup>2</sup>Centre for Economic and Regional Studies, Iceland
- 85 The dimension of vulnerability in Hungarian small towns**  
**Réka Horeczki**  
 HUN-REN CERS Institute for Regional Studies, Hungary

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## SS16.1 Global Value Chains restructuring, regional dynamics and inequalities

08:30-10:30 Wednesday, 10 April 2024

Room Kopátsy Sándor (0.51)

Chair **Roberta Capello**

- 65 **Smile-and-go. Regional performance through Global Value Chains in Europe.**  
**Roberta Capello**, **Roberto Dellisanti**  
Politecnico di Milano, Italy
- 70 **The impact of the COVID-19 pandemic on global production networks driven by EU MNEs**  
**Simona Comi**<sup>1</sup>, **Mara Grasseni**<sup>2</sup>, **Laura Resmini**<sup>1</sup>  
<sup>1</sup>University of Milano-Bicocca, Italy. <sup>2</sup>University of Bergamo, Italy
- 309 **The Domestic and the International Value Chains of China's Manufacturing Industry and Their Interactive Relationships**  
**Xiumin Li**<sup>1</sup>, **Mingyin Chen**<sup>1</sup>, **Yunfeng Wang**<sup>2</sup>  
<sup>1</sup>School of Economics, Guangdong University of Technology, China. <sup>2</sup>School of Management, University of Sanya, China

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## SS03 Regional Development and Integration in Eurasia in the Belt and Road Era

08:30-10:30 Wednesday, 10 April 2024

Room Bartók Béla (1.14)

Chair **John Gibson**

- 24 **The effect of location package of historic cities' survival**  
**Boris A. Portnov**  
University of Haifa, Israel
- 49 **Luminosity and Local Economic Growth**  
**John Gibson**<sup>1</sup>, **Bonggeun Kim**<sup>2</sup>, **Chao Li**<sup>3</sup>  
<sup>1</sup>University of Waikato, New Zealand. <sup>2</sup>Seoul National University, Korea, Republic of. <sup>3</sup>University of Auckland, New Zealand
- 272 **Development of Southeast Asia in the Eurasian Era – The Challenges of Sustainability and Multipolarity**  
**Péter Klemensits**  
Senior Research Fellow, Eurasia Center, John von Neumann University, Hungary

## RS10.4 Regional development

08:30-10:30 Wednesday, 10 April 2024

Room Rechnitzer János (1.15)

Chair **Norbert Szabó**

**124 Development of electric vehicle battery industry and sustainable economic growth of Hungary**

**Liqiao Yang, Izabella Szakálné Kanó, Andreász Kosztopulosz**

Faculty of Economics and Business Administration, University of Szeged, Hungary

**162 Economic Complexity Index and Economic Development in Romania**

**Ibolya Török<sup>1</sup>, József Benedek<sup>1,2</sup>**

<sup>1</sup>Babes-Bolyai University, Romania. <sup>2</sup>University of Miskolc, Hungary

**164 Evaluating S3 interventions: An application of the GMR model in Centro region, Portugal**

**Norbert Szabó<sup>1</sup>, Krisztina Polónyi-Andor<sup>1</sup>, Tamás Sebestyén<sup>1</sup>, Hugo Pinto<sup>2</sup>**

<sup>1</sup>University of Pécs Faculty of Business and Economics, Hungary. <sup>2</sup>University of Coimbra, Portugal

## RS03.4 Knowledge and innovation

08:30-10:30 Wednesday, 10 April 2024

Room Csatári Bálint (1.45)

Chair **Stefan Rehak**

**105 Technological transformations, market power and regional inequalities in Europe**

**Roberta Capello, Camilla Lenzi, Elisa Panzera**

Politecnico di Milano, Italy

**357 The application living space is the future of the economy and society**

**Attila Kasznár**

John von Neumann University, Hungary

**368 Unraveling the Role of Universities in Shaping Regional Innovation: Insights from European Patent Data**

**Stefan Rehak, Miroslav Spurek**

University of Economics in Bratislava, Slovakia

**373 Presentation of Agricultural Knowledge and Innovation Systems - the role of knowledge transfer in (interactive) innovation**

**Anna Dunay, Ágnes Gáborné Jakab**

John von Neumann University, Hungary

## RS06.1 Methods in Regional Science and Urban Economics

08:30-10:30 Wednesday, 10 April 2024

Room Liszt Ferenc (2.09)

Chair **André Chagas**

- 16 **Perceptual Boundaries of Urban Areas and How to find them?**  
[Hongmou Zhang](#), [Jinghui Zhao](#), [Langrui Cai](#)  
 Peking University, China
- 20 **QDC: Quick Density Clustering - new algorithm for spatial point data**  
[Katarzyna Kopczewska](#)  
 University of Warsaw, Poland
- 29 **Difference-in-differences with endogenous network externalities**  
[Sandy Dall'Erba](#)<sup>1</sup>, [Andre Chagas](#)<sup>2</sup>, [William Ridley](#)<sup>1</sup>, [Yilan Xu](#)<sup>1</sup>  
<sup>1</sup>University of Illinois at Urbana-Champaign, USA. <sup>2</sup>Universidade de Sao Paulo, Brazil

## RS14.1 The spatial dimension of sustainable development

08:30-10:30 Wednesday, 10 April 2024

Room Varga Attila (2.10)

Chair **Mariann Szabó**

- 28 **When Sustainable Development Means Unsustainable Development Financing: The Case of Multilateral Development Partner Loans to Indonesia**  
[Muhammad A Ingratubun](#)  
 IPB University, Indonesia
- 42 **Examining the competitiveness and sustainability of the Southern Great Plain region**  
[Balazs Gyorgy Forman](#)<sup>1</sup>, [János Blahó](#)<sup>2</sup>, [Máriusz Dunai](#)<sup>3</sup>  
<sup>1</sup>John von Neumann University, Hungary. <sup>2</sup>University of Szeged, Hungary. <sup>3</sup>Stirling University, United Kingdom
- 182 **Revitalization of Urban Brownfield Sites in Hungary, 2014-2020**  
[Mariann Szabó](#)  
 Assistant Professor, Deputy Head of Department, Budapest University of Technology and Economics, Faculty of Economic and Social Sciences, Department of Environmental Economics and Sustainability, Hungary
- 359 **The future of electric cars in Hungary and the economic, social and spatial aspects of the transition**  
[Ferenc Sándor Forman](#), [Ádám Kardos](#), [Balazs Gyorgy Forman](#)  
 John von Neumann University, Hungary

## RS09.4 Regional and urban policy

08:30-10:30 Wednesday, 10 April 2024

Room Enyedi György (2.41)

Chair **Ugo Fratesi**

- 280 **The four waves of regional policy: Towards an era of trade-offs?**  
Ugo Fratesi  
 Politecnico di Milano, Italy
- 282 **Long-Term Assessment of the Readiness of EU Countries to Achieve the Goals of the 2030 Agenda through the Digital Transformation of the Local Government Economy**  
Dimitris Papandreou, Patricia Ikouta Mazza, Maria Mavri  
 Quantitative Methods Laboratory, Department of Business Administration, University of the Aegean, Greece
- 287 **Urban scaling, innovation growth and urban recapitulation between different administration in China**  
Yuxue Feng<sup>1</sup>, Guangdong Li<sup>2</sup>, Guoping Li<sup>1</sup>, Shuang Lyu<sup>1</sup>  
<sup>1</sup>School of Government, Peking University, China. <sup>2</sup>Institute of Geographic Sciences and Natural Resources Research, CAS, China
- 291 **The economic effect of child benefit on fertility in a two-sector OLG model**  
Akihiko Kaneko  
 Waseda University, Japan

## Coffee break

10:30-11:00 Wednesday, 10 April 2024

## PARALLEL SESSIONS (6)

11:00-13:00 Wednesday, 10 April 2024

## SS09.2 Borders and Borderlands – Local, Regional, and Geopolitical Aspects

11:00-13:00 Wednesday, 10 April 2024

Room Kodály Zoltán (0.23)

