



GLOBAL
YOUNG
ACADEMY

2017



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2017

GYA in 2017

The overall goal of the GYA is to nurture a global ecosystem of the next generation of science leaders, committed and capacitated to effect positive change in society. In the past year, five categories of activities have emerged from the wide range of activities that GYA Members have driven.

Some of these activities are summarised here, and a selection of activities are highlighted further in this report.

Engaging in capacity-building activities

In addition to our Science Leadership Programmes (SLPs) in Africa and the ASEAN region, we also ran mini-SLPs at the World Science Forum in November 2017 in Amman, Jordan, and a workshop at the Next Einstein Forum in March 2018 in Kigali, Rwanda. We co-organised the biannual Worldwide Meeting of National Young Academies in South Africa in July 2017, and participated in the Asian NYAs meeting in Jerusalem in February 2018.

Participating in global and regional science policy fora

We presented the GYA's perspective on the International Council of Science (ICSU)/ International Social Science Council merger at the ICSU AGM in Taiwan.

Represented by GYA Member John Malone (USA), we contributed to developing a session for the United Nations Economic and Social Council Youth Forum in January of 2018.

We partnered with young academies to publish a statement on the United Nation SDGs.

Mentoring and outreach activities

Our engagement in the Young Scientist Ambassador Programme (YSAP) and the At-risk Scholars project demonstrates our commitment in these areas.

Novel perspectives on emerging science issues of societal relevance

Members have engaged in activities across a wide range of emerging issues, including a DIY Biology hackathon, and publishing a GYA Position Statement on biodiversity.

We also released a report on Global Access to Research Software (GARS).

Improving science education and training environment

Following the launch of GloSYS ASEAN, significant progress has been made in the Global State of Young Scientists (GloSYS) Africa project, with results expected in 2019.

The articles that follow represent an overview of the GYA's activities. For ongoing and updated information, please visit our website at www.globalyoungacademy.net, where you can subscribe to our newsletter, or follow us on Facebook or Twitter. We also have a variety of publications available for download.

Tolu Oni, Co-Chair (South Africa)

Moritz Riede, Co-Chair (UK)

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1

Vision and strategy

Early to mid-career researchers acquire skills for science leadership

Researchers and scholars are increasingly required to address societal challenges at local, regional and international scales through their work, as well as in collaboration with actors from outside of their disciplines and institutional context. Providing young scientists with leadership skills is not only a strategic aim of the GYA, but one of the aims of the ongoing annual science leadership programmes in both Africa and the ASEAN states. Leadership qualities in this context include the ability to formulate and share a vision to tackle complex problems, and to work with others on strategies to achieve that vision.

The Africa Science Leadership Programme (ASLP) aims specifically at two central issues that have emerged from early research on the environment in which young scientists work: mentoring and support structures, and focused training to increase leadership skills. In March 2017, the ASLP convened its third group of fellows; 22 outstanding scientists from different disciplines all across Africa took part in the week-long capacity-building programme. The ASLP also successfully received funding for another three-year period from the Robert Bosch Foundation, starting in 2018.

The ASEAN Science Leadership Programme (ASEAN SLP) empowers young ASEAN researchers with leadership skills so that they can champion their national research and innovation agenda. The programme also promotes cohesion and collaboration between young researchers in the region. The second ASEAN SLP was successfully held in September 2017, co-organised by the Young Scientists Network-Academy of Sciences

Malaysia (YSN-ASM) and the GYA, in cooperation with the Malaysian Higher Education Leadership Academy (AKEPT), the Thai National Science and Technology Development Agency (NSTDA), and the World Academy of Sciences Young Affiliates Network (TWAS-TYAN). Throughout the workshop, 39 participants from 12 countries engaged mid-career ASEAN academics in the areas of thought leadership, team development and engagement and collaboration, with the intention of enabling them to solve the complex issues that exist in ASEAN and across the world.

