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# ANNUAL REPORT 2023

OF

## THE ACADEMIA EUROPAEA BUDAPEST KNOWLEDGE HUB





# INTRODUCTION

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**2023 was the third year since the launch of the operations of the Budapest Hub on January 1st, 2021.**

During the last twelve months, each of the four thematic missions of the Budapest Hub – “Widening European Participation”, “Danube Region”, “Methodology of Science Education” and “Urban Sustainability” – went on with their event agendas respectively. In organizing their public conferences or workshops, they collaborated with other organizations such as the European Academies Science Advisory Council (EASAC) or the Young Academy of Europe (YAE). In the first quarter of the year, the leadership of the Hub seriously considered the idea of submitting an application to a COST call, but after consultations with all possible stakeholders, they finally concluded it was better to postpone submission to a later date, so as to make sure that by the time of the application the necessary network of collaborators has been built up for a really successful and impactful COST project.

At the “Building Bridges” annual meeting of Academia Europaea, this year hosted by the newly-established Munich Hub in early October, the Budapest Hub was represented by three of its Co-Chairs: Professor Eva Kondorosi (Co-Chair for Widening European Participation), Professor András Báldi (Co-Chair for the Danube Region) and Dr Katalin Solymosi (Co-Chair for the Danube Region). The Hub leadership and staff were happy to congratulate Katalin Solymosi on her election as the next Chair of the Young Academy of Europe, the organization which held its General Assembly in Munich in parallel with the Building Bridges conference of AE. In preparation for the Building Bridges event, the Budapest Hub staff provided administrative assistance to the Class C (Life Sciences) of Academia Europaea for the inauguration of new Members of the Class.

The year was marked by the launch of regular online meetings of all AE Hubs’ communication staff, coordinated by the AE Cardiff Hub, with a view to coordinating communication actions of all kinds of the various Hubs, at the visual as well as the content level. As far as the visual aspect is concerned, this is part of the branding refresh initiative of AE, also launched this year.

**The output of the Budapest Hub in 2023 is presented below in the context of its four thematic missions:**





## Widening European Participation thematic mission

*Co-chairs of the thematic mission:*

**Professor Éva Kondorosi**, Member of AE and MTA

**Dr Gergely Toldi**, Alumnus of GYA, Member of HYA

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### AIMS:

1. Monitor the growth of AE membership from Danube countries;
2. Establish close collaborations with a representative AE member and an early-career researcher from each Danube country;
3. Identify the strength of countries and potential common scientific interests (in association with the other three thematic missions of the Hub);
4. Involve AE members in mentoring programs;
5. Collaborate with other AE Hubs and the Young Academy of Europe

### ACTIVITIES IN 2023

#### Meeting of regional “Widening Partners” (carried out under Aim 3)

Meeting of the Academia Europaea **Budapest Hub leadership** and the delegation of the **Academy of Sciences of Moldova (ASM) to discuss cooperation on 27 January 2023, at the Palace of the Academy, Budapest:**

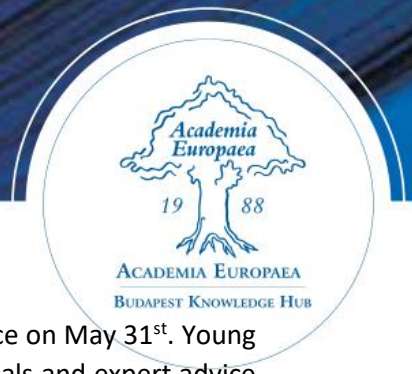
The participants discussed possible forms of future scientific collaboration, including the joint preparation of a COST Action proposal which could focus on water science from a viewpoint based on common concerns of Danube Region countries related to climate change, water supply challenges, floods and droughts.