Chair **Szilárd Rácz**

- 39 **Navigating Change: Shaping the Future of EUSAIR - Trends, Priorities, and Policy Implications**  
Paolo Sospiro<sup>1,2</sup>, Marco Ciro Liscio<sup>1</sup>, Daniele Bregoli<sup>2</sup>, Alice Amatore<sup>2</sup>  
<sup>1</sup>Università Politecnica delle Marche, Italy. <sup>2</sup>EUAbout, Belgium
- 193 **Serbia on the Border between East and West - Urban and Geoeconomic Perspectives**  
Szilárd Rácz  
 Institute for Regional Studies, Hungary
- 251 **Safe zones in northern Syria: displacement, humanitarian, and security issues**  
Sára Gibárti  
 Centre for Economic and Regional Studies, Institute for Regional Studies, Hungary



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## SS08.2 Territorial disparities defined along rural-urban axes

11:00-13:00 Wednesday, 10 April 2024

Room Horváth Gyula (0.24)

Chair **Réka Horeczki**

- 86 Regional differences in mental health promotion in municipalities**  
[Erzsébet Ország-Novák](#)  
Ludovika University of Public Service, Hungary
- 122 Relationship between periphery and core countries. Path-dependence in regional and local development in Eastern and Central Europe. Spatial economic geographic projection of economic policy of the transitional economies**  
[Bódi Ferenc](#)  
HUN-REN Centre for Social Sciences, Hungarian Academy of Sciences Centre of Excellence, Institute for Political Science, Hungary
- 181 Poverty and suburbanization in urban-rural fringe**  
[Ádám Szalai](#), [Gábor László Vasárus](#)  
HUN-REN Centre for Economic and Regional Studies- Institute for Regional Studies, Hungary

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## SS16.2 Global Value Chains restructuring, regional dynamics and inequalities

11:00-13:00 Wednesday, 10 April 2024

Room Kopátsy Sándor (0.51)

Chair **Giovanni Perucca**

- 104 Regional Income Distributional Effects of GVC participation**  
[Roberta Capello](#), [Damares Lopes Afonso](#), [Giovanni Perucca](#)  
Politecnico di Milano, Italy
- 170 Regional backshoring as a source of manufacturing employment growth**  
[Roberta Capello](#), [Silvia Cerisola](#)  
Politecnico di Milano, Italy
- 386 Green dependence on the brink? Critical metals of the European Union's clean transition**  
[Gábor László Papp](#)  
John von Neumann University Doctoral School of Management and Business Administration, Hungary

## RS10.5 Regional development

11:00-13:00 Wednesday, 10 April 2024

Room Bartók Béla (1.14)

Chair **Gustavo Castro**

- 137 **Mines, fields, or classrooms: Effects of primary activities agglomeration on local human capital accumulation**  
Kenneth Castillo-Hidalgo  
 Universitat Autònoma de Barcelona, Spain. Universidad de Antofagasta, Chile
- 242 **Mapping the Evolution of Regional Digital Divide in Hungary**  
Zsófia Vas, Izabella Szakálné Kanó, Imre Lengyel  
 University of Szeged, Hungary
- 273 **A province level Input-Output approach to assess the economic impacts of Morocco's 2023 earthquake**  
Eduardo Haddad<sup>1</sup>, Mahmoud Arbouch<sup>2</sup>, Abdelaaziz Ait Ali<sup>2</sup>, Hamza Saoudi<sup>2</sup>  
<sup>1</sup>Policy Center for the New South, Brazil. <sup>2</sup>Policy Center for the New South, Morocco
- 290 **Regional convergence of skills and schooling in Brazilian manufacturing**  
Gustavo Castro, Carlos Azzoni  
 University of São Paulo, Brazil

## RS03.5 Knowledge and innovation

11:00-13:00 Wednesday, 10 April 2024

Room Rechnitzer János (1.15)

Chair **Éva Pálinkó**

- 375 **Quality management as the engine of competitiveness in the Hungarian SME sector**  
Csaba Bálint Illés, Csaba Szuda  
 John von Neumann University Doctoral School of Management and Business Administration, Hungary
- 378 **Academia-Industry Relationships in Hungary – Institutional Performance and the Role in Researcher Career Path**  
Éva Pálinkó<sup>1,2</sup>, Norbert Katona<sup>1</sup>, Gergő Bendegúz Békési<sup>1</sup>  
<sup>1</sup>Neumann János Egyetem, Hungary. <sup>2</sup>Magyar Tudományos Akadémia Könyvtár és Információs Központ, Hungary
- 383 **Multidimensional evaluation of the Agricultural Knowledge and Innovation System (AKIS)**  
Lívია Kránitz, Pál Goda  
 Institute of Agricultural Economics, Hungary

## VN01 Some technical issues in the development of sustainable mobility

11:00-13:00 Wednesday, 10 April 2024

Room Csatári Bálint (1.45)

Chair **Johanyák Zsolt Csaba**

- 403 Sustainability and environmental aspects of the increased adhesive joint strength of a surface treated metals and polymers**  
**Benjamin Körömi, Peter I. Kovács, Ferenc Tajti, Miklos Berczeli**  
 Department of Innovative Vehicles and Materials, GAMF Faculty of Engineering and Computer Science, John von Neumann University, Hungary
- 407 Improving Intrusion Detection: Picking the Best Features for Behavior-Based Systems**  
**Göcs László, Johanyák Zsolt Csaba**  
 GAMF Faculty of Engineering and Computer Science, John von Neumann University, Hungary
- 408 Mechanical properties of recycled polypropylene nanocomposites in function of time and temperature**  
**Gerse Péter**  
 Department of Innovative Vehicles and Materials, GAMF Faculty of Engineering and Computer Science, John von Neumann University, Hungary

## RS14.2 The spatial dimension of sustainable development

11:00-13:00 Wednesday, 10 April 2024

Room Liszt Ferenc (2.09)

Chair **Damares Lopes Afonso**

- 58 Land and deforestation embodied in trade: an analysis for Brazilian biomes**  
**Damares Lopes Afonso<sup>1</sup>, Fernando Salgueiro Perobelli<sup>2</sup>, Weslem Rodrigues Faria<sup>2</sup>**  
<sup>1</sup>Postdoctoral Researcher - Politecnico di Milano, Italy. <sup>2</sup>Federal University of Juiz de Fora, Brazil
- 59 Sustainable Model of Corporate Embeddedness: Good Practices of Small and Medium-Sized Family Companies**  
**Zsuzsanna Pálffy**  
 Széchenyi István University Apáczai Csere János Faculty of Humanities, Education and Social Sciences, Department of International Studies and Communication, Hungary.
- 118 Beyond GDP: wealth and sustainability of developing and developed economies**  
**Antal Ferenc Kovács**  
 John von Neumann University, Hungary
- 232 Fostering energy transition: How local authorities can overcome challenges in biogas projects**  
**Sebastien Bourdin, Hugo Delcayre**  
 EM Normandie Business School, France

## RS09.5 Regional and urban policy

11:00-13:00 Wednesday, 10 April 2024

Room Varga Attila (2.10)

Chair **Büşra Güven Güney**

- 303 Analyzing the Multifaceted Impact of E-Commerce: A Conceptual Framework across Different Urban Planning Scales**  
**Büşra Güven Güney, Mehmet Ali Yüzer**  
 Istanbul Technical University, Turkey
- 306 Unintended Consequence of Historic Preservation on Firms' Output: Evidence from the Awarding of the Historic City Title in China**  
**Ruiming Liu<sup>1</sup>, Haosheng Yan<sup>2</sup>, Zebang Zhang<sup>3</sup>**  
<sup>1</sup>Renmin University of China, China. <sup>2</sup>Central University of Finance and Economics, China. <sup>3</sup>Tsinghua University, China
- 324 Blue Sky or Bright Light? An Empirical Analysis for a Campaign-Style Environmental Enforcement in China**  
**Bin Hu**  
 Tsinghua University, China
- 325 How cities are prepared for accepting autonomous vehicles?**  
**Melinda Smahó**  
 HUN-REN Centre for Economic and Regional Studies Institute for Regional Studies West-Hungarian Research Institute, Hungary. Széchenyi István University, Hungary