Established through separate GYA-supported initiatives, both science leadership programmes work to empower the next generation of science leaders. The GYA enthusiastically supports these established programmes, and works actively to create and support similar initiatives in other regions of the world.

For more information on the Africa Science Leadership Programme, visit <https://globalyoungacademy.net/activities/african-science-leadership-programme/>

For more information on the Asean Science Leadership Programme, visit <https://globalyoungacademy.net/activities/asean-science-leadership-programme/>



2

Third Worldwide Meeting of Young Academies

News from the global network of young academies

One of the strategic aims of the GYA is to facilitate and support the growing global network of young academies. Such academies are formed by early- and mid-career young scientists and scholars typically selected for the excellence and impact of their research and their commitment to service for society. These scientists then work as the voice of young scientists for the advancement of emergent issues vis-à-vis society, the media and policy-makers.

Worldwide, there now exist more than 40 national young academies and similar initiatives. Additions in 2017 included the Albanian Young Academy, the Estonian Young Academy of Sciences and the Young Academy Finland. The network continues to grow dynamically, with a number of young academy initiatives currently being active.

After a First Worldwide Meeting of Young Academies in 2012 in Amsterdam, The Netherlands, and a second in 2015 in Stockholm, Sweden, the Third Worldwide Meeting took place for the first time on the African continent, where the young academies movement is particularly active. The South African Young Academy of Science (SAYAS) hosted the meeting in Johannesburg, South Africa, in July 2017 with the GYA as co-organiser. The meeting brought together representatives from a large number of young academies worldwide, as well as representatives from young academy initiatives and participants from established National Academies of Sciences and academy networks.

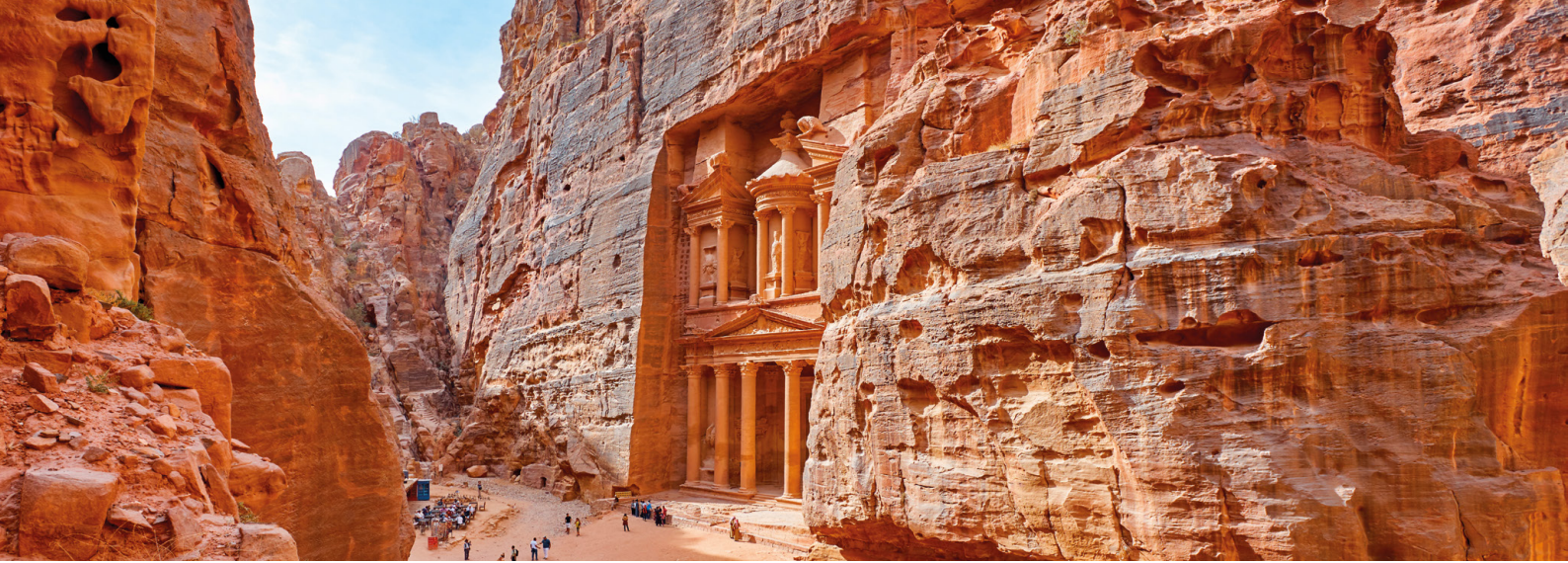
In his keynote address, Robin Crewe, Past President of the Academy of Science of South Africa (ASSAf), emphasised that young academies