As a follow-up to the meeting, the Academy of Sciences of Moldova officially nominated three scientists – experts respectively in sustainable agriculture, hydrobiology and conservation of biodiversity – who could be involved in the Budapest Hub’s future activities. The Budapest Hub established contact with them. After more in-depth consultations with domestic stakeholders, though, the Hub leadership concluded that planning of and preparations for a COST proposal would take more time and more preliminary coordination with possible partners, which meant the idea of a COST project was put off to a later date.

**Young Academy of Europe and AE Budapest Hub joint ERC Starting Grant Mentoring Event – 31 May, 2023, online** (carried out under Aims 4 and 5)

*Online visibility: 786 views on YouTube in 7 months*





The third edition in the mentoring series of Young Academy of Europe took place on May 31<sup>st</sup>. Young researchers wishing to apply to the ERC Starting Grant could listen to testimonials and expert advice at the online event co-organized by YAE and AE Budapest Hub.

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31 May 2023 (online, Zoom)  
15:00 - 16:20 CET

Agenda:

1. Introduction to ERC funding and evaluation
2. Introduction to narrative CVs
3. Positive testimonial with narrative CV and ERC StG evaluation

Started by the Young Academy of Europe back in September 2020, the mentoring event series aimed at young researchers having the ambition to apply to an ERC Grant call (typically a Starting Grant) has been a great success in the virtual arena of mentoring and grant application training events. Organized in collaboration with the Academia Europaea Budapest Knowledge Hub, the third event took place - again online - on May 31<sup>st</sup> 2023, from 15:00 to 16:20 hrs (CET). The focus now was on narrative CVs and the evaluation of ERC applications.

The AE Budapest Hub's Academic Director, Professor László Lovász, who is currently also a member of the Scientific Council of the European Research Council, gave his closing remarks at the end.

The online event was recorded, the full recording can be viewed on YAE's YouTube channel: <https://www.youtube.com/watch?v=TZjesMzOQeQ>





## Danube Region thematic mission

*Co-chairs of the thematic mission:*

**Professor András Báldi**, Member of AE

**Dr Katalin Solymosi**, Member of YAE and HYA

### AIMS:

1. Facilitate networking and interdisciplinary collaboration between scientists (especially AE and YAE members) working in the Danube region.
2. Highlight the natural values of the Danube region from an “artistic” perspective to strengthen the interdisciplinary and “Arts and Science” aspects of the Hub
3. Support and involve early-career researchers from the region in the activities of the Hub
4. Foster participation of researchers from the region in science policy

### ACTIVITIES IN 2023

**Open session on EASAC’s report on Neonicotinoids 29 March 2023, Palace of MTA, Budapest** (carried out under Aim 4)

*Online visibility: 485 views on YouTube in 9 months*



On 29 March 2023, EASAC's latest report on Neonicotinoids and their substitutes in sustainable pest control was presented to the public at a launch event at the Hungarian Academy of Sciences, in cooperation with the AE Budapest Hub. At the open session, EASAC’s experts delivered presentations



about the report which was released on 28 February 2023. The presentations were followed by invited comments from Hungarian experts and a roundtable discussion. A summary of the key messages in English is available on MTA's website (<https://mta.hu/english/easacs-new-report-on-neonicotinoids-presented-at-the-headquarters-of-the-hungarian-academy-of-sciences-112976>).

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The full recording of the event can be viewed here:

<https://www.youtube.com/watch?v=NklVgcev6ps&list=PLfs1ZvoZ3qYRuUv8Bc84RFD9z60e-BSqA&index=27>

## Methodology of Science Education thematic mission

*Co-chairs of the thematic mission:*

**Professor Csaba Pléh**, Member of AE and MTA

**Dr Eszter Gselmann**, Member of HYA

### AIMS:

1. Develop and promote new methodologies in science education to help the transfer of scientific knowledge at all stages of education, from primary school to university science curricula.
2. Identify the new challenges of distance education, brought to the forefront by the COVID pandemic.
3. Contribute to more social and gender equality in access to science education and STEM careers.
4. Promote the exchange of ideas and experience at all levels of education among countries in the region and in Europe