## RS06.2 Methods in Regional Science and Urban Economics

11:00-13:00 Wednesday, 10 April 2024

Room Enyedi György (2.41)

Chair **Yankai Miao**

- 248 Measuring and analysing the competitiveness of Hungarian urban regions.**  
**László Szerb, Miklós Hornyák, Zsófia Fehér Krabatné, András Rideg**  
 University of Pécs, Hungary
- 259 Local Impact Factor (LIF) Analysis for Spatial Autocorrelation**  
**Vincenzo Nardelli, Giuseppe Arbia**  
 Università Cattolica del Sacro Cuore, Italy
- 300 Escaping from the middle-income trap: An historical perspective over the European regions 1900-2015**  
**Alicia Gomez-Tello, María Teresa Sanchis, Maria Jose Murgui**  
 Universitat de Valencia, Spain
- 361 Characteristics and Mechanisms of Landscape Localization Evolution in South Jiangsu Small Towns from the Perspective of Rural-Urban-Wild Interaction – Taking Wujiang District, Suzhou as an Example**  
**yankai Miao<sup>1,2</sup>, Alessandro Bianchi<sup>2</sup>, lin zhang<sup>1</sup>**  
<sup>1</sup>Tongji university, China. <sup>2</sup>Politecnico di Milano, Italy

## Business Meeting

### *RSAI Council Meeting*

13:00-14:00 Tuesday, 10 April 2024

Board Meeting Room (2.08)

## LUNCH BREAK

13:00-14:00 Wednesday, 10 April 2024

## PLENARY SESSION III

14:00 - 15:30 Wednesday, 10 April 2024

Auditorium (1.06)

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## Keynote Speech



*Urban Housing Development in Korea from a Comparative Perspective*

**Prof. Hee-Jung Jun**

Sungkyunkwan University, Korea  
PRSCO

## Coffee break

15:30-16:00 Wednesday, 10 April 2024

## JRC-OECD Science for Policy Session

16:00-18:00 Wednesday, 10 April 2024  
Auditorium (1.06)



### Novelties in data, novelties in methods: What's new, what's next



**Chair:**

**Andrea Conte**

Team Leader / Economist at European Commission - Joint Research Centre

#### Panelists:



**Rudiger Ahrend**

Head of the Economic  
Analysis, Data and  
Statistics Division in the  
OECD



**Eva Laczka**

Deputy President for  
Economic Statistics,  
Hungarian Statistical  
Office, Hungary



**Eduardo Haddad**

University of Sao Paulo,  
Brazil



**Katarzyna  
Kopczewska**

University of Warsaw,  
Poland

## PARALLEL SESSIONS (7)

16:00-18:00 Wednesday, 10 April 2024

### SS09.3 Borders and Borderlands – Local, Regional, and Geopolitical Aspects

16:00-18:00 Wednesday, 10 April 2024

Room Kodály Zoltán (0.23)

Chair **Péter Reményi**

293 **Vojvodina as a borderland**

[Péter Reményi](#)

Institute for Regional Studies CERS, Hungary. University of Pécs, Hungary

321 **Economic and demographic challenges in border areas: the case of Central Europe**

[Gabor Lados](#), [Reka Horeczki](#), [David Nagy](#)

CERS Institute for Regional Studies, Hungary

326 **Depopulation in the borderland of Canton 10 in Bosnia and Herzegovina**

[Haris Gekić](#), [Aida Bidžan-Gekić](#)

University of Sarajevo - Faculty of Science, Department of Geography, Bosnia and Herzegovina

## SS17 Towards local development through a sustainable valorization of cultural heritage: the role of tourism

16:00-18:00 Wednesday, 10 April 2024

Room Horváth Gyula (0.24)

Chair **Silvia Cerisola**

- 111 Museums in times of crisis: Analysis of the impact of Covid-19 on the Italian museum sector**  
Francesco Angelini, Cristina Bernini, Federica Galli  
 University of Bologna, Department of Statistical Sciences, Italy
- 126 Investigating Overtourism and Its Economic Effects: Evidence from Italy**  
Martina Dattilo, Giovanna Segre  
 University of Turin, Department of Economics and Statistics "Cognetti de Martiis", Italy
- 229 Knowledge Spillover Effects for Enhancing Authentic Tourism – the case of Interreg EUROPE Local Flavours Project**  
Mariann Szabó  
 Assistant Professor, Deputy Head of Department, Budapest University of Technology and Economics, Faculty of Economic and Social Sciences, Department of Environmental Economics and Sustainability, Hungary
- 247 Theoretical and empirical considerations of the Creative Cities Sustainable Regions programme in West Hungary**  
Ákos Jakobi  
 Eötvös Loránd University, Department of Regional Science, Hungary. Institute of Advanced Studies Kőszeg, Hungary

## RS08 Real estate and housing

16:00-18:00 Wednesday, 10 April 2024

Room Kopátsy Sándor (0.51)

Chair **Isabelle Nilsson**

- 3 Import competition and domestic transport costs**  
Andrea Caragliu<sup>1</sup>, Michiel Gerritse<sup>2</sup>  
<sup>1</sup>Politecnico di Milano, Italy. <sup>2</sup>Erasmus University Rotterdam, Netherlands
- 18 The Impact of COVID-19 on the German Real Estate Market: Evidence Based on Spatial Statistical Models**  
Andree Ehlert<sup>1</sup>, Andreas Lagemann<sup>2</sup>, Jan Wedemeier<sup>3</sup>  
<sup>1</sup>Harz University of Applied Sciences, Germany. <sup>2</sup>Helmut-Schmidt University, Germany. <sup>3</sup>Hamburg Institute of International Economics (HWWI), Germany
- 125 Exploring the association between the marketing of properties and neighborhood change**  
Isabelle Nilsson<sup>1</sup>, Elizabeth Delmelle<sup>2</sup>  
<sup>1</sup>University of North Carolina at Charlotte, USA. <sup>2</sup>University of Pennsylvania, USA

## SS08.3 Territorial disparities defined along rural-urban axes

16:00-18:00 Wednesday, 10 April 2024

Room Bartók Béla (1.14)

Chair **Réka Horeczki**

- 286 **Changes in the world of work since the COVID-19 epidemic in rural areas in Hungary**  
[Katalin Liptak](#)  
 University of Miskolc, Hungary
- 294 **On the areas being left-behind**  
[Ana Viñuela](#)  
 University of Oviedo, Spain
- 370 **The regional inequalities between the Budapest metropolitan region and the large urban regions in Hungary**  
[Júlia Schuchmann](#)  
 PhD, lecturer at John Von Neumann University, Economic Geography and Urban Marketing Knowledge Center, Hungary

## RS03.6 Knowledge and innovation

16:00-18:00 Wednesday, 10 April 2024

Room Rechnitzer János (1.15)

Chair **Dorottya Teveli-Horváth**

- 260 **Institutional Relaxation, University Knowledge Spillover, and Start-up Formation: Evidence from Amendments to the Law of Promoting the Transformation of Scientific and Technological Achievements**  
[Bingwei Li](#)<sup>1</sup>, [Shanshan Li](#)<sup>2</sup>, [Haosheng Yan](#)<sup>2</sup>  
<sup>1</sup>School of Insurance, University of International Business and Economics, China. <sup>2</sup>Institute for Finance and Economics, Central University of Finance and Economics, China
- 390 **Operational logics of municipalities - the case of downtown revitalisation in Hungary**  
[Dorottya Teveli-Horváth](#)  
 Corvinus University of Budapest, Hungary
- 392 **Unequal power relations within European research collaboration networks - an uneven development perspective**  
[Gergely Tagai](#)  
 HUN-REN Centre for Economic and Regional Studies, Hungary
- 399 **Towards a “large model” for predicting regional industrial growth from the perspective of industry relatedness**  
[Lun Liu](#)  
 Peking University, China