play a very important role in influencing policy development and providing advice to national governments. However, he saw the young academies as facing two challenges that might impact their future activities. First, as the young academy movement is still in its early days, processes will have to be found to make their work more sustainable and to consolidate their influence within the science-policy-society nexus. The second challenge relates to the fact that engagement in science-for-policy advice requires a good set of specific skills and knowledge of policy processes, as well as diplomatic skills.

In a second major part of the meeting, discussions focused on the question of how young academies in general, and young scientists in particular, can contribute to the achievement of the United Nations Sustainable Development Goals (SDGs). Participants discussed the role of young academies in the national and international implementation and monitoring of the SDGs, and how science and technology can best be harnessed in this respect.

Third Worldwide Meeting of Young Academies
<https://globalyoungacademy.net/events/3rd-worldwide-meeting-of-young-academies-2017/>

List of National Young Academies
<https://globalyoungacademy.net/national-young-academies/>



3

Science for Peace

GYA at the World Science Forum in Jordan

Approximately 3,000 participants gathered near the Dead Sea in Jordan during November 2017 for the 8th World Science Forum, a biennial forum on the social and economic relevance, influence, and responsibilities of science. The theme of the 2017 Forum was ‘Science for Peace’.

The GYA was widely represented, with a total of 28 members and alumni attending, speaking, and participating in panels and special sessions on a wide range of topics throughout the four-day event. Some themes covered science and society in support of the UN Sustainable Development Goals, the promotion of inclusion through science education and outreach, water and sustainable development, freedom and responsibility of science and research, open science and open data, and women in science.

The perspective of young scientists was given particular attention in a special plenary session co-organised by the GYA, entitled ‘Young Researchers Identify Skills of the Future to Advance Science Diplomacy and Society’. GYA Members Yusuf Baran (Turkey), Tolu Oni (South Africa) and Alexander Kagansky (UK/Russia) participated on the panel, sharing their own science diplomacy experiences to inspire and engage more young scientists and researchers to actively engage with stakeholders beyond their discipline.

On the eve of the forum, the GYA helped co-organise a capacity-building workshop for around 40 young scientists. Co-organisers included the InterAcademy Partnership (IAP), the World Association of Young Scientists (WAYS), the International Consortium of

Research Staff Associations (ICORSA) and UNESCO, as well as facilitators from Knowinnovation. These organisations hold that to effectively engage in science diplomacy, young scientists need to be equipped with the necessary tools to solve problems creatively, to seek alternative approaches and to communicate thoughtfully and persuasively. These skills, applied to the topic of ‘Avoiding the Weaponisation of Research’, were the focus of the full-day workshop.

As part of the meeting, young scientists explored various ways in which science and technology is or can be weaponised – from bionics to cybersecurity to genome editing – and discussed regional and global approaches to various solutions. Cultural dexterity and leadership skills were also integrated into the process of addressing these pressing questions.

