



Science leadership training was organized for early-career researchers by the Global Young Academy in 2019.

SIX REASONS TO LAUNCH A YOUNG ACADEMY

The founders of Hungary's Young Academy describe how and why they set it up in 2019. **By Erika Bálint and seven co-authors.**

Twenty-one years ago this month, Germany became the first country to launch a national Young Academy of early-career researchers. This spawned a movement that now straddles 45 countries, from Albania to Zimbabwe, including 14 in Africa and 13 in Asia. Such academies now exist in countries that score well in academic-freedom indices, and in some that don't.

Alongside these national bodies, which usually have between 25 and 60 individual members, there are 16 similar bodies around the world (see 'A step beyond'), including 5 transnational organizations (such as the

Global Young Academy, founded in 2010, and the Young Academy of Europe, founded in 2012). Their financial and legal status, as well as their relation to senior academies and governments, greatly varies – which strongly influences the possibilities and potential impacts of each of these organizations.

“They provide authentic, trustworthy information in an era of misinformation.”

Young Academies aim to support junior scientists and to get their voices heard by decision-makers as they race to produce academic knowledge and meet ever-evolving research-evaluation procedures. They also advocate science's role in helping to meet societal challenges, and provide authentic, trustworthy information in an era of misinformation, disinformation and fake news. Many early-career researchers juggle these demands alongside precarious positions and caring responsibilities.

Hungary's Young Academy was launched in 2019. As founding members, we wanted to share how we went about getting it live. We

hope our experience will be useful to early-career researchers who are keen to set up a Young Academy in their country, and to raise awareness about the types of activity that Young Academies get involved in.

In 2018, the Hungarian Young Academy's founding members conducted a survey on the situation of young researchers in the country. The goal was to identify major life- and career-related challenges – such as job precarity, access to funding, work–life balance, gender equality, diversity and inclusion, working-environment conditions and international competitiveness – and to gather information for quantitative arguments that we can use in discussions about these issues with decision makers, and to prioritize the Hungarian Young Academy's future activities.

Alongside the survey, we reviewed the activities of existing academies. We found that Young Academies offer a wide variety of services and initiatives, as well as benefits to local scientific communities and society.

Outreach

Young Academies help to improve public understanding of how research works, and the societal benefits that scientific achievements can bring. They organize workshops that are open to members of the general public on hot topics, such as alternative medicine, COVID-19 and climate change. These workshops aim to make citizens aware of recent scientific results and evidence, or to raise public awareness of the importance of vaccination, for example.

Young Academies can also promote scientific careers to the next generations of scholars. Some, such as those in Finland and Norway, run 'Meet a Researcher' or 'Book a Researcher' events, often at a scholar's alma mater, where both early-career and senior scholars can talk about their everyday research tasks and career development. In 2020, along with the Hungarian Academy of Sciences, we launched a similar motivational programme, which helps secondary schools contact and invite their former students who now work in academia to participate in similar programmes.

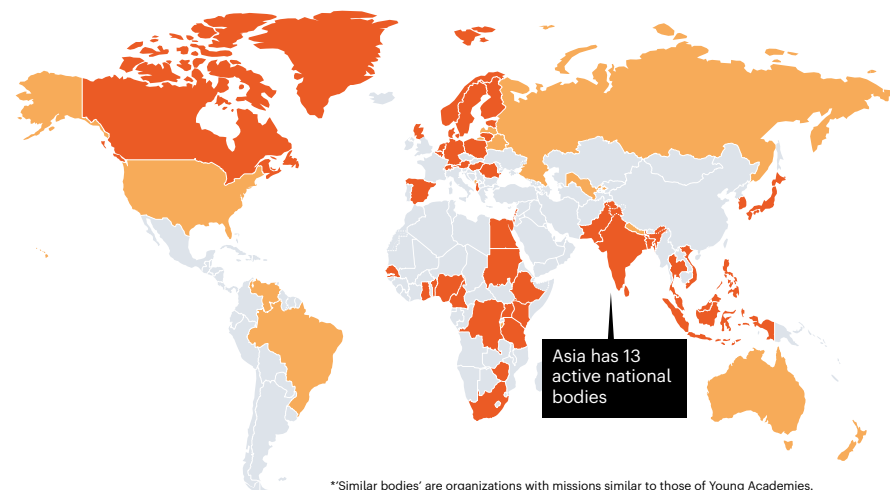
Our audit also revealed how Young Academies encourage younger generations, from preschoolers to undergraduates, to develop investigative attitudes and critical-thinking skills. In 2011, the Dutch Young Academy, for example, devised the enquiry-based science-education game called Expedition Mundus for students aged 8 and older. This game simulates landing and exploration on an unknown planet by using various scientific-research methods, and has been translated into multiple languages and advertised in several Asian and African countries by the Global Young Academy.

Several Young Academies run scientific-communication talks by junior researchers

A STEP BEYOND

Young Academies and other organizations that support junior researchers and aim to get their voices heard by stakeholders number more than 60 worldwide across upwards of 50 nations. They also work to improve public understanding of how research works and its societal benefits.

■ With Young Academies ■ With similar bodies*



that can attract a wide and an especially young audience, thanks in large part to digital platforms, including social media and podcasts, and to the often informal communication style of younger people.