## RS14.3 The spatial dimension of sustainable development

16:00-18:00 Wednesday, 10 April 2024

Room Csatári Bálint (1.45)

Chair **Josep Maria Arauzo Carod**

- 53 **Arguments for the circular economy coming along with requirements of bold geopolitical remodelling at the global scale**  
Mihály Dombi<sup>1</sup>, Orsolya Szendrey<sup>2</sup>  
<sup>1</sup>Budapest Business University, Hungary. <sup>2</sup>University of Debrecen, Hungary
- 276 **What Drives the Individual's Perception of the Ecological Transition? Evidence from Spain**  
Josep-Maria Arauzo-Carod<sup>1</sup>, Maria Llop<sup>1</sup>, Miguel Manjón-Antolín<sup>2</sup>  
<sup>1</sup>Universitat Rovira i Virgili (ECO-SOS & IU-RESCAT), Spain. <sup>2</sup>Universitat Rovira i Virgili (ECO-SOS), Spain
- 277 **Spatial Dimension of Ecological Transition and the Social Acceptance of Energy Communities**  
Josep-Maria Arauzo-Carod<sup>1</sup>, Jordi Jaria<sup>2</sup>, Miguel Manjón-Antolín<sup>3</sup>  
<sup>1</sup>Universitat Rovira i Virgili (ECO-SOS & IU-RESCAT), Spain. <sup>2</sup>Universitat Rovira i Virgili (CEDAT & IU-RESCAT), Spain.  
<sup>3</sup>Universitat Rovira i Virgili (ECO-SOS), Spain
- 369 **Research on the renewal of Block Building Stock Based on K-means Clustering Method**  
Yueheng Tong<sup>1,2</sup>, Wei Yang<sup>1</sup>  
<sup>1</sup>Tianjin University, China. <sup>2</sup>Polytechnic University of Milan, Italy

## RS09.6 Regional and urban policy

16:00-18:00 Wednesday, 10 April 2024

Room Liszt Ferenc (2.09)

Chair **Zeynep Elburz**

- 328 **Kecskemét is the economic center of the Southern Great Plain**  
Anna Ábrahám, Csanád Horváth, Péter Tópercer  
 John von Neumann University, Hungary
- 346 **Beyond Economic Metrics: Assessing the Multi-Faceted Influences Shaping the Size of Urban Areas**  
Vladislav Marjanović, Jelena J. Stanković, Ivana Marjanović, Marina Stanojević, Dragana Radenković-Jocić  
 University of Niš, Faculty of Economics, Serbia
- 374 **Transforming Ways of Life in the Changing Suburbs – Case of Budapest**  
János B. Kocsis  
 Corvinus University of Budapest, Hungary
- 397 **Spiky Metropolitan Landscapes: An Urbanometric Analysis of Growing Agglomerations**  
Zeynep Elburz<sup>1</sup>, Karima Kourtiti<sup>2</sup>, Peter Nijkamp<sup>2</sup>  
<sup>1</sup>Izmir Institute of Technology, Turkey. <sup>2</sup>Open Universiteit, Netherlands

## RS06.3 Methods in Regional Science and Urban Economics

16:00-18:00 Wednesday, 10 April 2024

Room Varga Attila (2.10)

Chair **Hiroyuki Shibusawa**

- 32 **A Study on the development of a dynamic spatial IO model and its application to Japan's regional economy**  
[Hiroyuki Shibusawa](#), [Mingji Cui](#)  
 Toyohashi University of Technology, Japan
- 262 **Spatial analysis of crime in Ecuador**  
[Carolina Guevara](#)<sup>1</sup>, [Stefany Llumiquirena](#)<sup>2</sup>, [Melany Tulcán](#)<sup>2</sup>, [Miguel Flores](#)<sup>3</sup>  
<sup>1</sup>Departamento de Economía Cuantitativa, Escuela Politécnica Nacional, Ecuador. <sup>2</sup>Escuela Politécnica Nacional, Ecuador.  
<sup>3</sup>Tecnológico de Monterrey, Mexico
- 333 **Territorial levels of SMEs' activities – analyses of firms in Győr, Hungary**  
[Adrienn Reisinger](#)  
 Széchenyi István University, Hungary
- 364 **The role of chance, luck, uncertainty, risks, asymmetric information, imperfect information in regional development**  
[Ferenc Sándor Forman](#)<sup>1</sup>, [Balázs Attila Forman](#)<sup>2</sup>, [Balazs Gyorgy Forman](#)<sup>1</sup>  
<sup>1</sup>John von Neumann University, Hungary. <sup>2</sup>Eötvös Lóránd University of Sciences, Hungary

## RS10.6 Regional development

16:00-18:00 Wednesday, 10 April 2024

Room Enyedi György (2.41)

Chair **Pál Szabó**

- 151 **The economic situation of regions in Europe after the pandemic, with a special focus on Hungary**  
[Pál Szabó](#)  
 Eötvös Loránd University TTK FFI Department of Regional Science, Hungary
- 310 **Research on the impact of urban space governance on green economic efficiency from the perspective of ecological civilization – A case study of Beijing-Tianjin-Hebei and surrounding areas as an example**  
[Xiao-Yan He](#), [Guo-Ping Li](#), [Yang Zhao](#)  
 Peking University, China
- 367 **The role of human capital and digitalization in building regional economic resilience**  
[Cristian Incaltarau](#)  
 Alexandru Ioan Cuza University of Iasi, Romania

## Gala Dinner

RSAI Awards Ceremony

19:00-22:00 Wednesday, 10 April 2024

Four Points By Sheraton Kecskemét Hotel

# Thursday, 11 April 2024

## PARALLEL SESSIONS (8)

08:30-10:30 Thursday, 11 April 2024

### RS12.1 Spatial implications of climate and environmental change

08:30-10:30 Thursday, 11 April 2024

Room Kodály Zoltán (0.23)

Chair **Akio Matsumoto**

**22 Connection between agriculture, landscape carrying capacity and climate change in the Danube-Tisza Interfluvium, Hungary**

**Edit Hoyk**

John von Neumann University, Faculty of Horticulture and Rural Development, Hungary. Hungarian Research Network, Centre for Economic and Regional Studies, Hungary

**96 "Fighting Fires with H2O": Understanding Feature Contribution to Forest Fires in the Carpathians**

**Melinda Manczinger<sup>1</sup>, László Kovács<sup>2</sup>, Tibor Kovács<sup>3</sup>**

<sup>1</sup>PhD student, Doctoral School of Economics, Business and Informatics, Corvinus University of Budapest, Hungary. <sup>2</sup>Institute of Data Analytics and Information Systems, Department of Statistics, Corvinus University of Budapest, Hungary. <sup>3</sup>Institute of Informatics, Department of Information Systems, Corvinus University of Budapest, Hungary

**98 Control on Nonpoint Source Pollution under Uncertain Welfare**

**Akio Matsumoto**

Chuo University, Japan

## SS25.1 The Regional Science Academy Special Academic Session "Wellbeing and City Love"

08:30-10:30 Thursday, 11 April 2024

The Regional Science Academy



Room Horváth Gyula (0.24)

Zoom link: <https://us02web.zoom.us/j/81309847916?pwd=MUs3ZnZYNGlHWFlaSVoyclFEdUo4Zz09>

(Meeting ID: 813 0984 7916; Passcode: 396273)

Chair **Karima Kourtit**

### A The Geography of Happiness: An Overview

**Peter Nijkamp<sup>1</sup>, Karima Kourtit<sup>1</sup>, Umut Turk<sup>2</sup>, Mia Wahlström<sup>3</sup>**

<sup>1</sup>Open University, Heerlen, The Netherlands. Alexandru Ioan Cuza University, Iasi, Romania. University of Rijeka, Rijeka, Croatia. <sup>2</sup>Abdullah Gul University, Turkey. <sup>3</sup>Uppsala University, Sweden

### B Balancing Bliss: Understanding Spatial Disparities in Subjective Well-Being

**Martijn Burger**

Open University of the Netherlands, Netherlands

### C Unravelling the Geography and Spatial Mismatch of Individual and Political Discontent in the UK

**Camila Lenzi, Giovanni Perucca**

Politecnico di Milano, Italy

### D Shall I Stay or Shall I Go? Urban-Rural Dilemma's for Quality of Life and Satisfaction

**Cristian Incaltarau<sup>1</sup>, Karima Kourtit<sup>1,2</sup>, Gabriela Carmen Pascariu<sup>1</sup>**

<sup>1</sup>Alexandru Ioan Cuza University of Iasi, Romania; <sup>2</sup>Open University, Heerlen, The Netherlands.. University of Rijeka, Rijeka, Croatia.