Read the full report on the GYA at the World Science Forum 2017

<https://globalyoungacademy.net/avoiding-the-weaponisation-of-research-workshop-for-young-scientists-at-world-science-forum-2017/>

Full report on the pre-forum workshop for young researchers

<https://globalyoungacademy.net/avoiding-the-weaponisation-of-research-workshop-for-young-scientists-at-world-science-forum-2017/>



4

Biodiversity for Survival via Biomedicine

Working group releases Position Statement

Earth is experiencing a biodiversity crisis that includes both a rapidly accelerating rate of species extinction, and a lack of knowledge of most species on Earth. This poses a direct threat to human health as more than 67% of the world's population uses natural products as their primary source of medicine. Of further concern is that of the estimated ten million species of fungi, plants, and animals on Earth, only about two million have been named.

To help address these problems, a group of young scientists led by GYA Members Milica Pešić (Serbia) and Dilfuza Egamberdieva (Uzbekistan) formed the Working Group Biodiversity for Survival via Biomedicine (Bio2Bio), a global, cross-disciplinary initiative to support scientists working to prevent the loss of biodiversity.

As part of their efforts, the Bio2Bio Working Group published a Position Statement titled 'Global Young Academy Position Statement on Conservation of Biodiversity: Protecting Molecular Diversity and Biomedical Discoveries', which outlines key challenges and possible avenues for solving them.

According to Bio2Bio Group Leader Milica Pešić, 'This Statement calls upon action from the perspective of the biomedical value of Earth's species, and biodiversity for the survival of humankind.'

Mirroring this sentiment, a portion of the statement reads as follows: 'The GYA believes that collecting, curating, and disseminating knowledge

on biodiversity as it relates to the treatment of human diseases will promote the conservation of bio- and molecular diversity while creating the international cooperation needed to safeguard well-being for all communities.'

The Bio2Bio Working Group is a good example of the international cooperation that the GYA facilitates. Among others, Bio2Bio's activities include creating open interdisciplinary and international dialogue, establishing best practices and codes of conduct, promoting the fair and equitable sharing of benefits obtained from drug discoveries among stakeholders, and standardising high-capacity biological assays to test natural products against cell-based disease models.

Further output from group members recently appeared in *The Journal of Global Health*, which published a viewpoint article titled 'Biodiversity, drug discovery, and the future of global health: Introducing the biodiversity to biomedicine consortium, a call to action.'

The 'Global Young Academy Position Statement on Conservation of Biodiversity: Protecting Molecular Diversity and Biomedical Discoveries' can be downloaded from the Bio2Bio Working Group website

<https://globalyoungacademy.net/activities/biodiversity-of-survival-via-biomedicine/>



5

Scientists as global citizens

GYA members address the effects of international migration and displacement

Across the world, international migration is growing in scale, complexity and impact. In 2017, 258 million people were considered international migrants, among which 65 million people were forcibly displaced from their homes, the highest level on record. The UN Refugee Agency (UNHCR) recorded 22.5 million refugees, often fleeing to other countries due to natural or human-made disasters in their home country. At the same time, however, many forms of international migration in our increasingly globalised and mobile world create chances and opportunities for development, and can thus be a positive force in societies.

The GYA Working Group Global Migration and Human Rights aims to provide an international and interdisciplinary forum for addressing the global challenges brought about by international migration. This working group builds on available knowledge across disciplines in aspiring to provide a novel account of understanding the global responsibility of individuals who see themselves as global citizens. As part of its work, an international workshop on global individual responsibility was held in April 2018 in Munich.

In March 2017, GYA Member S. Karly Kehoe (Canada) represented the Global Migration Working Group at the 'Refugee Scientists: Transnational Resources' workshop in Trieste, Italy. The workshop, organised by The World Academies of Sciences (TWAS), the Euro-Mediterranean University, the Italian National Institute for Oceanography and Allied Geophysics and the Swedish International Development Cooperation Agency, aimed to discuss strategies for supporting refu-

gee scientists. TWAS published a workshop report outlining a series of recommendations for refugee scientists, the scientific community and host governments, as well as home countries and funding agencies.

Related to these activities, but more specifically recognising the need to protect and support academic researchers fleeing conflict zones and the potential support that a young international academy like the GYA can offer, the At-Risk and Refugee Scholar Membership Initiative was founded in 2017. The initiative aims to enable the re-integration of exceptional, early-career at-risk and refugee scholars into research through a mentorship programme developed and led by GYA members. With support from international organisations and the GYA membership, the initiative has thus far connected 14 pairs of mentors and mentees.

