



October 2024

European academies

Overview and summary of
the academy survey



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European academies

An overview and summary of the academy survey

October 2024

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Foreword

SAPEA (Science Advice for Policy by European Academies) is an integral part of the European Scientific Advice Mechanism (SAM), which provides independent scientific evidence and policy recommendations to the European institutions by request of the College of Commissioners. SAPEA brings together outstanding knowledge and expertise from over 120 academies, young academies, and learned societies in over 40 countries across Europe. Funded through the EU's Horizon Europe programme, the SAPEA consortium comprises:

- Academia Europaea (AE)
- European Federation of Academies of Sciences and Humanities (ALLEA)
- European Council of Academies of Applied Sciences, Technologies and Engineering (Euro-CASE)
- Federation of European Academies of Medicine (FEAM)
- Young Academies Science Advice Structure (YASAS)

SAPEA invited the academies that are members of these networks to participate in a survey. Almost all these academies responded to our structured questionnaire. In this report, we summarise the results of this questionnaire. The data highlight the great diversity and richness of European academies, in terms of how they operate, their membership and activities, their means of outreach to networks of local, national and international stakeholders and the diversity of expertise that they encompass. It also illustrates how academies, which have been evolving for over 400 years, have each adapted to their regional or national contexts to remain relevant. This report therefore demonstrates the broad networks of which academies are a part as well as academies' capacity to provide advice to policy and society.

We extend our heartfelt gratitude to all the academies who participated in the survey and shared insights into their work and activities. Their contributions are vital for gaining a deeper understanding of the academy landscape across Europe and for showcasing the rich and diverse expertise available across the continent.

Stefan Constantinescu, Chair of the SAPEA board

Tuula Teeri, Chair of Euro-CASE

Executive summary

This report describes the rich landscape of academies in Europe. It opens with a brief history of the evolution of academies and a description of their collaboration across the continent through European academy networks and SAPEA. It goes on to present the results of a survey of 112 academies in Europe conducted in 2023, which gathered information about their membership, resources and activities. The survey results, together with a review of literature, aim to provide an overview of European academies and their capability to contribute to SAPEA.

The earliest modern academies in Europe began in the 17th century, with their number growing steadily since then. The early academies advised governments, bridging the gap between scientific study and practical application, fostered communication networks among scholars and contributed to scientific progress. Today, there are four main types of academies which continue to play a vital role in organising scientific discourse, publishing research, and playing important advisory roles:

- academies of sciences¹
- academies of medicine
- academies of engineering and technology
- young academies

Academies in Europe are diverse in size, resource, and the role they play in their national science landscapes. Some act solely as learned societies of members or fellows, while others follow a different model which includes a research function. However, there are also many similarities in terms of the wide-ranging activities conducted by academies, particularly in their role as membership organisations. Most academies dedicate time, effort and resources to networking activities among their members, organising conferences and events, as well as arranging prizes and awards. Many academies also engage in providing science advice to governments and to broader society.

The variety seen in the academy landscape in Europe presented challenges in data collection through our survey. As such, the results presented in this report describe general trends across European academies but are not robust enough to provide detailed analysis or a comprehensive assessment of academies' capabilities to provide science advice. Instead, they provide a starting point from which SAPEA will revise this work in future.

The academy landscape of Europe continues to evolve, most notably through the growth of young academies aiming to support early- and mid-career researchers and their inclusion in the science-

¹ Including social science and humanities

Executive summary

policy interface. There is no one-size-fits-all model of an academy, but the diversity in their size, functions and activities is a strength which allows sharing of perspectives from the research community across Europe and enriches their capacity to inform policy.

Limitations of the survey

This is the first time such a survey of European academies has been conducted and it has uncovered several challenges in assessing the academy landscape in this way. While we achieved a very high response rate from invited academies (97%), we acknowledge that only academies that are members of the European networks constituting the SAPEA consortium were invited to participate in the questionnaire.

Inconsistencies in the reported data compared to publicly available information were noticed. Together with the very large range in responses, this points to potential difficulties in interpreting or comparing the survey results.

We hypothesise that the survey questions were framed too widely, leading to multiple interpretations. For example, in the introduction to the survey, academies were asked to focus only on the 'learned society' activities of their academy. Academies have a range of structures, size, governance and roles in their respective national research ecosystems. While some academies function primarily as a learned society, others are also research-performing organisations, and some act as research funders. It is possible that different academies may have had different understandings of what 'learned society' activities are, or may be structured in a way that makes it difficult to distinguish between these and other activities within their remit. This may have contributed to a lack of consistency in how survey questions were interpreted by respondents, and it makes it difficult to draw direct comparisons between them.

A further challenge is a lack of standardisation between academies in how they collect data about their own activities. This was evident in questions asking for information around different membership categories, career stage or gender diversity of members, amongst others.

Due to these challenges in the data, survey responses are presented with limited interpretation. In some cases, responses have been verified, updated or completed with the support of the academies through follow-up emails and calls. This is clearly indicated in the text where appropriate. These concerns are also why the answers to question 11 (number of publications), question 12 (number of events) and question 26 (retired members) are not presented in this report.

Nevertheless, we believe the survey gives an indication of the breadth of the academy landscape, including in the activities undertaken, size of membership and resource, and collaboration. This initial exploration of the academy landscape in Europe has identified areas where SAPEA would like to

Limitations of the survey

investigate the variation across academies as part of the future work on the academy landscape and academies' capacity for delivering science advice. It has also identified challenges in collecting data on academies, their ways of working and their membership through an online survey. As we develop this work in future, we will consider how we might better collect data towards understanding the academy landscape in Europe.

The origins of European academies and their role in today's scientific landscape

What is an academy?

In this report, the term 'academy' will be used to encompass both academies and learned societies. We use a broad definition of sciences which includes social science and humanities, as implied by the German term 'Wissenschaft'.

Academies and learned societies are established to promote and advance study in nearly every discipline (Wagley, 2008). These academies are generally self-sustaining, with new members selected by current members (Wagley, 2008). Some academies have their own active research institutes or act as research-funding organisations. However, to keep the report focused, the academies were asked to report solely on their 'learned society' activities. As expressed in the Limitations section, focusing solely on 'learned society' activities may not have been feasible for all academies.

The origin and evolution of academies

Inspired by Plato and the foundation of the ancient Academy in Athens c.387 BC, the earliest modern academies originated in Renaissance Italy (Drenth, 2001). Among them is the Accademia Nazionale dei Lincei, which was founded in 1603 and is considered the world's oldest scientific academy (Wagley, 2008). These academies often consisted of members who were particularly interested in vernacular languages and philology (Wagley, 2008). Other early European academies include:

- the German National Academy of Sciences Leopoldina, founded in 1652
- the Royal Society in London, founded in 1660
- the Académie Royale des Sciences in Paris, founded in 1666

In the 140 years between 1660 and 1800, approximately 70 academies were established across Europe, with nearly half of them located in France (König, 2004; Wagley, 2008).

The origins of European academies and their role in today's scientific landscape

Academies have a long history of advising governments. For example, the French state consulted the Académie Royale des Sciences, established as part of its mercantilist policy, on technical and industrial issues. These consultations included topics such as seawater desalination, fountain operation, and cannon usage. Individual academics were also sought after as advisers (König, 2004).

Eighteenth-century Europe witnessed a surge in associations dedicated to practical knowledge. These groups aimed to bridge the gap between scientific study and its application in fields like handicraft, manufacturing and agriculture. The Dutch Society of Sciences exemplifies this trend, prioritising advancements in navigation and shipbuilding, crucial for their nation's mercantile interests (Phillips, 2016).

As a broad estimate, about 650 relevant groups were founded in the eighteenth century (Phillips, 2016). By the early nineteenth century, the number of academies and learned societies had grown to hundreds of institutions. Prominent scholars built their public reputations through membership of learned societies. These societies supported important communication networks amongst European intellectuals; for instance, the Society for Nature-Researching Friends in Berlin would exchange letters and specimens with members across Europe. This exchange helped the group build a large natural history collection, and the core members in Berlin worked hard to identify, curate and preserve these specimens (Phillips, 2016).

Inspired by his travels in Western Europe, in 1724, Peter the Great founded the Imperial Academy of Sciences and Arts in Saint Petersburg. It included "a university, a gymnasium (a pre-university course of study), laboratories, a publishing house, and a museum" (Wagley, 2008), and it attracted scientists and scholars from the West. Throughout the nineteenth century, it promoted mathematical and scientific research and supported Russian studies of the oceans, Siberia and Antarctica. In 1918, it was renamed the Russian Academy of Sciences; in 1924, it became the Academy of Sciences of the USSR. Ten years later, in 1934, the headquarters moved from Leningrad to Moscow (Wagley, 2008).

Under Lenin, each Soviet republic subsequently established its own corresponding academy. The network of regional academies in the Soviet Union formed an interconnected and partially specialised system overseen by the Academy of Sciences of the Soviet Union in Moscow. After World War II, all East and Central European satellite nations eventually adopted the Soviet research organisation model. Previously, many of these countries had academies in the form of learned societies, with their universities serving as primary hubs for basic research, aligning with Western European practices. However, the introduction of the Soviet science organisation model, where academies became the primary institutions for state-funded research, marked a departure from this tradition (Mayntz, 1990, 1998). Academies in Central and Eastern European countries have had a dominant role in scientific research through these academy scientific institutes (Caswill, 1992). Today, several other academies

have a research-performing function alongside their learned society activities, such as the Royal Netherlands Academy for Arts and Sciences and the Austrian Academy of Sciences.

Academies and learned societies have always played a dual role, fostering in-person connections and maintaining broader, virtual networks of researchers. This adaptability ensures their continued relevance even as new forms of communication emerge. Since the seventeenth century, these societies have proven remarkably flexible. They serve as a system for acknowledging scientific achievements within the research community, and a platform for gaining recognition from the wider public and policymakers (Phillips, 2016).