## SS05.1 EU Cohesion Policy in the age of permacrisis. Embracing resilience, transition and growth

08:30-10:30 Thursday, 11 April 2024

Room Kopátsy Sándor (0.51)

Chair **Daniela L. Constantin**

### 89 A Spatial Justice-Based Perspective on Territorial Inequalities. Scenarios for the Future of the EU's Cohesion Policy

**Daniela L. Constantin**

Bucharest University of Economic Studies, Romania

### 152 The Role of Public-Private Partnerships for a Sustainable Development through EU Cohesion Policy after Post War Reconstruction

**Carmen Nastase<sup>1</sup>, Nicoleta Sîrghi<sup>2</sup>, Iuliana Petrovan<sup>1</sup>**

<sup>1</sup>Ștefan cel Mare" University of Suceava, Romania. <sup>2</sup>West University of Timișoara, Romania

### 192 Using Spatial Analysis to Assess Cohesion for Sustainable Development Goals

**Elena-Maria Prada, Erika Marin, Smaranda Cimpoeru**

Bucharest University of Economics Studies, Romania

### 194 Spatial variations of the unemployment rate's determinants at regional European level

**Smaranda Cimpoeru, Elena Prada**

Bucharest University of Economic Studies, Romania

## SS12 Creative cities and regions in Europe

08:30-10:30 Thursday, 11 April 2024

Room Bartók Béla

Chair **Dávid Fekete**

- 91 **Measuring creativity: Lessons of the Cultural and Creative Cities Monitor**  
Dávid Fekete  
 Széchenyi István University, Department of Regional Studies and Rural Development, Hungary
- 128 **The Relationship between Győr and the Benedictine Community in the Light of Creativity. Exploring New Regional Relationships Using the Theory of Territorial Capital**  
Mihály Dömötör  
 Széchenyi István Egyetem, Hungary
- 150 **Types of the creative city**  
Szabolcs Morvay  
 Széchenyi István University, Hungary
- 332 **European Capital of Culture 2010/2023 – Implementation, Comparative Analysis and Lessons Learned of Two Dance Projects/ Festivals (2010 Pécs / 2023 Veszprém)**  
Zsuzsanna Kara  
 PhD Student, Doctoral School of Regional Sciences and Business Administration, Széchenyi István University, Hungary
- 363 **Development Visions for the Cultural and Creative Sector in Budapest in the Period 2008-2030**  
Edina Lőrincz  
 Széchenyi István University, Doctoral School of Regional and Economic Sciences, Győr, Hungary

## RS10.7 Regional development

08:30-10:30 Thursday, 11 April 2024

Room Rechnitzer János (1.15)

Chair **Kosyo Stoychev**

- 334 **The effect of cultural capital on income distribution**  
Tsuyoshi Shinozaki  
 Tohoku Gakuin University, Japan
- 342 **Just Transition, Smart Specialization and Re-industrialization: Perspectives for Bulgaria**  
Kosyo Stoychev  
 BRSA, Sofia University, Bulgaria
- 355 **Sustainable cultural policy in regional government after the European Capital of Culture project**  
Lukas Alsys<sup>1,2</sup>, Milda Rutkauskaitė<sup>1,2</sup>  
<sup>1</sup>Kaunas HEI, Lithuania. <sup>2</sup>Vytautas Magnus University, Lithuania
- 398 **An Update on the Economic Impact Analysis for the Development Projects of March Joint Powers Authority in Southern California**  
Qisheng Pan  
 USDOT Tier-1 University Transportation Center (UTC), USA

## SS01 The spatial, regional and urban dimensions of circular economy

08:30-10:30 Thursday, 11 April 2024

Room Csatári Bálint (1.45)

Chair **Sébastien Bourdin**

- 9 **How are Europe's cities and regions contributing to Europe's green transition by boosting the circular economy?**  
[Sébastien Bourdin](#), [Nicolas Jacquet](#)  
 EM Normandie Business School, France
- 69 **Platform-attracted urban places - a Hungarian case study about the spatial dimensions**  
[Dóra Bálint](#)  
 HUN-REN Centre for Economic and Regional Studies, Hungary
- 146 **Assessing and Comparing the Circular Economy Performance of Small Island Developing States**  
[Chloë Francomme](#)  
 Université de La Réunion, France
- 202 **Using an Inverse Planning Approach in the Aspect of Green Transition: Index Theory Study Using the Konüs Index and the Neo-Walrasian Equilibrium for Biofuels and Green Energy in the Regional Space**  
[Tünde Olexó](#)  
 Széchenyi István University, Doctoral School of Regional- and Business Administration Sciences, Hungary

## RS19.1 Green economy and complexity of socio-ecosystems

08:30-10:30 Thursday, 11 April 2024

Room Liszt Ferenc (2.09)

Chair **María García-Alcober**

- 156 **European SMEs towards a Green Economy**  
[María P. García-Alcober](#), [Ana Isabel Mateos-Ansótegui](#), [María Teresa Pastor Gosálbez](#)  
 University CEU Cardenal Herrera, Spain
- 308 **Exploring the optimal policy pathway for maximizing the economic, environmental and energy value of biomass resources with a dynamic simulation model**  
[Xiaoxiao Hao](#)  
 China university of Geosciences in Beijing, China
- 312 **Wind, Solar, and Beyond: Mapping the Progress of Sustainable Energy Transition in Jordan**  
[Hiba Shakhashiro](#), [Mária Szalmáné Csete](#)  
 Department of Environmental Economics and Sustainability, Faculty of Economic and Social Sciences, Budapest University of Technology and Economics, Hungary

## SS13.1 Ethnic issues in a regional context: the phenomenon, problematics, and manifestations of ethnoregionalism

08:30-10:30 Thursday, 11 April 2024

Room Varga Attila (2.10)

Chair **Nóra Baranyai**

Session organized by HUN-REN CERS, NSKI (RINS)

- 120 Changes in ethnic structure and political representation in Upper Silesia**  
Nóra Baranyai  
 Institute for Regional Studies, Centre for Economic and Regional Studies, Hungary
- 336 Role of interpersonal support in community resilience**  
András Molnár  
 University of Pécs, Hungary
- 141 Problem or Potential? – Native ethnic minority communities in development and spatial policies**  
Gábor Mozga<sup>1,2</sup>, Márton Péti<sup>1,3</sup>  
<sup>1</sup>Research Institute for National Strategy, Hungary. <sup>2</sup>Corvinus University of Budapest, Hungary. <sup>3</sup>University of Pannonia, Hungary
- 187 Ethnoregionalism and tertiary education – The educational positions of Hungarian ethnoregional communities in Central and Eastern Europe**  
Mátyás Borbély  
 Research Institute for National Strategy, Hungary. Corvinus University of Budapest, Hungary

## RS16.1 Tourism

08:30-10:30 Thursday, 11 April 2024

Room Enyedi György (2.41)