Find out more on the Global Migration and Human Rights Working Group

<https://globalyoungacademy.net/activities/global-migration-and-human-rights/>



6

Global platform for women in science

Women in Science Working Group helps build a better future for women scientists

The GYA Working Group Women in Science (WiS) aims to make the voice of women scientists widely heard to reach policy- and decision-makers, with the aim of working towards a better future for female scientists. Moreover, WiS aims to raise awareness of the potential of women's contributions to science and society, as well as the costs to society in general of not engaging women. The group strives to make a global contribution by creating a platform where challenges are tackled and possible solutions are provided to build the knowledge and capacity of WiS members, as well as women outside the GYA by providing role models for career success.

The WiS was involved in the First International Conference on Women in Science Without Borders, which took place in Cairo, Egypt, in March 2017. GYA Alumna Amal Amin Ibrahim (Egypt) acted as the Chair of the Conference, which was organised by the Egyptian Young Academy of Sciences (EYAS) and the Egyptian Academy of Scientific Research & Technology, and received support from the GYA, The World Academy of Sciences (TWAS), the International Council for Science (ICSU), the European Union Commission, the Wellcome Trust, Elsevier, and L`Oreal. Scientists from 27 countries participated in the conference, among them 12 GYA Members from various countries.

Presentations at the conference showed how women researchers contribute to the advancement of STEM in their countries and across the globe, and how they will continue to do so in the future. Topics of discussion ranged from scientific career

development for women in science, to preventing HIV infections among young women in Africa, to addressing gender issues in scientific publishing.

The second day of the conference also saw a science competition for students from science and technology faculties at Egyptian universities. The contestants were asked to form teams in the following five fields related to sustainable development: food, the environment, health, education and energy.

At the close of the conference, participants agreed that this First Women in Science Without Borders Conference had been very successful and should become a regular event. This sentiment led to the Second Women in Science Without Borders Conference on 'Resilience in Diversity', which was held in Johannesburg, South Africa, in March 2018.

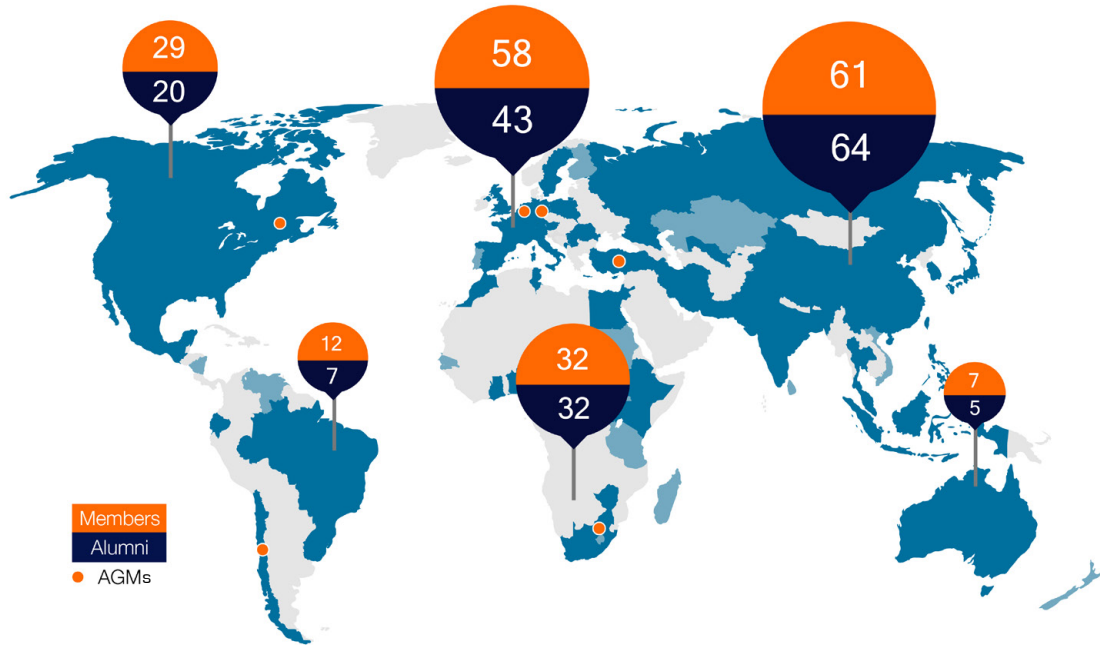
More information on the second WiS conference is available at