The responsibilities of European national scientific academies have shown remarkable consistency across different countries and historical periods. These commitments include organising meetings and scientific debates, facilitating international exchanges, publishing works, representing the interests and perspectives of the scientific community, and providing expert advice. Additionally, academies are increasingly assuming new and expanded roles in promoting a positive image of science and addressing issues related to public scientific education (Caswill, 1992; Drenth, 2001).

Academies in today's scientific landscape

Today, academies are present in almost all European countries and play a variety of roles at local, national, European and international levels. In this report, we focus on the academies across Europe that are members of one of the European academy networks that constitute SAPEA. There are four main different types of academies:

- academies of sciences
- academies of medicine
- academies of engineering and technology
- young academies

The origins of European academies and their role in today's scientific landscape

The number of academies in Europe has been growing steadily since they were first established in the seventeenth century and continues to grow today:

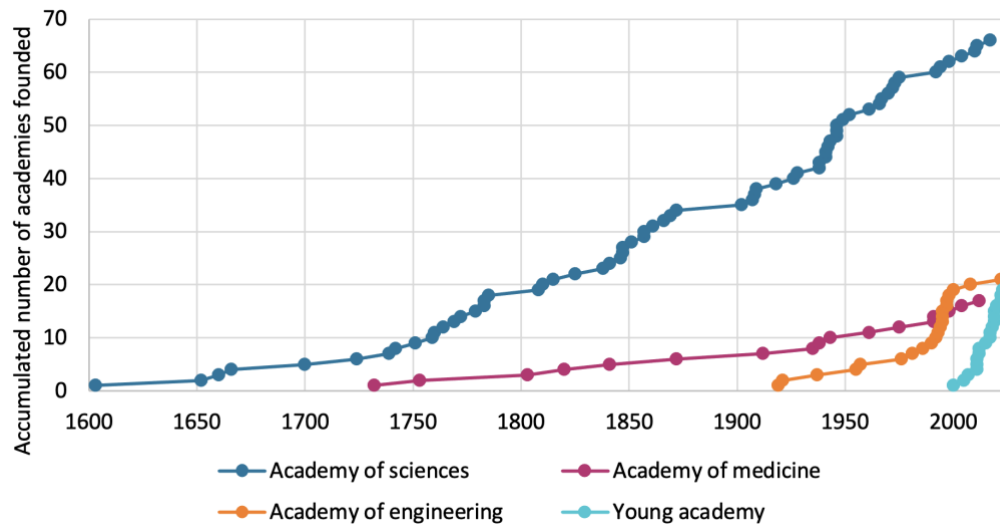


Figure 1. Chronology of the founding of academies in SAPEA networks by type ($n=123$; 66 academies of sciences, 19 young academies, 17 academies of medicine, 21 academies of engineering and technology). Source: academy websites. Umbrella organisations and academies of language and literature not included due to low number.

Academies of sciences

Academies of sciences were the first type of academy to be established and are the most numerous type of academy in the academy networks that constitute SAPEA. In most countries, there is one national academy of sciences, usually the largest academy in the country, which gathers expert members from the country itself or with expertise linked to the country. These academies also often divide their activities between classes or branches to represent different areas of science (for example, natural, medical, health, agricultural and social sciences, engineering and technology, and humanities).

However, different models exist in different countries. Some countries have more than one academy or learned society of sciences. Additionally, the European academy networks also include academies of sciences representing national, regional or local expertise, such as the Royal Society of Edinburgh, academies of the German Länder, and the Royal Academy of Sciences and Arts of Barcelona.

A unique academy is the Academia Europaea, established in 1988, a European academy of sciences whose members are scientists and scholars from across Europe.

The most recently founded academy of sciences is the Cyprus Academy of Sciences, Letters and Arts, founded in 2017.

Academies of medicine

The earliest academies of medicine were founded in the eighteenth century, with the first European academy of medicine, the Real Academia Nacional de Medicina de España, established in 1733. The most recently founded European academy of medicine is the Czech Medical Academy, founded in 2004. In addition to academies dedicated only to the medical sciences, several national academies of sciences have a specialist medical science arm or include medical sciences within their overall remit, such as the Academy of Athens.

Academies of engineering and technologies

Academies of engineering and technologies were established a few centuries later than academies of sciences and medicine, in conjunction with the late phase of industrialisation, electrification and the use of internal combustion engines. The Royal Swedish Academy of Engineering (IVA) was founded in 1919 and is the world's oldest academy of engineering sciences. These academies typically gather researchers, innovators and engineers with expertise in technology, engineering and applied sciences both from academia and industry; some of them also work with entrepreneurs. Some of these academies are called academies of engineering while others are academies of technology or of technical sciences, which in some instances also include members from other disciplines such as social sciences related to technology. Several of these academies have two pillars: one made up of elected academic Fellows, and the other being made up of industry or other representatives. One example is the German National Academy of Science and Engineering, acatech, which has two Presidents, one from academia and one from industry. The youngest academy, the Italian Academy of Engineering and Technology (ITATEC), was founded in 2022.

Young academies

Young academies are created to give a voice to young scholars, typically limiting membership to a four- or five-year term. In some cases, young academies offer members the opportunity to continue within the young academy network as alumni.

When the Berlin-based Die Junge Akademie was founded in 2000, it was the first young academy in the world. Its objective was to offer a platform for young academics in Germany to develop freely and shape the academic system. It was established with support from the Berlin-Brandenburg Academy of Sciences and Humanities, the German National Academy of Sciences Leopoldina, and the German government.

The origins of European academies and their role in today's scientific landscape

The Global Young Academy was founded a decade later in 2010, with a worldwide reach across six continents. It is currently host to over 200 international members. A year later, 11 young scholars who were recipients of European grants met in Paris and formed the idea of establishing a Young Academy of Europe (YAE). In 2012, it was formed as an association with support from the COST programme and a partnership with Academia Europaea. In 2019, YAE officially became an organisation with aims to provide a platform to young scholars in Europe to engage in science for policy and European research strategies, and to offer support and a network to its members.

Today, 25 young academies exist across Europe, in addition to the numerous regional and local academies and other similar types of associations, and this number keeps growing. In 2023–2024, new young academies emerged, such as the UK Young Academy, the Young Academy Ireland, the Collegium of the Royal Academy of Belgium, and the Lincoo Youth Interdisciplinary Center in Italy. Like traditional academies, other types of young academies have emerged; for example, in 2023 the Danish Young Academy of Technology, Science, and Innovation (YATSI) and the Young Israeli National Academy of Science in Medicine were established as the first young academies of their kinds in the world.

Young academies are often supported by senior academies with varying degrees of involvement. In some cases, senior academies acting as hosts and providing (financial) administrative support, where others act as co-located, collaborating organisations.

Other types of academies

More specialised academies of experts and practitioners exist, such as academies of veterinary sciences, pharmacy, agriculture and academies of literature and arts. Only some of them are members of one of the European academy networks.

National umbrella organisations

National umbrella organisations bring together academies representing various scientific disciplines and expertise, usually within a national context. By working together under one organisation, these academies gain a stronger voice and stronger collaboration across disciplines. Three examples of these organisations are:

- The Council of Finnish Academies is a cooperative body for the four science academies in Finland (Finnish Academy of Science and Letters, Finnish Society of Sciences and Letters, Finnish Academy of Technical Sciences and Swedish Academy of Engineering Sciences), which serves as a link and a broker between the national and global science community by

representing Finland in international science organisations and allocating state subsidies to national committees for international cooperation.²

- The Swiss Academies of Arts and Sciences is an association of the Swiss Academy of Sciences, the Swiss Academy of Humanities and Social Sciences, the Swiss Academy of Medical Sciences, the Swiss Academy of Engineering Sciences and the Swiss Young Academy. It further comprises the Centre of Excellence for Technology Assessment and the foundation Science et Cité, as well as other scientific networks. At their founding in 2006, the Swiss Academies of Arts and Sciences became the largest academic network in Switzerland.³
- The Union of German Academies of Sciences and Humanities is the umbrella organisation of eight German academies, representing a total of over 2000 scholars of diverse subjects, all of whom are outstanding representatives of their research fields both nationally and internationally. Together they are committed to promoting scientific exchange, excellence in research, and supporting early-stage researchers in the sciences and humanities.⁴

Academies coming together

European academy networks are organisations that represent academies and learned societies at the European level. By being a member of one or several of these organisations, academies are offered the opportunity to build a network across Europe, to have views and interests represented at EU level and to take part in European science advice activities. In 2016, European academy networks joined forces, together with Academia Europaea, in the EU-funded project SAPEA to bring together outstanding expertise from natural sciences, engineering and technology, medical, health, agricultural and social sciences, and the humanities.

SAPEA is a consortium of the following six major European academy networks:

Academia Europaea

[Academia Europaea](#) is a European non-governmental association acting as an academy. It was established in 1988 as a pan-European academy of humanities, letters and sciences.

Its members are scientists and scholars who collectively aim to promote learning, education and research. With more than 5500 members, members of Academia Europaea are leading experts from

² <https://academies.fi/en/>

³ <https://akademien-schweiz.ch/en/uber-uns/>

⁴ <https://www.akademienunion.de/en/>

The origins of European academies and their role in today's scientific landscape

the physical sciences and technology, biological sciences and medicine, mathematics, the letters and humanities, social and cognitive sciences, economics and the law.

Members are drawn from across the whole European continent, and also include European scholars who are resident in other regions of the world, together with foreign members resident outside Europe. Membership is by invitation only; invitations are made after peer group nomination, scrutiny and confirmation as to the scholarship and eminence of the individual in their chosen field.