Chair **Krisztina Balázs-Bécsi**

- 13 Strategic dimensions of domestic wine marketing**  
Judit Tessényi, Norbert Katona  
 Neumann János Egyetem, Hungary
- 87 Examining the results of the developments of Hungarian National Palace and Castle Program in the light of sustainability**  
Krisztina Balázs-Bécsi  
 University of Pécs - PhD student, Hungary
- 227 Resilient Tourism Regions in Central Europe – a Classification Approach**  
Zsófia Turnaj, Gábor Koncz, Róbert Barna, Bernadett Horváthné Kovács  
 Hungarian University of Agriculture and Life Sciences, Hungary

## Coffee break

10:30-11:00 Thursday, 11 April 2024

## PARALLEL SESSIONS (9)

11:00-13:00 Thursday, 11 April 2024

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### SS15 Methodological challenges of statistics

11:00-13:00 Thursday, 11 April 2024

Room Kodály Zoltán (0.23)

Chair **Eva Laczka**

- 130 Methodological problems of measuring territorial happiness**  
**Boglárka Barsi**  
Centre for Economic and Regional Studies, Hungary
- 174 Poverty measures at the regional level**  
**Mónika Galambosné Tiszberger, Hanga Bilicz**  
University of Pécs, Faculty of Business and Economics, Hungary
- 180 Creating demographic projections for Hungary using agent-based modelling – first results from the 2022 population census**  
**Iózsef Lennert**  
HUN-REN Közgazdaság- és Regionális Tudományi Kutatóközpont, Hungary
- 217 Hierarchical Cluster-Analysis of the European Regions**  
**Bánhalmi Árpád<sup>1</sup>, Benoist György<sup>2</sup>**  
<sup>1</sup>Budapest Business University - Faculty of International Management and Business, Hungary. <sup>2</sup>Budapest Business University - Faculty of Finance and Accountancy, Hungary
- 231 Relations of prime and Fibonacci numbers and practical implementations in risk management**  
**Peter Kovacs, Tamas Racz, Gabor David Kiss**  
Faculty of Economics and Business Administration, University of Szeged, Hungary



## SS25.2 The Regional Science Academy Special Academic Session "Wellbeing and City Love"

11:00-13:00 Thursday, 11 April 2024

The Regional Science Academy



Room Horváth Gyula (0.24)

Zoom link: <https://us02web.zoom.us/j/81309847916?pwd=MUs3ZnZYNGlHWFlaSVoyclFEdUo4Zz09>

(Meeting ID: 813 0984 7916; Passcode: 396273)

Chair **Carolina Guevara**

### E Amenities and migration patterns in Ecuador

**Carolina Guevara-Rosero<sup>1</sup>, Cristhian Rosales<sup>2</sup>, Daniela Sandoval<sup>2</sup>, Diego del Pozo<sup>2</sup>, Yasmín Salazar<sup>1</sup>**

<sup>1</sup>Departamento de Economía Cuantitativa, Escuela politécnica nacional, Ecuador. <sup>2</sup>Instituto Ecuatoriano de estadísticas y censos, Ecuador.

### F Well-being and Geography: Analysis of Regional Well-being with Spillover Effects

**Zeynep Elburz**

Izmir Institute of Technology, Turkey

### G Cityphilia and Cityphobia: A Multi-Scalar Search for City Love In Flanders

**Bart Neuts<sup>1</sup>, Mia Wahlström<sup>2</sup>, Karima Kourtit<sup>3</sup>, Peter Nijkamp<sup>3</sup>**

<sup>1</sup>KU Leuven, Leuven, Belgium. <sup>2</sup>Uppsala University, Sweden. <sup>3</sup>Open University, Heerlen, The Netherlands. Alexandru Ioan Cuza University, Iasi, Romania. University of Rijeka, Rijeka, Croatia.

### H Equitable and sustainable well-being: a multidimensional approach to measure the progress of the Regions'

**Simona Cafieri**

ISTAT, National Institute of Statistics, Italy

### I Urban competitiveness in Ecuador, 2010

**Tania Torres**

Universidad Particular de Loja (UTPL), Ecuador.

## SS05.2 EU Cohesion Policy in the age of permacrisis. Embracing resilience, transition and growth

11:00-13:00 Thursday, 11 April 2024

Room Kopátsy Sándor (0.51)

Chair **Erika Marin**

### 200 The Impact of Country Risk on FDI in European Countries

**Simona Andreea Apostu, Erika Marin**

Bucharest University of Economic Studies, Romania

### 254 Approaches to the Sustainability of the European Regions Based on the New Energy Sustainability Model for the Transition to Climate Neutrality

**Romeo Victor Ionescu<sup>1</sup>, Monica Laura Zlati<sup>1</sup>, Valentin Marian Antohi<sup>1,2</sup>, Costinela Fortea<sup>1</sup>**

<sup>1</sup>Dunarea de Jos University of Galati, Romania. <sup>2</sup>Transilvania University of Brasov, Romania

### 353 Territorial Cohesion in less developed regions: Questioning the effectiveness of Smart Specialisation Policies

**József Benedek**

Babeş-Bolyai University Cluj-Napoca, Romania. University of Miskolc, Hungary

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## RS19.2 Green economy and complexity of socio-ecosystems

11:00-13:00 Thursday, 11 April 2024

Room Bartók Béla (1.14)

Chair **Tünde Olexò**

- 56 **How economic rent-seeking constraints the sustainability transition through spatial processes**  
Mihály Dombi  
Budapest Business University, Hungary
- 71 **The “dark green” side of economic complexity: evidence from Italian NUTS-3 regions**  
Roberto Antonietti, Pietro Luzzago  
University of Padova, Italy
- 204 **Measuring Sustainability Using the Konüs Index, and Fuzzy-Konüs Index in the Context of the Bible Based Ethical Legislation System**  
Tünde Olexó  
Széchenyi István University, Doctoral School of Regional- and Business Administration Sciences, Hungary

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## RS16.2 Tourism

11:00-13:00 Thursday, 11 April 2024

Room Rechnitzer János (1.15)

Chair **Hiroyuki Shibusawa**

- 243 **Evaluation of Implementation Timing of COVID-19-related Policies and Regional Tourist Fluctuations: A Panel Data Approach**  
Mingji Cui, Hiroyuki Shibusawa  
Toyohashi University of Technology, Japan
- 327 **Cultural tourism development in the Komárom-Komarno cross border area**  
Tamás Hardi, Melinda Smahó, Andrea Pozsgai, Eszter Csányiné Szemerédi, Marcell Kupi  
HUN-REN Centre for Economic and Regional Studies Institute for Regional Studies West-Hungarian Research Institute, Hungary
- 385 **The Good, the Bad and the Ugly -- didactics of settlement marketing**  
Tózsá István  
Head of Center for Economic Geography and Urban Marketing, John von Neumann University, Hungary

## RS12.2 Spatial implications of climate and environmental change

11:00-13:00 Thursday, 11 April 2024

Room Csatári Bálint (1.45)

Chair **Ferenc Forman**

- 134 **Fair transition and environmental tax avoidance. The issue of carbon leakage and regional competitiveness**  
**Saverio Di Giorno, Gianluigi Cisco, Francesco Busato**  
 University of Naples Parthenope, Italy
- 343 **Some determinant factors of climate adaptation strategies – a comparison of two Hungarian and cross-border representative surveys**  
**Viktor Varjú**  
 Institute for Regional Studies, KRTK (HUN-REN), Hungary, MATE VFGI Rural and Regional Development Department, Hungary. Department of Community and Social Studies, Faculty of Humanities and Social Sciences, University of Pécs, Hungary
- 362 **Subsidiarity, planning, climate change through the example of the Danube-Tisza river**  
**Anna Ábrahám, Ferenc Forman, Csanád Horváth, Péter Topercer**  
 John von Neumann University, Hungary

## VN02 Planning methods of sustainable mobility and logistics

11:00-13:00 Thursday, 11 April 2024

Room Liszt Ferenc (2.09)