<http://wiswb2018.co.za/>

More information about the GYA Women in Science Working Group can be found here

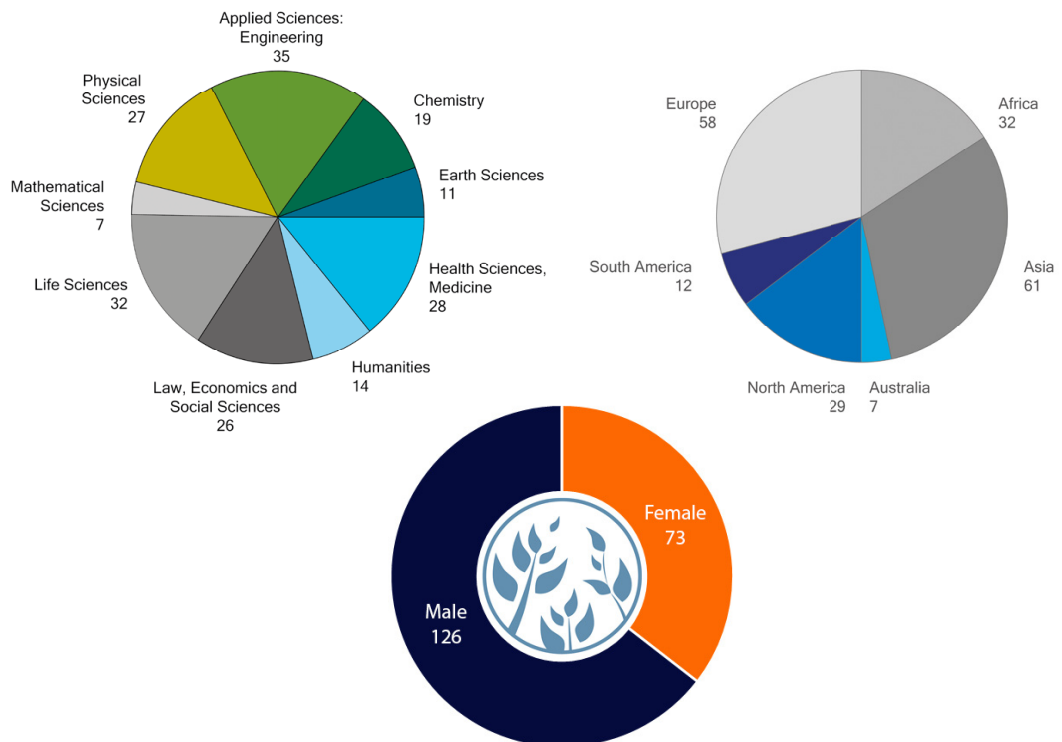
<https://globalyoungacademy.net/activities/women-in-science/>