### ACTIVITIES IN 2023

**“Science Education Can Build Bridges” - the third edition of the science education methodology workshop series took place on 20 February 2023** (carried out under Aims 1 and 4)

*Online visibility: 133 views on YouTube in 10 months*

The on-going programme of the Hungarian Academy of Sciences in science education methodology aims to serve as the basis for the development of the activities of the AE Budapest Hub under the thematic mission “Methodology of Science Education”, which in turn offers the possibility to widen



the scope of the programme by incorporating the latest advances in education methodology on a European level.

Started in 2021 with an online international and an in-person domestic event, the third edition in the workshop series was held on February 20, 2023, bearing the title “Science education can build bridges”, and featuring experts from Finland, Estonia, Germany, and Hungary. **Jari Lavonen**, Professor of Physics and Chemistry Education at the Department of Teacher Education, University of Helsinki, Finland, held a talk entitled “Engaging secondary students in physics learning through project-based learning”. In his talk, he explained what is new in the science curriculum in Finland: namely the emphasis on learning of disciplinary core ideas, learning and using scientific and engineering practices, students’ active role in knowledge-building, collaboration between students, and the use of digital tools and media in education. **Miia Rannikmäe**, Professor of Science Education and Head of the Centre for Science Education at the University of Tartu, Estonia, talked in her presentation about “New teaching methodologies in science education”. The talk was based on four recent or on-going projects, in which researchers had been looking for ways to reverse the negative tendency of students’ lacking awareness of science careers and of their ensuing lack of motivation to consider pursuing a scientific career. **Eckhard Klieme**, Professor of Educational Science at Goethe University in Frankfurt am Main and Director of the Department for “Educational Quality and Evaluation” at the Leibniz Institute for Research and Information in Education (DIPF), Germany, gave a lecture entitled “An experimental study on adaptive science education in primary school”. Being a general researcher in educational science rather than a specialist in science education, he focused in his lecture on the findings of a project which investigated three areas of educational research: generic teaching quality, inquiry-based science education (more specifically guided inquiry) and adaptive teaching. As the fourth speaker, **Benő Csapó**, Professor and Head of the Doctoral School of Education at the University of Szeged, Hungary, delivered a talk entitled “Supporting early science learning with online assessment”. His talk was about the development of an online assessment system for supporting students’ personalized learning, that is, learning adjusted to the needs of the students.

The four presentations were followed by a thought-provoking panel discussion moderated by Professor Csapó. The full recording of the event can be viewed here: <https://www.youtube.com/watch?v=xONs8CHMFM4>



*Later in the year Professor Csapó died in an accident. The AE Budapest Hub had been honoured to have Benő Csapó as a speaker at workshops organized by the Hub’s thematic mission for Science Education Methodology. He was always ready to offer his expertise as well as his ideas and suggestions in (public) educational matters. His contribution to the Hub’s efforts in Science Education Methodology, as well as to all areas relevant for the improvement of public education in general, will be greatly missed.*





## Urban Sustainability thematic mission

*Co-chairs of the thematic mission:*

**Professor Gábor Stépán**, Member of AE and MTA

**Professor Péter Török**, Member of YAE and HYA

### AIMS:

1. Discuss historical drivers, special opportunities and challenges of urban sustainability in the Visegrad countries and other parts of Central Europe;
2. Integrate and assess the specific sets of goal functions and constraints used by the different research areas related to urban sustainability;
3. Define the possible synergies and unavoidable trade-offs while entering the era of smart cities, digital transportation systems, and clean energy;
4. Organize thematic regional workshops and public lectures in urban sustainability;
5. Develop regular and European-wide knowledge exchange and transfer in urban sustainability with the involvement of other AE Hubs.