Chair **Adrienn Boldizsár**

- 404 **IDM-Based Modelling and Validation of Roundabouts Based on Real Measurement Results**  
**Dömötör Zéno, Kovács Lóránt**  
 GAMF Faculty of Engineering and Computer Science, John von Neumann University, Hungary
- 405 **Examining the long-term payback of electric and conventional powertrains for freight vehicles**  
**Adrienn Boldizsár**  
 GAMF Faculty of Engineering and Computer Science, John von Neumann University, Hungary
- 406 **Estimation of the "Critical Time Gap" in a roundabout using microsimulation and video based traffic measurement**  
**Medgyes Krisztián, Kovács Tamás**  
 GAMF Faculty of Engineering and Computer Science, John von Neumann University, Hungary

## SS13.2 Ethnic issues in a regional context: the phenomenon, problematics, and manifestations of ethnoregionalism

11:00-13:00 Thursday, 11 April 2024

Room Varga Attila (2.10)

Chair **Nóra Baranyai**

Session organized by HUN-REN CERS, NSKI (RINS)

- 121 Characteristics of ethnoregional communities in Central and Eastern Europe**  
**Nóra Baranyai**  
 Institute for Regional Studies, Centre for Economic and Regional Studies, Hungary
- 216 Ethnic Hungarians and Trans-Border Regions in the Social Media: Bipolar Communication on Nationhood and Belonging**  
**Gyöngyi Schwarcz**  
 Research Institute for National Strategy, Hungary
- 283 Exploring narratives of social integration: Civic roles in alleviating poverty**  
**Luca Sára Bródy**  
 HUN-REN KRTK Regional Studies Institute, Hungary
- 344 Roma population on the peripheries of Hungary – spatial pattern of recent ethnic changes**  
**János Péntzes**  
 University of Debrecen, Hungary

## RS15.2 Theoretical and empirical urban economics

11:00-13:00 Thursday, 11 April 2024

Room Enyedi György (2.41)

Chair **Vicente Royuela**

- 5 Autonomous Vehicles in Future Cities**  
**Miklos Lukovics**  
 University of Szeged, Hungary
- 271 Urbanization and Slums: Evidence from Ecuador**  
**Alessia Matano<sup>1</sup>, Moisés Obaco<sup>2</sup>, Vicente Royuela<sup>3</sup>**  
<sup>1</sup>University of Rome “La Sapienza”, Italy. <sup>2</sup>Universidad Católica del Norte, Chile. <sup>3</sup>AQR-IREA Research Group - Universitat de Barcelona, Spain
- 302 Transit-Oriented Development, Land Use and Travel Behavior: the case of Curitiba, Brazil**  
**Alexandre Alves Porsse**  
 Federal University of Parana, Brazil
- 335 How does the creative space shape a creative city? Evidence from China**  
**Xueli Wang**  
 Wuhan University, China. University of Hong Kong, Hong Kong

## Lunch break

13:00-14:00 Thursday, 11 April 2024

## PLENARY SESSION IV

14:00 - 15:30 Thursday, 11 April 2024

Auditorium 1.06

### Keynote Speech



*Mapping the Divide: Navigating the Microgeography and Geography of Polarisation and Discontent*

**Associate Prof. Özge Öner**  
University of Cambridge, UK  
ERSA

## Coffee break

15:30-16:00 Thursday, 11 April 2024

## CLOSING CEREMONY

16:00-18:00 Thursday, 11 April 2024

Auditorium (1.06)

### Final Speeches



**Hans Westlund**  
*President,  
Regional Science  
Association  
International*



**Balázs Forman**  
*Chair, Local  
Organising Committee*



**József Kárpáti**  
*Chair, Local Organising  
Committee*



**Andrea Caragliu**  
*Executive Director,  
Regional Science  
Association  
International*

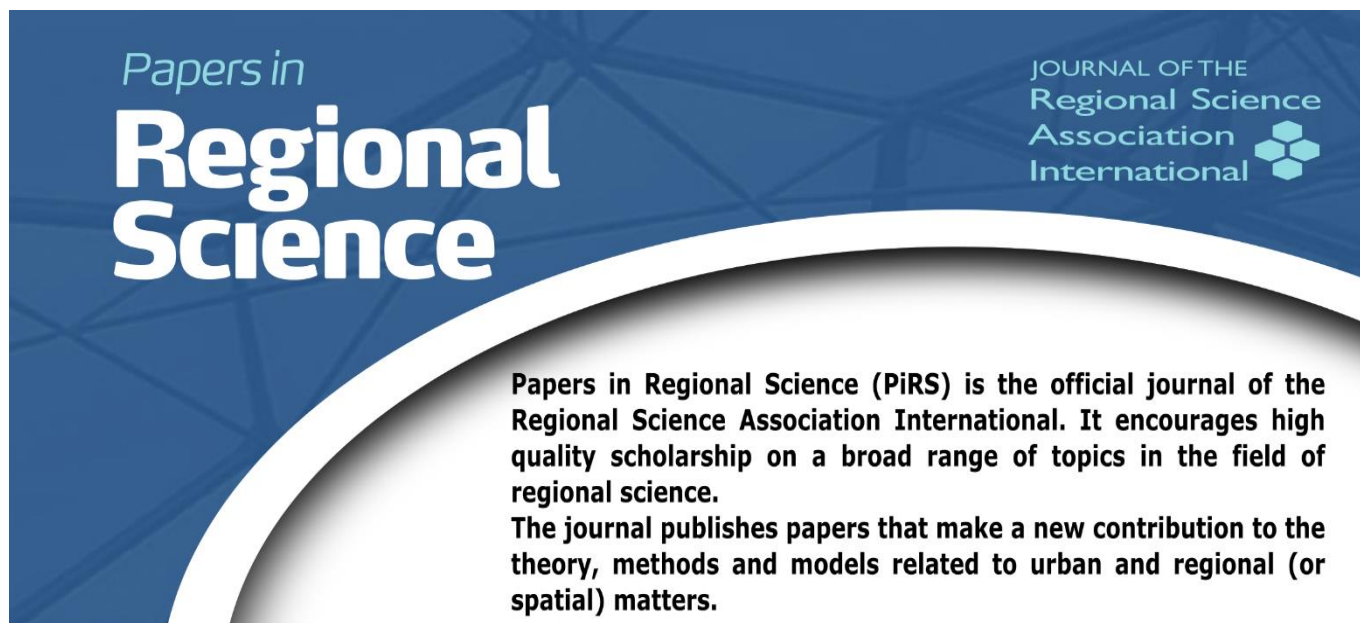
## Thank you

The RSAI would like to thank all participants for joining in the 14<sup>th</sup> World Congress of the Regional Science Association International. Founded in 1954, the Regional Science Association International (RSAI) is an international community of scholars interested in the regional impacts of national or global processes of economic and social change. The work of RSAI draws on the expertise of many different disciplines and this multi-disciplinary approach helps to facilitate new theoretical insights for tackling regional problems. In turn this provides an increasing opportunity for academics within the Association to engage more fully with planners and policy makers. Building on a strong foundation of quantitative methods, regional science is at the cutting edge of research into new model design for regional analysis and impact assessment.

We hope you have found the conference informative and valuable.

The cover features a warm orange-to-yellow gradient background. It is decorated with various geometric shapes: large, semi-transparent orange polygons, smaller solid orange polygons, and light-colored dotted patterns. Thin white curved lines are scattered across the design. A dark orange rectangular box in the upper right corner contains the title text.

**RS&AI  
JOURNALS**



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The journal publishes papers that make a new contribution to the theory, methods and models related to urban and regional (or spatial) matters. The editors invite submissions of papers that emphasize the application of theoretical frameworks, methods and models, developed specifically for the study of urban and regional phenomena. They also welcome contributions to the understanding of regional phenomena that employ theoretical frameworks and methods developed in other fields.

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The background features a warm color palette of oranges and yellows. It is decorated with various geometric shapes, including large, semi-transparent polygons and smaller, solid-colored hexagons. A fine grid of small white dots is scattered across the background, and several thin, white, curved lines sweep across the scene, adding a sense of movement and depth.