2017 in numbers



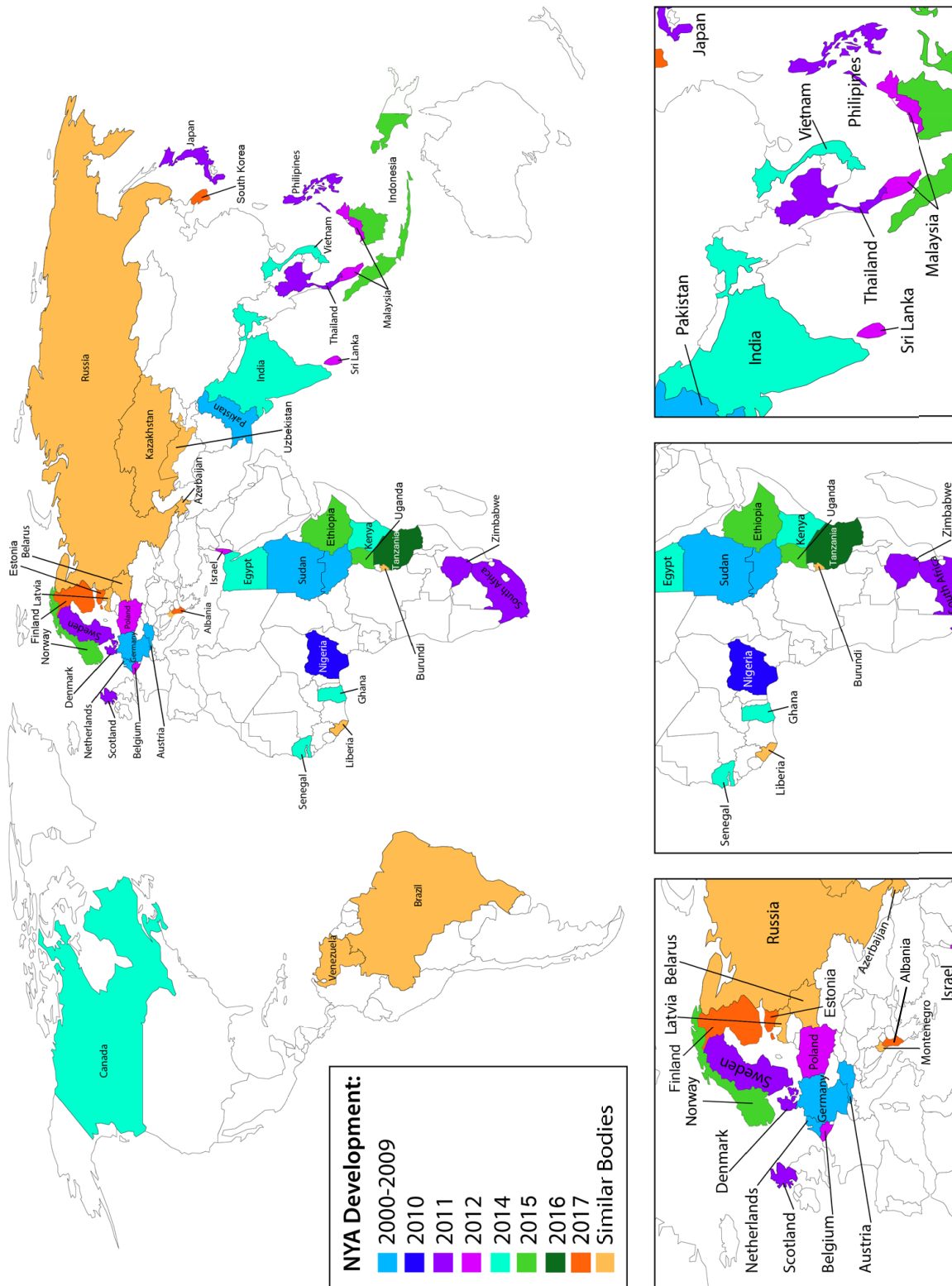
The Global Young Academy is a worldwide network of 200 members. In 2017 the organisation had 171 alumni and was represented in a total of 77 countries.

Graphic: Rob Jenkins, Helena Ballasus, Kevin Bolte / GYA



Our membership comes from six continents and spans a diverse range of disciplines.

NATIONAL YOUNG ACADEMIES



Over the past years the GYA and its members have been a driving force behind the establishment of NYAs. In 2017 three new NYAs were launched.