ALLEA

ALLEA, the [European Federation of Academies of Sciences and Humanities](#), was founded in 1994 and represents nearly 60 academies of sciences and humanities from approximately 40 EU and non-EU countries. ALLEA is constituted as a not-for-profit association.

Jointly with its members, ALLEA seeks to improve conditions for research, to provide the best independent and interdisciplinary science advice available, and to strengthen the role of science in society. Outputs include science-based advice in response to societally relevant topics, as well as activities to encourage scientific cooperation, scientific reasoning and values through public engagement.

ALLEA speaks on behalf of its members on the European and international stages, promotes science as a global public good, and facilitates scientific collaboration across borders and disciplines.

EASAC

The [European Academies' Science Advisory Council](#) is formed by the national science academies of EU member states, Norway, Switzerland and the UK, and was founded in 2001 at the Royal Swedish Academy of Sciences.⁵

EASAC's 30 member institutions collaborate with each other in giving advice to European policymakers. Through EASAC, the academies provide collective, independent, strictly evidence-based advice about scientific aspects of policy issues to those who make or influence policy and legislation within the EU institutions and in EU member states. EASAC aims to deliver advice that is comprehensible, relevant and timely. Drawing on its memberships and networks of academies, EASAC accesses the best of Europe's scientific expertise in performing its work. EASAC covers all scientific and

⁵ EASAC was a founding member of SAPEA, but did not participate for the funding period 2022–2024.

technical disciplines, focusing on challenging questions in the fields of environment, energy, and biosciences including public health.

Euro-CASE

The [European Council of Academies of Engineering Sciences](#) is an independent non-profit organisation of national academies of engineering, applied sciences and technology, or the technical divisions of national academies, from 22 European countries. It was founded in 1992 by the members of the Conseil pour les Applications de l'Académie des Sciences in France. Euro-CASE acts as a permanent forum for exchange and consultation between European institutions, industry and research.

Euro-CASE's mission is to foster European excellence in technology and engineering, sciences and practice, for the benefit of European society. It also aims to provide policymakers with science advice on technology by drawing on the experience of national academies, enrich the debate on the benefits of technological progress in a balanced and equitable manner, and facilitate an open dialogue across sectors and generations to solve global challenges.

FEAM

The [Federation of European Academies of Medicine](#) was founded in 1993 and is now a network of 24 member organisations across the European region (as defined by the World Health Organisation) that include national academies of medicine, pharmacy, veterinary sciences, and the medical divisions of national academies. It aims to promote cooperation between its members, to provide them with a platform to formulate and express their common position on European matters concerning human and animal medicine, biomedical research, education and health, and to extend to the European authorities the advisory role that they exercise in their own countries on those matters.

YASAS

In December 2020, 14 young academies in Europe established the Young Academies Science Advice Structure to provide a strong independent voice for young European scholars in science advice. Since the founding year, YASAS has grown to include 21 European national young academies. It is currently the only network of young academies for science advice in Europe.

Timeline of European academy networks

- 1988: Academia Europaea, a European non-governmental association acting as an academy, with around 5500 members from across Europe and beyond, operating through a network of hubs across Europe
- 1992: Euro-CASE, the European Council of 22 Academies of Applied Sciences, Technologies, and Engineering
- 1993: FEAM, Federation of European Academies of Medicine, 24 national academies of medicine and medical sections of national academies of sciences
- 1994: ALLEA, The European Federation of Academies of Sciences and Humanities, representing nearly 60 academies from over 40 countries in Europe
- 2001: EASAC, the European Academies' Science Advisory Council, formed by the national science academies of the EU Member States as well as Norway, Switzerland, and the United Kingdom
- 2022: YASAS, Young Academy Science Advice Structure, 21 young academies across Europe

Survey results

Survey methods and presentation of results

A list of the survey questions and more detailed methods are presented at the end of this report.

The survey was undertaken between February and July 2023 by the SAPEA consortium and was sent to representatives of 108 academies and two umbrella academy organisations⁶ which are members of the academy networks that form SAPEA, plus an additional 6 academies that were candidate members at the time (n=116). These included academies from 40 countries and three international academies (Academia Europaea, Global Young Academy, Young Academy of Europe).

The online questionnaire included a section with questions on the interaction of academies with SAPEA (Part III, 'Your academy and SAPEA', questions 18–22). These questions were intended to inform the SAPEA strategic development plan (2024). As such, the responses to these questions were analysed separately and are not included in this report.

The survey results are presented in the following sections. Academies of language and literature are included under academies of sciences, as is Academia Europaea. The Global Young Academy and Young Academy of Europe are both included as young academies. Umbrella organisations are included unless otherwise stated.

Survey participants

The survey achieved a 97% response rate (n=112) from the possible 116 academy respondents. Not all academies responded to all questions. The number of respondents is listed for each of the questions below.

⁶ Council of Finnish Academies and Swiss Academies of Arts and Sciences

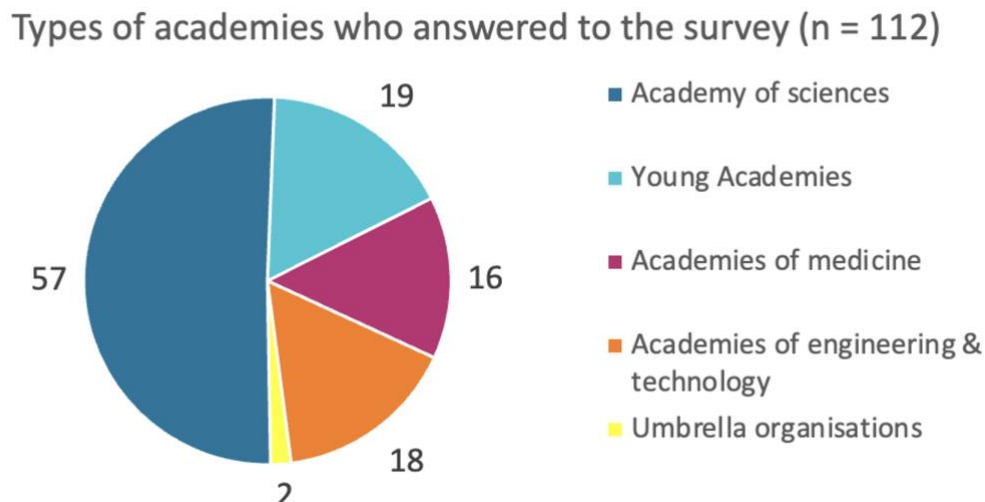


Figure 2. Types of academies that answered the survey. Note: The two umbrella organisations represent a total of eight academies.

Geographical representation of respondents

Ensuring wide geographical representation of experts participating in SAPEA activities is an important aspect of the SAPEA strategy for diversity and inclusiveness.⁷ To support this, the number of responding academies per country is shown in Figure 3, and coloured to show Widening and non-Widening countries. Widening countries are those with a low participation rate in Horizon Europe projects, as defined by the European Commission.⁸

⁷ <https://scientificadvice.eu/about-us/scientific-advice-mechanism/diversity-and-inclusiveness/>

⁸ https://rea.ec.europa.eu/horizon-europe-widening-who-should-apply_en

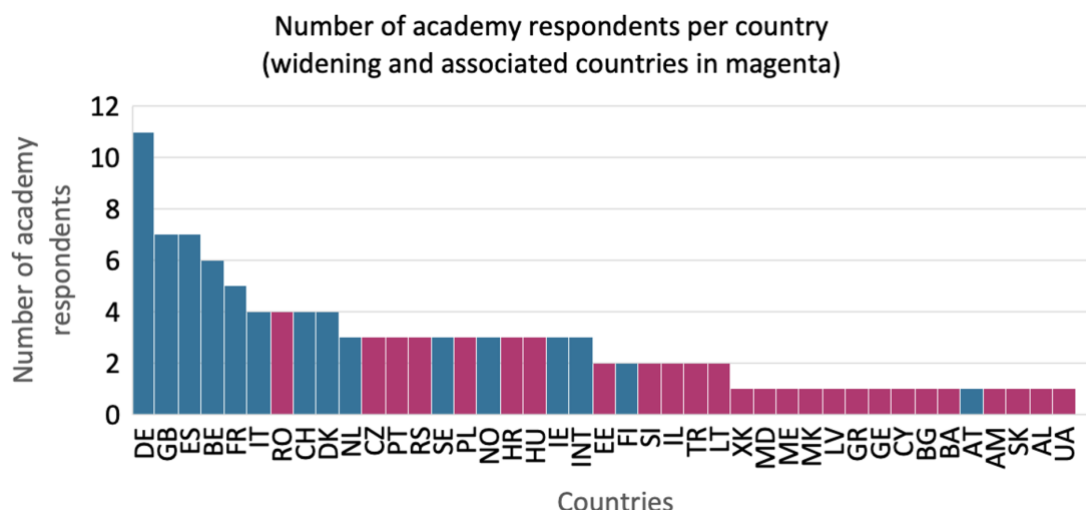


Figure 3. Number of responding academies per country (n=112, from 40 countries). Countries are listed using the ISO 3166–1 alpha-2 codes; 'INT' denotes international academies.

Of the 112 respondent academies, about 40% are in Widening countries. In general, non-Widening countries are more likely to have multiple academies associated with the European academy networks that constitute SAPEA.

Academy membership

Defining academy membership

If applicable, please explain the different memberships of your academy.

Full members

Full membership is the most common type of membership described by the academies. It includes full membership and voting rights within the academy. It exists in all academies under various titles: members, fellows, academicians, general members, ordinary members, regular members/fellows, academic fellows, full titular fellows, national members/fellows, domestic members, effective members. This list is based on responses gathered from 70 academies, with three of them specifying that full membership constituted their sole type of membership.