Open science

Many Young Academies are strongly promoting and supporting open science and open data – the legal removal of access barriers from peer-reviewed scientific research outputs around the world. In 2018, the Young Academy of Utrecht University in the Netherlands produced *The Road to Open Science* podcast. It explores the philosophy and history of open science and how it can benefit research. In April 2021, the Young Academy of Europe teamed up with other Young Academies and the open-access initiative cOAlition S for a webinar to discuss the Rights Retention Strategy, which aims to offer researchers the freedom to submit manuscripts to a journal of their choice while remaining fully compliant with Plan S. This requires researchers who benefit from state funding to publish their work in open repositories and journals.

Science policy

Some Young Academies publish articles in national and international journals to raise awareness of various issues of concern from a young researcher's perspective. One such initiative is the June 2019 survey led by the Young Academy of Europe, which illustrated that early-career researchers often work beyond a standard work week, juggling administrative and educational tasks alongside research.

These publications are read not only by members of the scientific community, but also by policymakers, legislators, funding agencies, business leaders, journalists and members of the public. These articles can

lead to Young Academies or early-career researchers getting involved in national – or global – decision-making. In April 2020, for instance, the Global Young Academy, together with 14 national academies, published a statement on the dire need for international cooperation among different sectors during the COVID-19 pandemic. In December 2020, 14 European Young Academies set up the Young Academies Science Advice Structure (YASAS). YASAS will soon become involved in the European Commission's Scientific Advice Mechanism, which was set up in 2016 to provide independent scientific advice to members of the European Commission.

Networking

Young Academies provide a multidisciplinary platform that allows their members to exchange diverse views and experiences to broaden their intellectual horizon. They also promote interdisciplinary research, and collaborations at both the national and international level. One such project is the Global Young Academy's cross-disciplinary biodiversity project Bio2Bio (Biodiversity for Survival via Biomedicine), which aims to preserve knowledge about the medicinal properties of different species and develop pharmaceuticals from nature while protecting biodiversity.

Mentoring and advocacy

Mentoring offered by Young Academies might represent various opportunities to support the career development of young scientists, including science-communication, scientific-writing or grant-writing workshops and seminars for individual advice, counselling or mentoring schemes. Several Young Academies propose principles and guidelines for young scholars to achieve a sustainable academic career. These types of mentoring

can help early-career researchers to choose an independent career path, regardless of discipline-specific convention, by generating, gathering and sharing knowledge on responsible research practices across all disciplines. And junior researchers who participate in Young Academy workshops might receive advice on how to preserve research integrity even in the face of scientific misconduct.

Some Young Academies provide up-to-date information on available domestic and international grant applications, funding opportunities and resources, as well as potentially exciting scientific events. In September 2020, the Young Academy of Europe organized a European Research Council Starting Grant mentoring event involving almost 500 participants across European countries, with a follow-up one-to-one mentoring programme. In Hungary, we launched a similar initiative focused on major national grants and scholarships. This led to constructive discussion and jointly organized workshops with the country's major national funding agency about eligibility, grant and report evaluation criteria, discipline-specific aspects and administrative burdens.

We think these efforts all represent important milestones in establishing a sustainable career model in science. Doing so will certainly also require regular exchange with leaders of governmental organizations, funding agencies, research institutes and universities.

Equality, diversity and inclusion

Starting a family has a huge impact on the career development of young researchers. This usually coincides with the first decade(s) of their career, when their positions are often

precarious and they are just starting to achieve professional recognition and success. Parental leave affects mainly women – especially in countries with traditional family models, such as Hungary – so it places a heavy burden on young female scientists, and many talents remain untapped or simply get lost along the leaky pipeline.

Young Academies make recommendations and provide advice to support early-career researchers' work–life balance and parental leave, and to help them find childcare facilities,

“New measures that allow scientists to build careers alongside raising a family must be introduced.”

and to develop strategies and initiatives that can reduce gender inequalities. These include new funding mechanisms to compensate for career responsibilities, and measures to achieve a more-even gender balance across panels, committees and other leadership and decision-making positions. The Hungarian Young Academy's founding members, for example, worked with a trade union in 2018 to boost awareness of the importance of increasing the eligibility window for grants to accommodate childcare activities. We also proposed a specific grant type to our country's funding agency and government to support reintegration of early-career researchers into science after a parental career break. We strongly feel that, to avoid losing junior talent and diversity in science, new measures that allow scientists to build successful careers alongside raising a

family must be introduced.

These organizations can also promote successful, diverse role models and increase the visibility of research done by under-represented groups to make science more inclusive and more attractive to the public. The Women in Science working group of the Global Young Academy was among the first teams to publish inspiring experiences and advice for early-career researchers working in home offices during COVID-19 lockdowns. At the same time, the members of the Hungarian Young Academy and the Young Academy of Europe tried to raise decision-makers' and grant agencies' awareness of the difficulties faced by young scientists, especially those with caring responsibilities, during the pandemic.

When recognized as independent, diverse actors in the local, national, regional and global science-policy systems, Young Academies can have a significant role as authentic and trusted mediators between society, the research community and decision-makers. This is a win–win situation for all.

However, these organizations rely on voluntary work and usually have a limited number of members – and it is crucial to not encourage junior researchers' tendencies to work themselves to exhaustion. Instead, Young Academies need to optimize their members' workload, energy, time and financial investment by strengthening existing collaborations, networking and synergies among similar organizations, as well as among senior academies and national and international bodies. Together, we can go further.

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The executive committee of the Global Young Academy.