EMYA: The European Mathematical Society Young Academy

Beatrice Pelloni, Volker Mehrmann, Róisín Neururer and Irene De Blasi

regularly presented by Vesna Iršič

Recently, EMS has initiated the instalment of the EMS Young Academy (European Mathematical Young Academy – EMYA). In this column we present the story behind the establishment of EMYA – presented by Beatrice Pelloni (vice-president of the EMS) and Volker Mehrmann (former president of the EMS) in Section 1, and the current state of EMYA – presented by Róisín Neururer (chair) and Irene De Blasi (co-chair) in Section 2.

1 The instalment of EMYA

Europe has a great tradition in Mathematics. But the mathematical community is very fragmented and the overall communication between the different mathematical communities and societies in Europe is not so well established. Furthermore, in the European Mathematical Society the interaction happens to a large extent on the level of established scientists and functionaries who meet at council or committee meetings. But the shaping of the future development of mathematics in Europe should involve the voice and the ideas of the next generation.

With this in mind, inspired by the successful models in some national societies, in recent years the EMS has discussed how to increase the support for the young generation of mathematicians in Europe. This support must involve their mathematical development and their career perspectives, but in order to shape the future, the young scientists should also participate more actively in the development of the EMS and its planning and decision procedures. They should also give impulses for future directions of research and for procedures to improve the well-established processes in the EMS.

As a consequence of this discussion and several iterations of ideas, the EMS council, at its meeting in Bled, approved the establishment of the EMS Young Academy (EMYA). The EMYA was added as an EMS structural element to the EMS by-laws. It was decided that every year, by the deadline of 31 July, each member society/institute nominates two young mathematicians (at least 3rd year PhD students up to 5 years after PhD) for the Young Academy, respecting gender and other diversity issues. The EMS Executive Committee (EC) forms a selection committee (of 5 members respecting mathematical field and gender diversity as well as regional balance) that selects 30 new members of the Young Academy. The selected ones remain members for a period of 4 years, so that at full scale EMYA will have up to 120 members representing the young generation of European mathematicians, with diversity in gender, geographical origin and mathematical expertise. The EMYA selection committee has a mandate for 2–4 years and the membership can be renewed once.

The role of EMYA includes an advisory function, commenting on and proposing procedures for the development of EMS (research plans, workshops, schools, organisation, web presentation, publications, etc.). The EMYA will have a representative on the EMS EC, elected by the EMS council with a 2-year mandate. Meetings of the EMYA will be supported with a reasonable budget by the EMS.

The first cohort of EMYA members was elected at the end of 2022 and the group has established itself at 30 members. There is a 50/50 gender balance in this cohort, with 18 countries represented and a good breadth of mathematical fields, from algebra and analysis to optimal control theory, from statistics to maths education. As their first action, EMYA organised itself, by agreeing by-laws and organisational structure. An EMYA committee composed of 9 members was elected. This committee comprises a chair, a co-chair, a secretary, a vice-secretary, a treasurer, a communications officer, an EMS Magazine column editor, a diversity officer, and an EMS EC representative.

We are looking forward to a fruitful and harmonious collaboration across generations of European mathematical scientists.

2 What is happening with EMYA now?

We are delighted to introduce you to the newly formed EMS Young Academy, or EMYA. It is a wonderful honour and great responsibility for us, as chair and co-chair of the inaugural cohort of 30 young mathematicians, to play a role in establishing the vision and activities of EMYA over the coming years. We hope to be able to represent and advocate for young mathematicians, making proposals and promoting initiatives to support our colleagues across Europe.



A collage of current members of EMYA, created by Dušan Džamić and Hana Turčinová.

The journey to the formation of EMYA began in late 2022, with a call to member societies, after which the inaugural cohort of 30 young mathematicians were selected. Our first meeting was held in March 2023, facilitated by members of the EMS Executive Committee. A working group was established to draft a set of by-laws and outline procedures for the running of EMYA, as well as to assign roles and responsibilities. These by-laws were formally proposed during the 2nd meeting of EMYA in June, where they were unanimously approved, and committee officers were elected. For the full list of EMYA members, as well as the elected committee officers, we invite you to view the EMYA webpage.¹

At present, the 30 members span 18 different countries and are at various stages of their academic career, from 3rd year PhD students through to those in their 4th year after PhD. Additionally, there are a wide variety of mathematical fields represented among our membership – a brief survey of AMS subject classifications revealed that 28 are represented. We hope the diversity of our membership will only increase as it grows in number. At full scale, EMYA will have 120 members.