Several academies described the need for full members to be citizens or residents of the country or geographical area represented by the academy. Often, only members fulfilling these criteria can benefit from full voting rights.

Survey results

Foreign members

Out of 112 respondents, 42 academies provided information about a different type of membership based on the country of residence or country of citizenship of the member. Among these respondents, 18 academies described a foreign membership (also called international membership or foreign honorary membership) as a special type of membership in their academy without providing more information on criteria. Three academies described foreign membership as applying specifically for members who are not citizens of the country in which the academy is located. 20 academies described foreign members as members residing outside the country or geographical area represented by the academy. A few special cases were also described by some academies:

- One academy described supernumerary members as members who temporarily have their residence outside the geographical area represented by the academy.
- One academy described a specific domestic membership for members who are born in the country and now live abroad.
- One academy described corresponding members as members with no connection to the country or the country's research.

In many cases, academies specified that foreign members are exempt from paying membership fees, and/or do not benefit from voting rights.

Honorary members

32 academies out of 112 respondents described an honorary membership, also called academicians of honour, general honorary members, or honorary fellows. Generally, honorary members are described as members of strong academic excellence who have significantly contributed to their field but are not elected as fellows. Three academies described honorary membership as synonymous with emeritus membership.

Emeritus members

Emeritus membership (also called honorary membership or ordinary membership without duties) mostly reflects the setting of an age limit by academies for their members. This type of membership was described by 14 academies out of 112 responses. 11 academies described a change of status to an emeritus membership after a certain age is reached by the member. The age limits ranged between 70 and 80 years of age. At this point, various changes applied to the emeritus status, such as being relieved of member duties, retaining or losing the right to vote or participate in the decisions of the academy, or no longer being requested to pay membership fees. Two additional notable cases were also raised by the academies:

1. One academy described a maximum age of election for a member at 65 years old.

Survey results

2. One academy highlighted that membership in their academy stops once the member retires from their professional activity.

In contrast to emeritus status, academies also set age criteria for the inclusion of young researchers and professionals as members: see Inclusion of young members.

Corresponding members

The term 'corresponding members' was used by 37 academies out of the 112 respondents. Academies with corresponding members provided one of two different definitions for it:

- Some academies used the term to describe members outside the area of representation of the academy (i.e. equivalent to foreign members as described above).
- Some academies described this membership status as a first step required before being elected as a full member.

Associate members

Associate members were described by 12 academies out of the 112 respondents. The definition of this type of membership varied between academies and included either being a first step before full elected membership (also described above as corresponding membership), a status for eminent members outside the area of interest of the academy (also described as foreign membership), or a type of membership for those who are not academics by profession as a way to include them in the activities of the academy.

Other types of members

Additional types of membership were mentioned by a minor number of academies, without providing additional descriptive information. These included:

- societies/entrepreneur members representing the private sector (mentioned by five academies)
- extraordinary members (mentioned by four academies)
- supernumerary members (mentioned by two academies)
- delegated members (mentioned by one academy)
- constituency members (mentioned by one academy)
- supporting members (mentioned by one academy)
- council-recommended members (mentioned by one academy)
- founding members (mentioned by one academy)
- external members (mentioned by one academy)
- affiliate members (mentioned by one academy)

Inclusion of young members

Young academies memberships

Young academies offer a membership that is limited in duration, typically between four to five years, given that, by definition, young academies represent scholars and professionals in an early stage of their careers. This is a major difference compared to other types of academies, where membership will last for the lifetime of the elected member (with the potential exceptions and conditions mentioned above). Young academy members are elected for a defined length of time. In some young academies, membership may continue through an alumni network.

Out of 19 young academies which provided answers to the survey, four clarified that they only applied a single membership type (full member), seven young academies specified that the duration of membership was five years, and one academy specified that membership lasted four years. Three young academies provided information about different membership types, notably:

- a fixed number of executive members (who benefit from voting rights) and an open number of supporting members (physical or legal persons with all other rights except for the voting rights)
- an At-Risk Academic and Refugee Professional membership, which includes members who join through a dedicated application process for individuals with a refugee, asylum-seeking or displaced migrant background. These members do not pay fees, but have the same voting rights, membership conditions, and length of membership as members who do not come in through this programme
- 40 full members who work in the country in which the academy is located and up to ten international members who work abroad but who are affiliated with a local research institution

Finally, four young academies out of 19 respondents also reported the existence of an alumni membership. In academies where membership has an end date, the alumni programme allows former members to keep engaging with the activities and network of the academy without benefitting from full membership rights. One academy also created a special Alumni Plus programme to account for the fact that members could not make the most of their membership during the years of the COVID-19 pandemic. In this programme, affected members can stay on for one additional sixth year, with most full member rights. The category will automatically stop when the last membership cohort that was affected by the pandemic has come to the end of its term.

Survey results

Membership of young researchers and professionals in other academies

Out of the 112 respondents to the survey, three academies counted in their membership the members of the young academy associated with their 'senior' academy. Additionally, two other academies described a specific membership type for including young researchers and professionals in their membership: junior members (under 40, members for five years) and young innovators, respectively.

Four additional 'senior' academies provided information on programmes which are not membership-based but provide opportunities for the formal inclusion of young researchers and professionals in the activities of the academy. These included a Young Forum for selected post-doctoral researchers, a Young College which organises annual calls for proposals, and a Leadership Programme for Young Leaders.

Number of members in the academies

How many full/ordinary elected members does your academy have?

The median number of members reported by the 109 respondent academies was 156, for all membership types combined. Membership numbers varied vastly between types of academies, ranging from 16 to 5400 members.⁹

Figure 4 shows the distribution of membership numbers for the different types of academies, based on the answers from 56 academies of sciences, 19 young academies, 16 academies of medicine, and 18 academies of engineering. Academies of sciences have everything from small to large cohorts. In comparison, academies of engineering and technology and academies of medicine have mainly medium-sized cohorts, reporting maximum values of 1673 and 1396 respectively. Young academies report the smallest cohorts, with a median of 40 members. They range from 16 members to the exceptionally large global academy reporting 200 members; a main reason for small cohorts is that their membership is limited to a certain number of years and so the number of members does not accumulate over time.

⁹ During post-survey analysis, the number of members from Academia Europaea (5400) was added to the database as this was missing from the survey response. Additionally, these figures do not include national umbrella organisations, as they compile numbers of multiple academies in one figure.

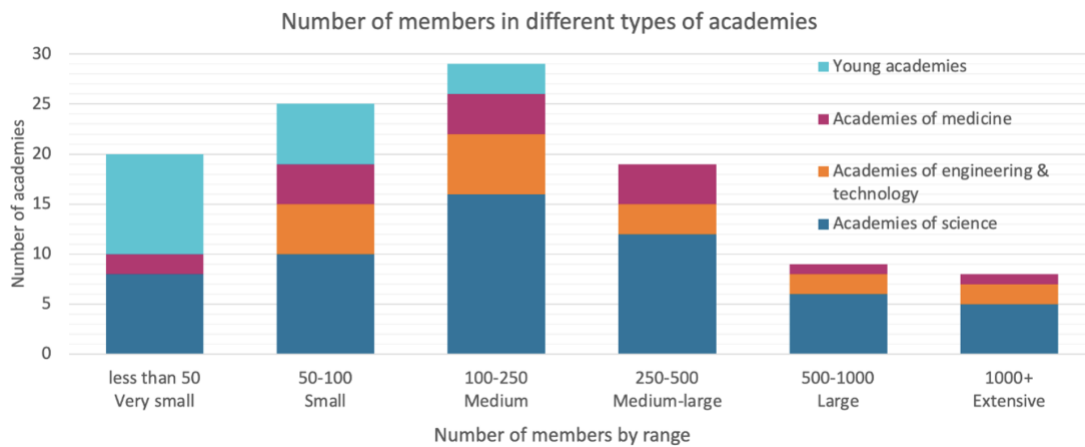


Figure 4. Distribution of the number of members across different types of academies ($n=109$, including 56 academies of sciences, 19 young academies, 16 academies of medicine, 18 academies of engineering and technology). This figure does not include national umbrella organisations, as they compile the membership numbers of multiple academies into a single number.

Resources of the academies

One of the purposes of the survey was to investigate the capability of the academies to provide science advice to policy and society. To support this aim, the survey included questions about capacity and resources in terms of staff levels and funding.

As discussed in the Limitations section, some survey responses appeared inconsistent with known information about the academies. It is suspected that the range in academy roles and function has led to a lack of clarity as to the survey question. For example, in reporting the number of staff for the purpose of the survey, some may have included research staff, leading to much higher overall staff numbers than those who only reported staff who perform activities directly associated with learned societies.

While this makes it difficult to draw conclusions on the specific resources of individual academies, particularly those pertaining to their capacity to provide science advice for policy, it adds to an overall picture of a diverse landscape of academies.

As SAPEA repeats the survey in the future, the resourcing and capacity of academies will be an area of focus, towards better understanding the resources of academies and how they may impact their ability to provide science advice.

Survey results

Number of staff members of the academies

How many staff members does your academy employ? Of these, how many are full-time and how many are part time?

Corresponding to the variation in membership numbers, academies also reported a large range of numbers of staff.