# APPENDIX

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**Table 1. Geographical determinants of abstract submission to the RSAI World congress, 13<sup>th</sup>/14<sup>th</sup> editions**

<i>Model</i>	(1)	(2)	(3)
<i>Characteristics</i>	<i>Geographical trends</i>	<i>Continents</i>	<i>Continental trends</i>
Time	14.55*** (13.88)	13.68*** (13.51)	-5.355*** (-10.73)
Latitude	0.642*** (10.65)	0.402*** (3.40)	0.409*** (4.42)
Longitude	-0.0845*** (-4.60)	0.0654 (1.38)	0.121*** (2.80)
Asia		-16.02** (-2.45)	-17863.1*** (-11.70)
Europe		20.55*** (3.86)	-56336.5*** (-18.59)
North America		13.69* (1.94)	2936.2** (2.19)
Oceania		-0.286 (-0.02)	-8516.4*** (-6.72)
South America		15.29** (2.07)	-5230.8*** (-3.90)
Asia # year			8.831*** (11.69)
Europe # year			27.87*** (18.60)
North America # year			-1.443** (-2.18)
Oceania # year			4.212*** (6.74)
South America # year			2.598*** (3.92)
Constant term	-29400.1*** (-13.88)	-27658.4*** (-13.51)	10828.5*** (10.73)
<i>Observations</i>	692	688	688
<i>Adjusted R<sup>2</sup></i>	0.308	0.354	0.456

**Notes:** *t* statistics in parentheses. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . In models (1) and (2), base continent: Africa.

## About John Von Neumann

Who was the namesake of our university, János Neumann? Why can we call him the XX. century man or smartest man? A man from the future, as his biographer Ananyo Bhattacharya put it. Without him, without his work, it is impossible to write and talk about the modernization of the 20th century.

He was born in Budapest 121 years ago to a wealthy bourgeois family. If we follow Neumann and think in the 11 number system, he was born exactly 100 (11) years ago. He graduated from high school in Budapest. In the school where his friend Jenő Wigner also studied and which became world famous because of them. At the Fásor Evangelical High School.

He received his doctorate in mathematics in Budapest. He graduated in chemical engineering in Zurich. He studied economics in Vienna and physics in Berlin. His first university job was in Hamburg. Researched in Karlsruhe. Then in 1933 he moved across the Atlantic Ocean to Washington. He worked at Princeton University until his death.

János Neumann's work was extremely versatile. He was interested in everything that was important to the world and led to the future. But he was often interested in many things beyond that. Sometimes the question was perhaps not what he meant. For everything! But what did he not understand? However, that was not the case, because everyone found what was interesting to them.

Considering his career, his very versatile work and his scientific achievements, the question is, who was János Neumann really? Chemist? Physicist? Economist? Computer scientist? Mathematician?

He was born in Budapest. He was there during the last years of the golden age of German physics. He included the famous equations of Heisenberg and Schrödinger, which are the foundation of quantum mechanics, in a unified mathematical framework. He was a member - along with Mises, Hayek, Neurath, Schlick, Menger, Wald - of the group of economists referred to as the second Austrian school. For twenty years, he was part of the rise of American science and its becoming a world leader. He was at Los Alamos. He was at Princeton in a US government think tank. He was president of the American Mathematical Society. He invented the computer. It was one of the XX. to the team of Martians, geniuses who changed the century and moved from Hungary to the United States through Germany. Who was this versatile genius anyway?

Mathematician! He was primarily a mathematician. He was a mathematician whose mother tongue was mathematics. Mathematician who saw the mathematical problem in everything and was able to assign the appropriate and adequate mathematical apparatus to the solution. In many of Neumann's writings, the reasoning methods he used are considered even more important than the results.

However, there was something very unique in János Neumann's work, which provided the deepest theoretical basis for his work spanning various sciences. And this is the mathematical topology published by the French mathematician Henri Poincaré in 1904, the theory of three- and four-dimensional non-metric spaces. Space became relative in mathematics, geography, physics and many other fields of science. Mathematical topology looked for ways to follow and map the changes of multivariable systems and shapes in multidimensional space. The mathematical apparatus required for this was first published by Poincaré. But János Neumann was able to significantly improve it and use it in practice for solving the problems of many sciences. He possessed the knowledge of a very complicated mathematical apparatus. It shows Neumann's genius that he was able to use this in any field of science. He thought in infinite dimensional spaces and states that could be described with many variables, both when it came to quantum mechanics and when it came to economics. He translated problems that could be described with many variables into the language of mathematics and solved them brilliantly. Today, the results he achieved in physics, economics, and computer science are evident, which make the understanding of very complicated systems and our world significantly simpler and more transparent. By creating the theory and the first pieces of modern computers, he started a development process that transformed our entire world.

János Neumann received his doctorate in mathematics in Budapest. In his 1925 doctoral dissertation, he further developed the Zermelo-Fraenkel set theory. In my opinion, this dissertation was the key to his later scientific achievements. In his dissertation, he developed techniques that enabled the construction of sets used in the everyday practice of mathematics.

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In the 1920s, János Neumann published many papers in the field of set theory and number theory. In his 1925 study, he proved that for any dense series of points located anywhere in infinity, there exists a uniformly distributed rearrangement of the points. In 1925, János Neumann introduced classes into set theory and defined the concepts of class and set. The Neumann–Bernays–Gödel theorem (NBG) became the axiomatic form of set theory.

In a paper co-authored with Pascual Jordan and Jenő Wigner, they classified all finite-dimensional formally real Jordan algebras and discovered Albert algebras.

In a series of articles published in 1932, János Neumann made a fundamental contribution to the description of the states of dynamic systems. It was then that Neumann wrote his articles on operator theory.

He formulated the proof theorem in 1936, and with this the axiomatic system of set theory avoided the contradictions of previous systems. In 1936, his article on the investigation of infinite dimensional spaces was published. Neumann's genius showed itself here. There are only three dimensions in our everyday life or in the classical physics that describes it. In this article, János Neumann formulates his theory of "space" that includes an infinite number of dimensions. This is the article that, by generalizing and expanding the number of dimensions, makes mathematics suitable for describing and solving multivariate problems in economics in addition to functional relationships.

Between 1935 and 1937, János Neumann worked on lattice theory, on the theory of partially ordered sets.

Between 1936 and 1940, János Neumann began studying operator rings and published his results in 6 articles. Neumann combined traditional projective geometry with modern algebra, applied by linear algebra, ring theory, lattice theory, and continuous geometry.

Neumann made a fundamental contribution to mathematical statistics. In 1941, he derived the exact distribution of the mean square of consecutive differences and the sample variance ratio in the case of independent and identical, normally distributed variables. This ratio is applied to the residuals of the regression models to test the null hypothesis.

In economics, Neumann corrected the errors of the Walras-Castell equations by replacing equations with inequalities. He used topological approaches instead of differential calculus. With these, he solved the anomalies of the general equilibrium theory of the Walras side. In 1932, Neumann published his paper on the dynamics of general economic equilibrium in the Princeton Mathematical Society.

János Neumann founded game theory as a mathematical discipline. In 1928 he proved the minimax theorem. He found that in zero-sum games with perfect information, there exists a pair of strategies for each player that allows each to minimize their maximum loss. He later extended this to include games with imperfect information and games with more than two players. He published this result in his work *Theory of Games and Economic Behavior* written with Oskar Morgenstern in 1944. János Neumann's functional-analytical techniques - the duality pairing of real vector spaces to represent prices and quantities, the fixed point theory - have been the primary tools of mathematical economics ever since. He proved the existence and uniqueness of equilibrium by generalizing Brouwer's fixed point theorem for the model of the expanding economy.

János Neumann is credited with introducing the axiomatic approach to economics. In order to examine the properties of the economic system in this, other external or internal elements of the situation must be strictly defined and idealized. As a "mathematician", Neumann formulated the questions of economics and obtained mathematical solutions to the problems of theoretical economics. The application of strict boundary conditions and the search for mathematical solutions are characterized by elegance, logical completeness, conciseness and rigor. But today it is modern economics.

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