EMYA echoes the aims and responsibilities of the EMS, but with a specific focus on young mathematicians. In particular, we aim to give a voice to, and encourage participation of, young mathematicians within the EMS; promote and support the work of young mathematicians across Europe; and propose scientific activities of interest to our community. To achieve these aims, we hope to organise a wide range of initiatives, both scientific and social, which will foster connections among young mathematicians in Europe and provide them with opportunities to develop research and academic skills, as well as create opportunities to share our views on what it means to be a young researcher in our academic system.

Since supporting our young community is the primary aim of EMYA, we would welcome ideas and suggestions from any

young mathematician across Europe about how we can support them in their careers and, broadly, their academic life. We strongly encourage you to follow us on our social media channels,² to stay up to date with our activities and contribute to our discussions. We also ask our EMS colleagues to share the news of our organisation with their colleagues and PhD students and invite them to contact us, to ensure that our representative role is as effective as possible.

We look forward to seeing how EMYA can benefit from and contribute to the EMS over the coming months and years, hoping that, in the future, it will become a reference point for any young mathematician aiming to build their life in this wonderful community.

Beatrice Pelloni is a professor of mathematics at Heriot-Watt University. She obtained her first mathematics degree in her country, Italy, and then a PhD in mathematics in 1996 from Yale University. After holding a Marie Curie Fellowship and a subsequent EPSRC-funded position at Imperial College, she became a lecturer at the University of Reading in 2001, and a professor there in 2012. She moved to Heriot-Watt in 2016 to become the first female head of school of the School of Mathematical and Computer Science, a role she held until 2022.

She is well known for her work on the qualitative behaviour of partial differential equations, including equations from mathematical physics, particularly those involving a realistic set-up in bounded domains. She was the Olga Taussky-Todd Lecturer at ICIAM 2011, and the LMS Mary Cartwright Lecturer in 2019. She was elected Fellow of the IMA in 2012, and Fellow of the Royal Society of Edinburgh in 2020. She is currently a vice-president of the European Mathematical Society and a deputy chair of the International Centre for Mathematical Sciences.

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¹ http://www.euromathsoc.org/EMYA

² https://www.facebook.com/groups/303163669063503, http://www.linkedin.com/in/young-academy-ems-569468299, https://twitter.com/EMSYoungAcademy

Volker Mehrmann received his diploma in mathematics in 1979, his PhD in 1982, and his habilitation in 1987 from the University of Bielefeld, Germany. He spent research years at Kent State University (1979–1980), at the University of Wisconsin (1984–1985), and at the IBM Research Center in Heidelberg (1988–1989). After spending the years 1990–1992 as a visiting full professor at the RWTH Aachen, he was a full professor at Chemnitz University of Technology from 1993 to 2000. Since then he has been a full professor for numerical mathematics at Technical University of Berlin and was from 2008–2016 the chair of the Research Center MATHEON in Berlin.

He is a member of Acatech (the German academy of science and engineering), the Academia Europaea, and the European Academy of Sciences. He was president of GAMM (the Association of Applied Mathematics and Mechanics) and the European Mathematical Society. His research interests are in the areas of numerical mathematics and scientific computing, applied and numerical linear algebra, control theory, and the theory and numerical solution of one of the differential-algebraic equations. He is an editor of several journals and the editor-in-chief of *Linear Algebra and its Applications*.

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Róisín Neururer is a PhD researcher in the School of Mathematics and Statistics at University College Dublin, Ireland. Her research is in mathematics education, with a focus on problem solving and teacher education. She is currently the chair of the European Mathematical Society Young Academy.

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Irene De Blasi is a researcher in mathematical analysis at the University of Turin, Italy. She defended her PhD thesis, titled *Dynamics and stability in celestial mechanics: From galactic billiards to Nekhoroshev estimates*, on November 2022. Her research interests include the study of dynamical systems, especially those coming from celestial mechanics. She is currently a member of the European Mathematical Society Young Academy, serving as its co-chair.

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Vesna Iršč is a researcher at the University of Ljubljana, Slovenia. She received a PhD in mathematics in 2021. Her main research area is graph theory, in particular domination, metric properties, and games on graphs. She is the EMS Magazine column editor for EMYA.

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