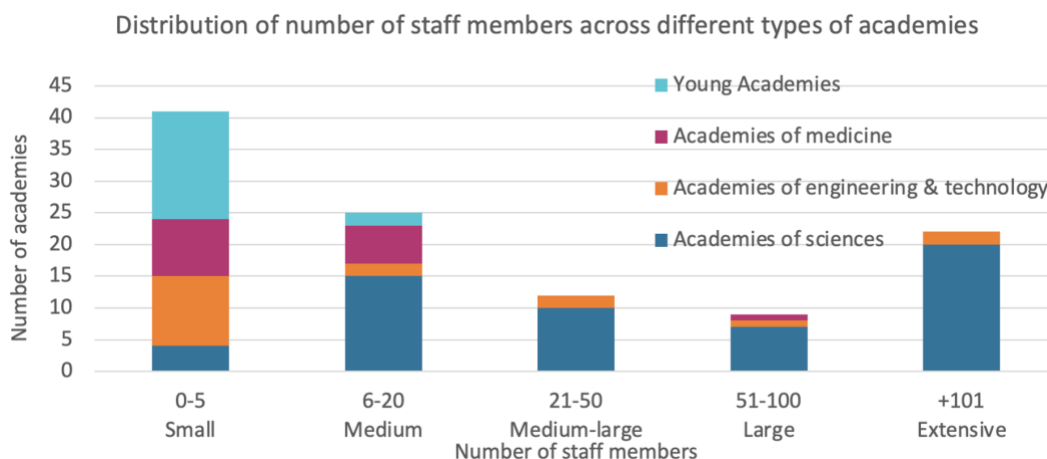


Figure 5. Number of staff members in academies (n=110, including 56 academies of sciences, 19 young academies, 16 academies of medicine, 18 academies of engineering and technology). This figure does not include national umbrella organisations, as they compile the membership numbers of multiple academies into a single number.

Most academies reported having between 1 and 20 staff members. Academies of sciences report a wide range of staff numbers, from small (0–5 staff) to extensive (over) 100 staff members. 58% of responding academies (n=109) reported having part-time staff, with 14 academies reporting all their staff to be working at the academy part-time.

In general, young academies reported the lowest numbers of staff, with the highest response to this question being seven members of staff. A third of young academies (7) reported only part-time staff.

Funding resources of the respondents

What is the annual budget of your academy (in euro)? What are the current sources of funding for your academy?

Responses to questions around academy funding describe a varied picture. Some academies reported very high annual budgets, which suggests they may have included budget beyond that of their learned society related activities. There were also some very low reported annual budgets which do

Survey results

not seem plausible. Therefore, the range, median and quartile responses are reported for completeness but without further interpretation.

The range of annual budgets reported by academies was between 10.28€ and 230 958 950€. 50% of academies reported an annual budget of between 142 500€ and 8 657 637€, with a median reported annual budget of 1 200 000€.

Sources of funding

Academies were asked to provide details on the sources of their annual budget, choosing from the following checklist options:

- institutional funding from national or local government
- project funding from national or local government
- national research funds or councils
- grants from universities
- business (industry, private companies)
- Other private funds (foundations, trust funds)
- income from own activities (room rental, events, publishing)
- membership income
- EU project funding
- donations and legacies
- other (please specify)

Data was cleaned to remove non-respondents and distribute funding allocations where they had been reported in the free-text response. An additional category of "Funding from another academy" was created based on the free-text responses and proportions added accordingly.

Figure 6 shows the number of academies who reported different sources of funding and illustrates the broad variety of funding sources that are financially supporting academies. These figures do not give an indication of the proportion of funding from each source (responses were counted if they reported the variable as a funding source above 0%).

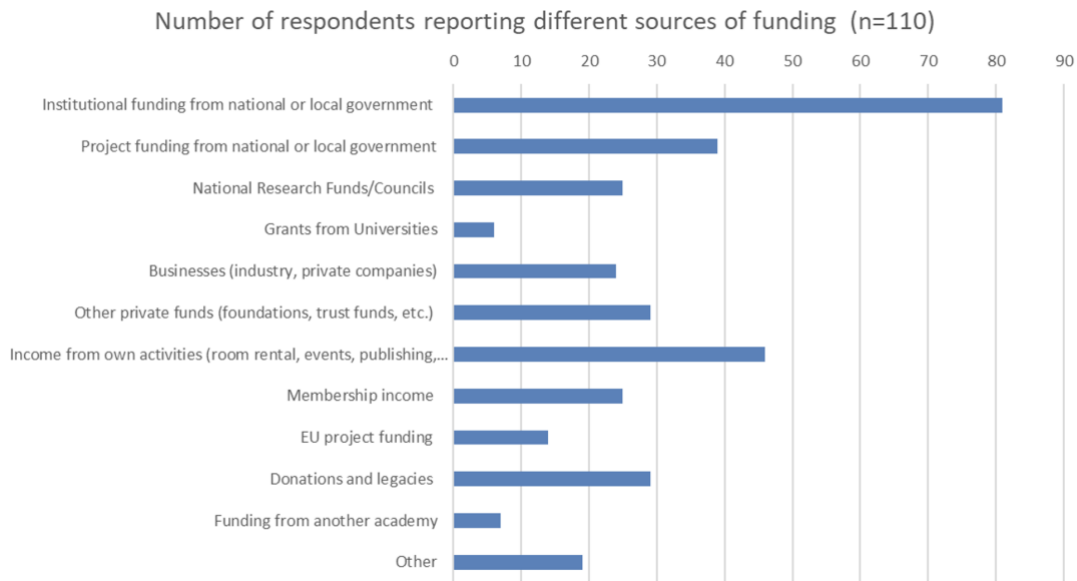


Figure 6. Distribution of responses for each funding source (n=110). Academies could select multiple options.

The most frequently reported source of funding was 'Institutional funding from national or local government'. 32 respondents reported this as a source of over 80% of their funding.

Activities of the academies (activities, events, publications)

Academies are engaged in a variety of activities. Our survey asked about the following options:

- policy advice for government
- advice for the wider society
- organising conferences and events
- networking among academy members
- maintaining a publishing programme
- public engagement (with schools, through citizen science etc.)
- engaging young researchers
- engaging other stakeholders (such as the private sector, NGOs, universities, etc)
- prizes and awards activities
- other (please specify)

The academies were able to choose multiple responses, and the figure below presents the distribution of responses per activity, for a total of 112 responses, including two national umbrella organisations.

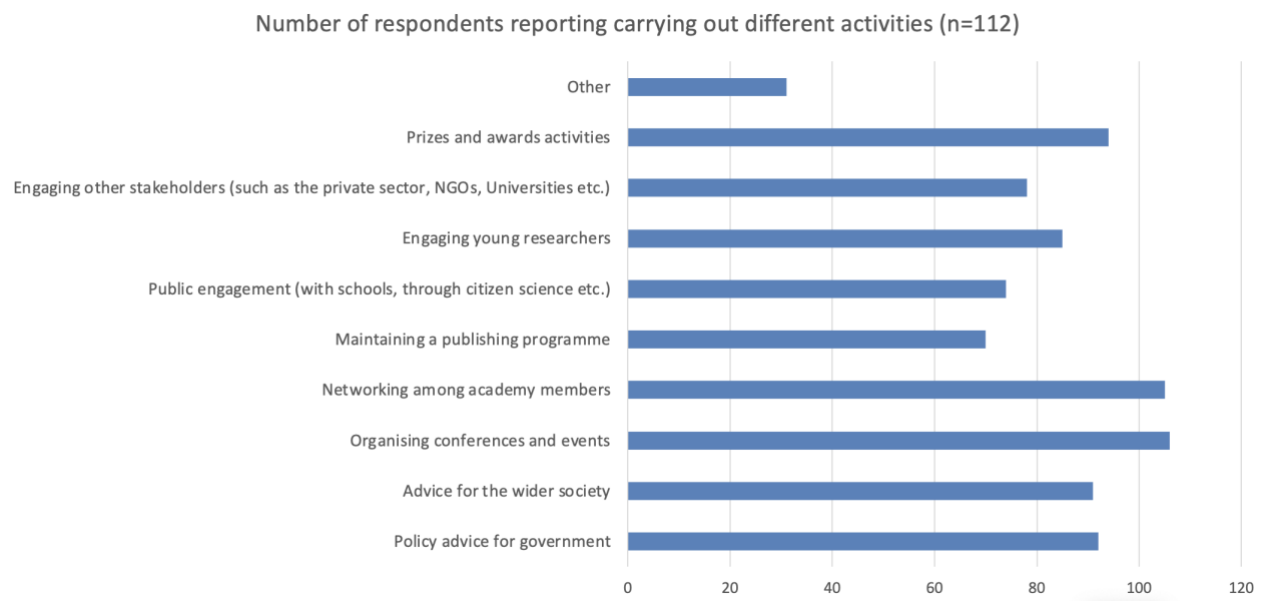


Figure 7. Distribution of responses per activity (n= 112). Academies could select multiple options.

The results show that almost all academies dedicate time, effort and resources to networking activities among academy members, organising conferences and events, and conducting prizes and awards activities. Around 80% of academies also carry out science advice activities to governments, as well as to society at large. Between 60 and 70% of all respondents also reported activities related to the engagement of other stakeholders, the engagement of young researchers, public engagement and maintaining a publishing programme.

Other activities reported by the academies as part of free text responses included scientific research, research funding, training, capacity-building and mentoring programmes, science diplomacy, inventory and cataloguing programmes for scientific collections, preservation of historical legacy (manuscripts, incunabula, old books and scientific collections), organising and monitoring of the conducting of national good clinical practice guidelines.

Cooperation among academies

As described earlier, cooperation between academies can allow the cross-pollination of good practice and perspectives from the research community across Europe. Survey respondents were asked to identify the main types of collaboration and the extent of international and stakeholder collaboration.

Cooperation among academies in the same country

Does your academy cooperate with other academies within your country? If applicable, please name these academies and briefly describe how you cooperate with them.