### ACTIVITIES IN 2023

**“Frontlines of Urban Conservation and Restoration”, a special session on the issues of urban greening, organized by the AE Budapest Hub, held on 22 March 2023, at MTA, Budapest (carried out under Aim 4)**

*Online visibility: 171 views in 9 months*

Only 3% of the surface area of the Earth is urbanised, yet more than half of the Earth’s human population live in towns or cities. The impacts of the complex process of urbanisation constitute the most serious sustainability challenge of the 21st century, from an environmental, economic and social perspective. It is no coincidence that urbanisation as a phenomenon is often labelled as something negative, even though, as **Péter Török**, Co-Chair of the special session and Co-chair for the Urban Sustainability thematic mission of the AE Budapest Hub, pointed out in his welcome address at the start of the session, urbanisation does offer a number of opportunities in terms of sustainability when it comes to the creation of smart cities, green spaces, or the conservation of natural or semi-natural habitats and the provision of environmental education.





At the full-day session, **Monika Egerer** (Technical University of Munich, Germany) presented her study of community gardens in the urban landscapes of Munich and Berlin. As she explained, the research results demonstrate that well-designed urban gardens supporting a variety of functions, contribute to an adequate level of connectivity among green patches, leading to climate change mitigation and an increase in biodiversity. A similar conclusion was drawn by **Christina Fischer** (Anhalt University of Applied Sciences, Bernburg, Germany), who explained how wildflower patches along motorways contribute to an increase in biodiversity and pollinator abundance. In urban habitats, depending on the level of disturbance, there is a great degree of variation in the quality of green areas, to which the communities living there adapt in various ways. Taking leaf size and leaf dry-matter content as indicators, **Carlo Ricotta**, from the Sapienza University of Rome (Italy), studied the adaptation strategies of urban plants and reported on the results in his presentation.

The role of pollinators is truly invaluable for both ecology and economy. Several presentations have addressed the issues of what kind of impact human activities have on the pollinator communities of urban environments and in what ways the abundance and diversity of pollinators can be increased in urban habitats. The functional traits of bees (body size, food specialization, reproduction and active period) determine their ability to adapt to human disturbance in their actual habitats. Analysing these traits, **Weronika Banaszak-Cibicka**, from Poznań University (Poland), found that urban bee communities are predominantly made up of common, cosmopolitan and eusocial species with a long active period. Solitary species (potentially brood parasites) with a shorter active period are more sensitive to human disturbance and tend to occur in smaller numbers in urban habitats. **Federico**



**Morelli**, from the Czech University of Life Sciences Prague (Czechia), highlighted, among other things, the importance of the careful planning of urban green areas for birds in terms of taxonomy, functionality and phylogenetics. **Csilla Stenger-Kovács** (University of Pannonia, Veszprém, Hungary), described in her presentation the complex effects of agricultural land use and urbanisation on aquatic ecosystems. A fresh perspective was taken by **Veronika Bókony**, from the Centre for Agricultural Research at the Eötvös Loránd Research Network, Budapest (Hungary), who primarily studies populations of species rather than multispecies communities. Bókony studied the functional traits of the common toad and those of the agile frog to show how amphibians cope with urbanisation. **Péter Batáry**, from the Centre for Ecological Research, Vácrátót (Hungary), Co-Chair of the conference, presented a set of meta-analyses he and his colleagues had made of primary studies related to the topics covered in this special session, showing in particular how bird communities change along an urbanisation gradient. **Béla Tóthmérész**, from University of Debrecen (Hungary), defined the homogenisation hypothesis and tested it through an analysis of ground beetles (carabids). In contrast to most urbanization studies, he concluded from his results that urban habitats can also be characterised by increased species richness, and a great number of species have been found in his study to live exclusively in urban environments, completely missing from suburban and rural habitats.