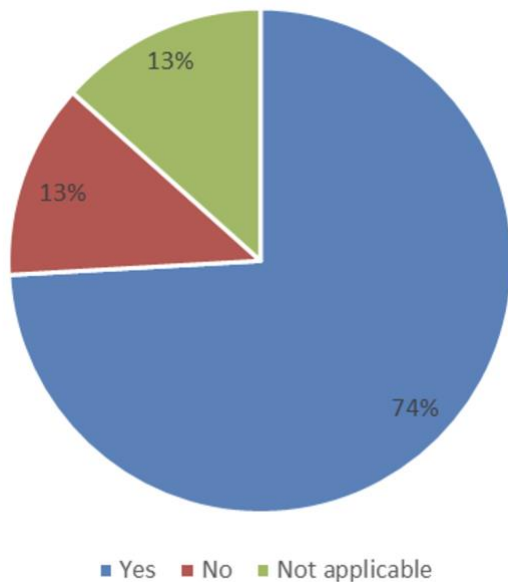


Figure 8. Academies cooperating with other academies in their country (n=112).

Most countries represented in the European academy networks host more than one academy, with academies covering different fields of expertise, regional academies, young academies among others. Results show that over 70% of respondents cooperate with other academies and learned societies within their country. This cooperation sometimes occurs through a national umbrella organisation such as in Switzerland, Germany or Finland.

As reported by the academies, these collaborations take several forms, such as joint meetings, publications, projects, and policy advice. Additional examples of collaboration included financial and infrastructure support, joint training sessions, nominations of experts to expert groups, common archives and libraries, and general information-sharing and support. Respondents described that some collaborations are formalised through agreements, while others are more informal.

13% of the respondents answered that they do not cooperate with other academies, and 13% do not find this question is applicable for them. Some reasons given for this include when there is only one academy in the country, when an academy is embedded within another (which can often be the case for young academies), or when no cooperation takes place with other academies or learned societies in their country.

International collaborations with other academies

Beside the academy networks (Academia Europaea, ALLEA, EASAC, Euro-CASE, FEAM, and YASAS), do you have further active cross-border collaborations with academies in Europe? If applicable, briefly describe your strategy of engagement with other academies in Europe.

Almost two thirds of all respondents engage in bilateral and multilateral activities across national boundaries, in addition to membership of the academy networks mentioned above:

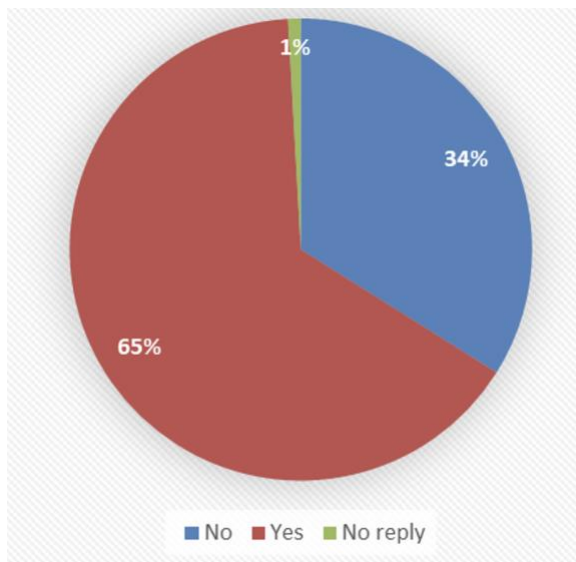


Figure 9. Academies cooperating with other academies outside their country (n=112).

These collaborations and agreements are primarily between European countries, and often between national academies that are in close geographical proximity to one another. Some academies serve as hubs, furthering regional integration and cooperation between academies. Furthermore, worldwide joint commitments extend to academies outside of Europe: the United States and Latin America were mentioned in the responses.

A range of activities takes place between academies and other organisations, including joint programmes and research projects with a focus on specific scientific topics, exchange programmes, events, and annual meetings. Academies also provide networking opportunities and a platform for scientists to share their research findings. Furthermore, collaboration among academies facilitates the exchange of high-profile speakers, provides co-authoring opportunities for scientific articles and policy briefings, and supports the pursuit of topics of mutual interest. These collaborations help create a common space for scientific and cultural endeavours and assist the creation of similar academies in other countries.

Survey results

Outside of direct collaborations, academies participate in various networks and memberships. These include global networks such as:

- [InterAcademy Partnership](#) (IAP)
- [International Council of Academies of Engineering and Technological Sciences](#) (CAETS)
- Union Académique Internationale (UAI)
- [International Science Council](#) (ISC)
- [Council for International organisations of Medical Sciences](#) (CIOMS)¹⁰

In addition, there are existing partnerships with organisations such as the [National Academies of Sciences, Engineering, and Medicine](#) (US).

At European level, several organisations were mentioned, including:

- [European Alliance of Academies](#) (a network of art academies and cultural institutions across Europe)
- European National Young Academies (ENYA)
- [European Science Advisors Forum](#) (ESAF).¹¹

Regional networks also play crucial roles in the European context, including:

- Network for Nordic and Baltic Young Academies
- the [Euro Mediterranean Academic Network](#) (EMAN)
- [Visegrád Group](#), a cultural and political alliance between the Czech Republic, Hungary, Poland, and Slovakia

Finally, academies contribute to international initiatives and networks, such as:

- [International Year of Basic Sciences for Sustainable Development](#) (IYBSSD 2022)
- [Coalition for Advancing Research Assessment](#) (CoARA)
- [Gago Conferences on European Science Policy](#)

¹⁰ <https://cioms.ch/>

¹¹ <https://esaforum.eu/>

Collaboration with other stakeholders

Which other organisations are collaborating with your academy?

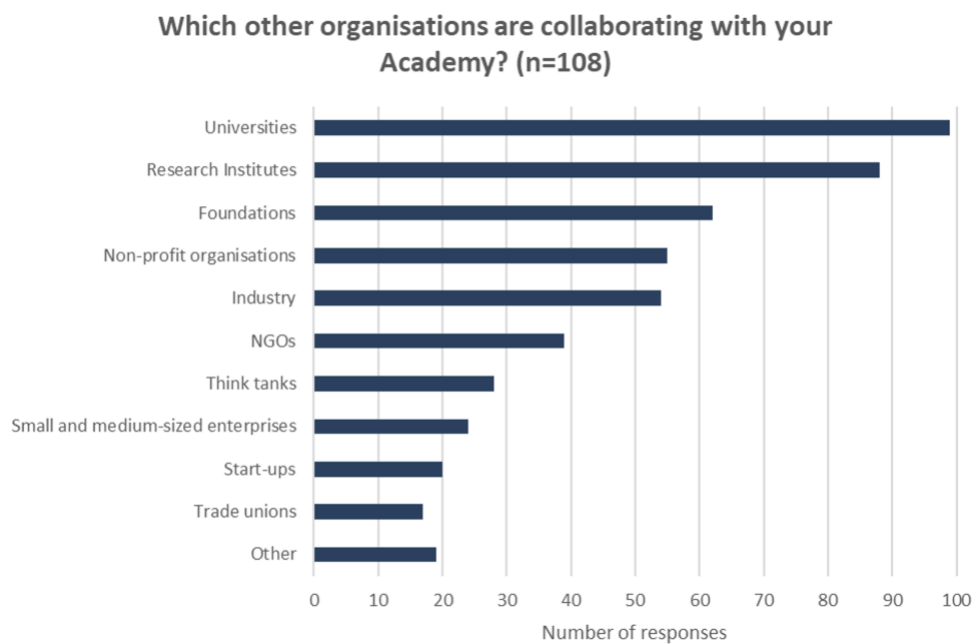


Figure 10. Academies collaborating with different types of organisations (n=108, including 56 academies of sciences, 18 young academies, 16 academies of medicine, 18 academies of engineering and technology).

Academies collaborate with a range of stakeholders across different sectors. The trends in the types of stakeholders they collaborate with were similar across different types of academies, with most collaborations being with universities and research institutes.

Other types of organisations given as collaborators included:

- other academies (6 respondents)
- partners in the broader research ecosystem (e.g. funders, umbrella organisations) (4 respondents)
- medical organisations or facilities (3 respondents)
- government and agencies (3 respondents)
- multi-lateral organisations (3 respondents)
- business (1 respondent)
- museums (1 respondent)

Diversity and inclusion in the academies

Inclusivity, including gender balance and inclusion of early-career researchers, is an important aspect of the SAPEA strategy for diversity and inclusiveness.¹² The survey collected data regarding the percentage of women and of early-career academy members and whether academies had a policy for diversity in place.

Inclusion of women in academy membership

Please indicate the percentage of members of your academy who are women.

The results presented in this section must be handled with caution. As explained earlier, this data depends largely on how the number of members/fellows were reported by the academies in the context of this survey, which can vary a lot depending on the structure of their organisation, membership categories. Data collection processes within academies can also differ, and different academies collect different types of information. This also means that the data collected is not always comparable. For example, some academies are mainly research-performing organisations and reported the number of researchers employed by the academy, while others reported the number of elected fellows.

While analysing the data, some academies were contacted to try and verify some of the figures reported. A threshold of 30% women members was chosen based on the survey responses, as most academies reported fewer than 30% women members. For responses above 30%, we attempted to verify the data, either through consulting academies' websites (if information was available), or by contacting the academies. Of the 30 verified responses, 20 were confirmed, 7 were updated and 3 could not be confirmed.

¹² <https://scientificadvice.eu/about-us/scientific-advice-mechanism/diversity-and-inclusiveness/>

Survey results

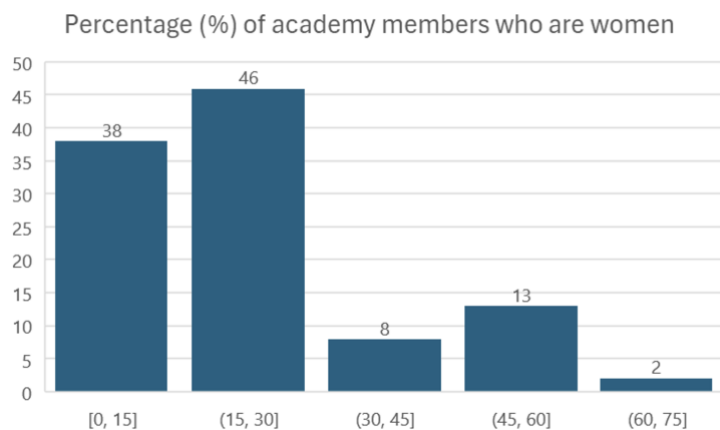


Figure 11. Percentage of academy members who are women (n=107).

Figure 11 shows that 38 of the 107 responding academies (35%) reported fewer than 15% women in their total fellowship, and 46 academies (43% of the responses) reported between 15% and 30%. 23 academies reported that over 30% of their members are women; 18 of those (78%) are young academies.

Diversity in career stage in academy membership

Please indicate the percentage of members of your academy who are early- and mid-career professionals (EMCRs, professionals up to 19 years after completing their PhD).

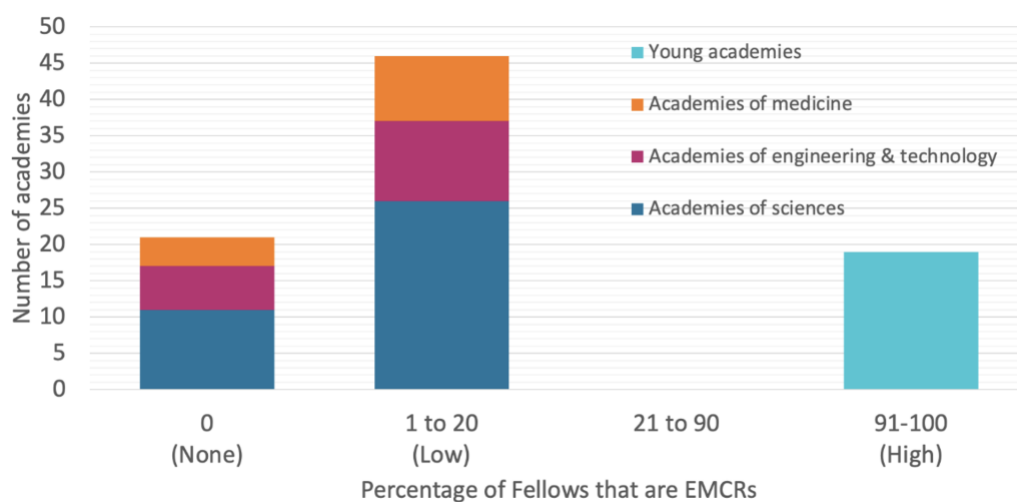


Figure 12. Percentage of EMCR members in each academy (n=93, including 42 academies of science, 19 young academies, 15 academies of medicine, 17 academies of engineering). 21 academies responded as 'non-applicable' or left the answer blank. Umbrella organisations are not included.

All young academies which responded to the survey are entirely composed of early- and mid-career professionals. Early and mid-career researchers accounted for up to 20% of the membership of other academies.

Survey results

Some academies do not collect data on career stage of their membership.

Diversity and inclusion policies

Does your academy have a written policy on diversity and inclusion? If yes, please briefly explain what it covers or include a link if available.

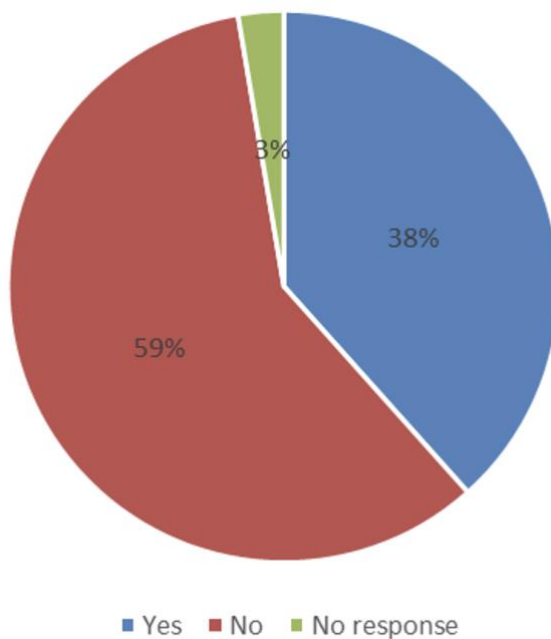


Figure 13. Academies with a written diversity policy (n=112).

Nearly 40% of responding academies reported having a written policy on diversity and inclusion. Around 60% reported no written policy, although some of those respondents explained that there was awareness of the issue and measures were being implemented. Seven academies reported that their written policies were currently being developed.

Existing written policies are diverse and range from broad commitments to tackle unconscious bias, provide equal opportunities and respecting diversity and inclusion, to actual target-setting. They take the form variously of statutes, policies, strategies, public commitments, codes of conduct, action plans, and others. They apply variously to job applicants, employees, fellows and members, and to other processes where academies select individuals (e.g. grant applicants, event participants, and so on).

According to responses, diversity and inclusion policies focus on:

- equal opportunities regardless of gender, nationality, religion or belief, disability, marital status, age, sexual orientation and identity, political or institutional affiliation, property or rank status, place of residence

Survey results

- gender balance, including in leadership
- measures against gender-based violence
- equity
- work-life balance
- inclusion of scholars beyond the national level
- ensuring that the membership reflects the research population in the country
- inclusion of foreign researchers
- inclusion of young scholars

In the open-ended responses, a few practices relating to equality and diversity can also be identified, such as:

- academy working groups dedicated to questions relating to equal treatment regardless of gender, ethnicity, religion or belief, age or sexual orientation
- academy committees to guide academy actions and protocols for better inclusiveness
- publication of gender equality reports and action plans
- development of specific grant schemes designed to support researchers raising young children or disabled or chronically ill children
- workshops with members to foster good practice for better inclusiveness
- monitoring and evaluation plans that can help measure progress and act accordingly.

Main conclusions and future outlook

This report presents, for the first time, an overview of the European academy landscape, providing information about their founding, role and development in Europe, and highlighting their diversity in terms of size, resources and the types of activities they conduct. It presents highlights from a literature review, and a compilation of answers based on a survey from 112 academies.

The survey responses also revealed challenges in the methodology adopted to conduct the survey, including inconsistencies in how the data is reported and interpreted by academy respondents. This limited the ability to draw definitive conclusions about the academies' characteristics. Despite these limitations, the report highlights the important and active role that academies play in science and society. The survey also suggests a growth of young academies and efforts by academies towards increasing diversity within their membership, which is needed to ensure a democratic and inclusive science advice input into European policy.

This first survey of academies by SAPEA has identified areas where we would like to investigate the variation across academies in more detail. We will reevaluate data collection methods in future to better understand the capacity of academies to provide science advice.

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Methods

Online survey sent to participants

Introduction for participants

You are invited to participate in the first ever comprehensive study of the Academy landscape in Europe. Data collected in this survey will demonstrate the capability of the academies across Europe to provide science advice to policy and society.

The information we gather will be published in a summary report. In addition, the raw data will be made publicly available. These will be anonymised so that individual Academies and respondents cannot be identified.

To make sure that your Academy is fully represented, please complete the short survey below, which should only take around 15 minutes of your time.

Please note that this survey collects information on Academies as learned societies. Therefore, please do not include activities of other organisations that might be included under the umbrella of your Academy (e.g. long-term research projects, research institutes, funding bodies, etc.). This refers to all questions in this survey.

The survey is offered by SAPEA (Science Advice for Policy by European Academies), a consortium which comprises over 120 academies from more than 40 countries in Europe.

Consent to participate

- I hereby agree to participate in this survey aimed at gathering information on European Academies and their feedback on SAPEA. Although the results will be summarised in a written report that will be openly accessible, my name and the name of my institution will be treated as confidential and will not be linked directly to any data or quote. A list of responding institutions will be shared in the report, without the name of their representative. I understand that direct quotations from my organisation's completed questionnaire may be used, but without mentioning my name or the name of my institution in order to protect my anonymity. SAPEA plans to contact your academy in approx. 3 years to update the information provided.

Methods

Please click “yes” below if you agree for SAPEA to store and process your data, in compliance with GDPR and the SAPEA data management plan.

Part I: About your Academy

1. (MANDATORY) Name of Academy.
2. (MANDATORY) Name, job title and email address of the person filling out the survey on behalf of the Academy.
3. How many full/ordinary elected members does your Academy have? If applicable, please explain the different memberships of your Academy.
4. How many staff members does your Academy employ? Of these, how many are full-time? Of these, how many are part-time?
5. What is the annual budget of your Academy (in Euros)?
6. What are the current sources of funding for your Academy? Please add an indication about the percentage for each of the following categories.
 - Institutional funding from National and local government
 - Project funding from National and local government
 - National Research Funds/Councils
 - Grants from Universities
 - Businesses (industry, private companies)
 - Other private funds (foundations, trust funds, etc.)
 - Income from own activities (room rental, events, publishing, investments etc.)
 - Membership income
 - EU project funding
 - Donations and legacies
 - Other
7. If you added a percentage in the “Other” box above, please provide additional information.

Part II: Activities of your Academy

What are the activities of your Academy? Answers (tick all that apply):

- Policy advice for government
- Advice for the wider society
- Organising conferences and events
- Networking among Academy members
- Publishing programme
- Public engagement (with schools, through citizen science etc.)
- Engaging young researchers

Methods

- Engaging other stakeholders (such as the private sector, NGOs, Universities etc.)
 - Prizes and award activities
 - Other, please specify.
8. Approximately how many publications (annual or scientific reports, policy documents etc.) were published by your Academy in the past 12 months?
 9. On average, how many external-facing/public events did your Academy organise or co-organise last year?
 10. Does your Academy cooperate with other Academies within your country? If applicable, please name these academies and briefly describe how you cooperate with them.
 11. Beside the Academy Networks (Academia Europaea, ALLEA, EASAC, Euro-CASE, FEAM, and YASAS), do you have further active cross-border collaborations with academies in Europe?
 12. If applicable, briefly describe your strategy of engagement with other Academies in Europe.