One might think urbanisation has a positive effect on the cognitive abilities of birds. From time to time videos go viral on the internet showing birds rummaging in trash cans, opening up abandoned food cans or picking up cigarette butts. But do urban birds really differ in their cognitive abilities from birds living in natural habitats? Testing the problem-solving skills of avian species, **Ernő Vincze**, from Lund University (Sweden), showed that on the whole this is not the case, even though in certain situations better cognitive abilities may contribute to a better adaptation to urban environments.

As **Péter Batáry**, one of the co-chairs of the session remarked, preserving and restoring urban green habitats is just as essential as understanding the impacts of urbanisation on these natural communities. This is exactly the aim of the experts who presented their latest research results on this topic at the special session held in the Small Lecture Hall of the Palace of the Hungarian Academy of Sciences.

***One-off event that did not belong to any of the Hub's thematic missions:***

**“Picturing the Quran: representations of the Muslim holy book in European iconography, 15th-18th centuries” by Professor John Tolan, MAE – lecture delivered on 16 June 2023, at MTA, Budapest**

Hungarian experts of Islam and historians specializing in Oriental Studies gathered at the Budapest Hub to listen to Professor John Tolan (MAE) lecturing about how the Muslim holy book appeared in various accounts in Europe from the 15th to the 18th centuries. The public lecture was opened by AE Budapest Hub Academic Director László Lovász, who stressed how glad he was to see on the agenda of the Hub an event which showed the multidisciplinary nature of the Hub's activities and an important topic that



helps also the general public understand more of the religious and cultural relations and interaction between the Muslim and Judeo-Christian worlds.

Professor Tolan highlighted how authors in Medieval and Early Modern Europe (from the 15th to the 18th centuries) depicted the Quran as “a feigned revelation of a false prophet” and Muhammad as the false prophet himself. Initially, the message of the Muslim holy book was downright rejected by its European critics, but later, with actual translations of the Quran into European languages, the Quran was viewed rather as a rival scripture compared to the Gospels or the Torah, and it has even become a tool for polemics between Protestants and Catholics. Also, as evidenced by the works presented in Professor Tolan’s lecture, Christian scholars and dignitaries have come to apply a scholarly analysis and comparison of scriptures in their efforts to convert Muslims to Christianity through argumentation, through confronting and refuting the Quran.

Member of Academia Europaea since 2013, Professor Tolan is a regular visitor to Budapest where he has collaborated with scholars from different institutions. He and his colleagues in the “European Quran” ERC research project are hoping to organize in 2025 an exhibition in Budapest on the place of the Quran in European culture.





## Web communication and social media:

The AE Budapest Hub joined two social media platforms in April, 2023, with the creation of both a Facebook and a Twitter/X account. The AE Budapest Hub's Facebook Page is available here: <https://www.facebook.com/profile.php?id=100091939061650&sk=about>. We use the username/handle @aebudapest for our X (formerly known as Twitter) [Academia Europaea Budapest](#) profile. News, updates about the activities of MAEs, and events organised by our Hub's thematic missions are shared regularly. The profiles of all the other AE Hubs are also followed, thereby promoting their activities, too. The Budapest Hub staff are especially grateful to the staff of the Cardiff Hub for their support.

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## Finance:

Under the Collaboration Agreement between Academia Europaea and the Hungarian Academy of Sciences (MTA) signed in December 2020 for a period of 4 years, MTA provides the administrative services required for the operation of the Hub, as well as the agreed annual funding to support the Hub activities.



## AE Budapest Hub staff:

*László Lovász*, Academic Director

*Gergely Bőhm*, Hub Manager

*Nóra Deák*, Hub Officer

*Katalin Borvölgyi*, Hub Communications Officer

*Katalin Fodor*, Head of International Relations Department of the Secretariat of MTA

### Co-chairs of the thematic missions:

*Éva Kondorosi and Gergely Toldi*: Widening European Participation

*András Báldi and Katalin Solymosi*: The Danube Region

*Csaba Pléh and Eszter Gselmann*: Methodology of Science Education

*Gábor Stépán and Péter Török*: Urban Sustainability

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