Which other organisations are collaborating with your Academy? Answers (tick all that apply):

- Industry
- Small and medium-sized enterprises
- Start-ups
- Universities
- Research Institutes
- Think tanks
- NGOs
- Trade unions
- Foundations
- Non-profit organisations
- Other, please specify

Part III: Your Academy and SAPEA

Part III questions 'Your Academy and SAPEA' (18–22) are not included in this report. These questions were analysed separately and used to inform the SAPEA strategic development plan (2024).

13. Has your Academy been involved in SAPEA, for example, by nominating experts or organising events?
14. If no: what are the reasons why your Academy has not been involved in SAPEA?
15. If yes: What have been the main benefits of working with SAPEA?
16. If yes: What have been the main challenges of working with SAPEA?
17. If yes: How can SAPEA improve or develop in the future?

Part IV: Diversity and inclusion

18. Please indicate the percentage of members of your Academy who are women.
19. Please indicate the percentage of members of your Academy who are early- and mid-career professionals (EMCPs, professionals up to 19 years after completing their PhD).
20. If your Academy employs other means of involving EMCPs in its activities, please specify.
21. Please indicate the percentage of members of your Academy who are retired from their profession.
22. Does your Academy have a written policy on diversity and inclusion? If yes, please briefly explain what it covers or include a link if available.

Part V: Comments and contact

23. Do you have any other helpful comments?

Survey tool and process

Survey questions were developed by a SAPEA working group and staff task force. Once the questionnaire had been approved by the SAPEA Board, the survey questions were implemented into the online survey tool SurveyMonkey. The link to the survey was distributed by Scientific Policy Officers to the academies which are members of the European academy networks that comprise SAPEA. To increase the response rate, academies were individually invited to provide answers to the survey between March and August 2023 via email and telephone calls.

Analysis methods

Once collected, the answers were collated into a spreadsheet and analysed with support from Sejal Davla, a freelance data analyst. Qualitative (free text) answers were sorted by and summarised in the survey report. The number of academies responding for each question are mentioned below each figure. Analysis tools included Microsoft Excel and R.

Acknowledgments

Working group members

- Euro-CASE: Elin Elliot (Chair), Head of International Affairs at the Royal Swedish Academy of Engineering Sciences and Alternate Euro-CASE Board Member for Sweden
- Academia Europaea: Ole Petersen, Vice President of AE, Director of the Cardiff University - Academia Europaea Knowledge Hub and Alternate Member of the SAPEA Board
- FEAM: Dominique Bron, Vice President of FEAM, Member of the Royal Belgian Academy of Medicine, Professor of Medicine/Haematology at the Free University of Brussels (ULB), Member of the National Committee of Bioethics
- ALLEA: Paweł Rowiński, Vice-President of the Polish Academy of Sciences (PAS), Member of the ALLEA Board, and Alternate SAPEA Board Member
- YASAS: Moniek Tromp, Young Academy of Europe Vice-Chair, President of YASAS, and SAPEA Board Member

The working group was supported by SAPEA staff who also produced this report.

Data analyst

Sejal Davla, data analyst and consultant

List of respondents

- Academia Europaea
- Académie des sciences
- Académie Royale de Médecine de Belgique
- Académie royale des Sciences, des Lettres et des Beaux-Arts de Belgique
- Academy of Athens
- Academy of Engineering Sciences of Serbia (AESS)
- Academy of Medical Sciences of Romania
- Academy of Sciences and Arts of Bosnia and Herzegovina (ANUBiH)
- Academy of Sciences and Humanities in Hamburg (Akademie der Wissenschaften in Hamburg)
- Academy of Sciences and Literature, Mainz (Akademie der Wissenschaften und der Literatur, Mainz)
- Academy of Sciences of Albania (ASA)
- Academy of Sciences of Lisbon - Academia das Ciências de Lisboa
- Academy of Sciences of Moldova
- acatech - National Academy of Science and Engineering
- Accademia delle Scienze di Torino
- Accademia Nazionale dei Lincei
- Accademia Nazionale di Medicina
- Austrian Academy of Sciences (OeAW)
- Bavarian Academy of Sciences and Humanities (Bayerische Akademie der Wissenschaften)
- Berlin-Brandenburg Academy of Sciences and Humanities (BBAW) Berlin-Brandenburgische Akademie der Wissenschaften
- Bulgarian Academy of Sciences
- Council of Finnish Academies
- Croatian Academy of Engineering
- Croatian Academy of Medical Sciences
- Croatian Academy of Sciences and Arts
- Cyprus Academy of Sciences, Letters, and Arts
- Czech Medical Academy
- Danish Academy of Technical Sciences (ATV)
- Danish Young Academy
- Engineering Academy of the Czech Republic
- Estonian Academy of Sciences
- Estonian Young Academy of Sciences
- French Academy of Medicine
- French Academy of Pharmacy - Académie nationale de Pharmacie
- French Academy of Veterinarians
- Georgian National Academy of Sciences (GNAS)
- German Young Academy - Die Junge Akademie
- Global Young Academy (GYA)
- Heidelberg Academy of Sciences and Humanities
- Hungarian Academy of Engineering
- Hungarian Academy of Sciences
- Hungarian Young Academy
- Institute for Catalan Studies - Institut d'Estudis Catalans
- Irish Academy of Engineering

List of respondents

- Israeli National Academy of Science in Medicine
- Italian Academy of Engineering and Technology (ITATEC) Accademia di Ingegneria e Tecnologia
- Kosova Academy of Sciences and Arts
- Latvian Academy of Sciences
- Learned Society of the Czech Republic
- Lithuanian academy of sciences
- Lithuanian Academy of Sciences Young Academy
- Macedonian Academy of Sciences and Arts
- Montenegrin Academy of Sciences and Arts
- National Academy of Sciences Leopoldina (Deutsche Akademie der Naturforscher Leopoldina)
- National Academy of Sciences of the Republic of Armenia
- National Academy of Technology of France (NATF) - Académie des Technologies
- National Academy of Medicine of Portugal - ACADEMIA NACIONAL DE MEDICINA DE PORTUGAL
- Netherlands Academy of Technology and Innovation (AcTI)
- North Rhine-Westphalia Academy of Sciences and Arts
- Norwegian Academy of Technological Sciences (NTVA)
- Polish Academy of Arts and Sciences / Polska Akademia Umiejętności (PAU)
- Polish Academy of Sciences
- Polish Young Academy (Akademia Młodych Uczonych)
- Portuguese Academy of Engineering - Academia de Engenharia
- Romanian Academy
- Romanian Young Academy
- Royal Academy of Engineering
- Royal Academy of Engineering of Spain - REAL ACADEMIA DE INGENIERIA .(RAI)
- Royal Academy of Medicine of Belgium (Koninklijke Academie voor Geneeskunde van België, KAGB)
- Royal Academy of Veterinary Sciences of Spain (RACVE)
- Royal Flemish Academy of Belgium for Science and the Arts (Koninklijke Vlaamse Academie van België voor Wetenschappen en Kunsten, KVAB)
- Royal Flemish Academy of Dutch language and literature (Koninklijke Academie voor Nederlandse Taal en Letteren)
- Royal Irish Academy
- Royal Netherlands Academy of Arts and Science
- Royal Society of Edinburgh
- Sächsische Akademie der Wissenschaften zu Leipzig
- Schweizerische Akademie der Technischen Wissenschaften (SATW)
- Science Academy Türkiye - Bilim Akademisi
- Serbian Academy of Sciences and Arts
- Slovak Academy of Sciences
- Slovenian Academy of Engineering
- Slovenian Academy of Sciences and Arts
- Spanish Royal Academy of Mathematical, Physical and Natural Sciences (for brevity, Royal Spanish Academy of Sciences) - Real Academia de Ciencias Exactas, Físicas y Naturales de España
- Spanish Royal Academy of Medicine (Real Academia Nacional de Medicina de España)
- Swiss Academies of Arts and Sciences (umbrella organisation of 4 academies: Swiss Academy of Sciences, Swiss Academy of Medical Sciences, Swiss Academy of Humanities and Social Sciences, Swiss Academy of Engineering Sciences)
- Swiss Academy of Medical Sciences
- Swiss Young Academy

List of respondents

- Technical Sciences Academy of Romania (ASTR)
- The Academy of Medical Sciences of the Serbian Medical Society
- The British Academy
- The Göttingen Academy of Sciences and Humanities in Lower Saxony
- The Israel Academy of Sciences and Humanities
- The Learned Society of Wales
- The National Academy of Sciences of Ukraine
- The Norwegian Academy of Science and Letters
- The Royal Academy of Sciences and Arts of Barcelona - Reial Acadèmia de Ciències i Arts de Barcelona (RACAB)
- The Royal Danish Academy of Sciences and Letters
- The Royal Society
- The Royal Swedish Academy of Engineering Sciences, IVA
- The Royal Swedish Academy of Sciences
- The RSE Young Academy of Scotland
- Turkish Academy of Sciences
- UK Academy of Medical Sciences
- YATSI: Young Academy of Technology, Science, and Innovation
- Young Academy Finland
- Young Academy Netherlands (De Jonge Akademie)
- Young Academy of Belgium
- Young Academy of Europe
- Young Academy of Ireland
- Young Academy of Norway (AYF) / Akademiet for yngre forskere
- Young Academy of Spain
- Young Academy of Sweden



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