8

The Young Scientist Ambassador Programme

YSAP engages in science outreach activities around the world

A continued problem for advancing science is the difference in capacity, resources, and expertise between developed and developing countries. These disparities contrast with the collective intellectual strength of scientists worldwide. The GYA Young Scientist Ambassador Programme (YSAP) Working Group promotes the efforts by GYA Members to bridge this international scientific gap by facilitating scientific, cultural and educational interactions.

The YSAP organises and funds ambassadorships whereby GYA Members travel between developed and developing countries, transferring expertise and knowledge and otherwise increasing engagement between countries at different stages of scientific development or between two countries that historically have had minimal scientific contact. The aim is to create collaborations and cultural exchanges that enhance academic and professional interests. Countries and projects of interest include the following:

Costa Rica. In 2017, the YSAP group was involved in several events and scientific outreach activities. For example, YSAP Co-Lead John Malone (USA) visited Costa Rica in August 2017 to launch a collaboration to study the molecular genetics of muscle cell hypertrophy.

Tanzania. In October 2017, group member Mirabos Hojamberdiev (Uzbekistan) visited the Nelson Mandela African Institute of Science and Technology as well as the 'Blue Sky' Primary School located in Arusha, Tanzania. He interacted with young scientists who presented their research on water

purification, discussed local drinking water provisions with them, and introduced his own research on the photo-degradation of organic pollutants. He also introduced the GYA and its mission to the young scientists and encouraged them to be involved in science and science diplomacy.

Pakistan. GYA member Almas Taj Awan (Brazil) and alumnus Aftab Ahmad (Pakistan) organised a workshop and tour of three schools in collaboration with the National Academy of Young Scientists (NAYS) Pakistan in a remote Pakistani village in March 2017. They talked to students about career paths into science and encouraged villagers to let girls go to school and later attend university.

Skype a Scientist. Members from the YSAP also participated in a Skype-a-Scientist session in November 2017 with students from Athens Middle School, Alabama (USA). They did so while they were attending the World Science Forum 2017 in Jordan. This created a rare opportunity for students in the USA to hear directly about the objectives of the World Science Forum, why the meeting's theme 'Science for Peace' was relevant, and the significance of the meeting being held in the Middle East.

For detailed reports on 16 YSAP missions that have produced interactions between 22 nations and more than 1,000 scientists, students, or trainees, see the YSAP website <https://globalyoungacademy.net/activities/young-scientist-ambassador-program/>



SUSTAINABLE DEVELOPMENT GOALS

9

The Role of Young Academies in Achieving the UN SDGs

GYA issues joint statement with 36 national young academies and academy initiatives

The United Nations Sustainable Development Goals (SDGs), adopted in 2015, are a universal framework specifying the agenda for global development until 2030 in a variety of fields. The SDGs are also universal in that they call on all countries to be actively engaged in the promotion of peace and human well-being, while also protecting the planet. Since their inception, the SDGs have been the topic of many meetings, conferences and journal articles, but the question still remains: How can the knowledge community and young academies in particular best contribute to attaining them?

GYA Member Eva Alisic (Australia) sees a major role for young academies in the implementation and monitoring of the SDGs on both the national and global levels. Young academies could act as instigators and stimulate the science arena to work towards finding answers to the real knowledge questions entailed within the SDGs. Furthermore, she points out that the SDGs are strongly interdisciplinary. Since young academies tend to be interdisciplinary by nature, they can therefore be active stimulators.

Currently, Eva is the Co-Chair of the InterAcademy Partnership (IAP) project on 'Improving Scientific Input to Global Policymaking', which focuses on the global science community's contribution to the SDGs. The project broadly aims to raise awareness of the SDGs and to strengthen the global science community's capacity to support the implementation of the SDGs, with a focus on how the science academies can play their part in this system. One outcome of this project has been a

guide for academies, 'Supporting the Sustainable Development Goals: A Guide for Merit-Based Academies', published in 2017. The Guide was developed following a survey of IAP members, National Young Academies and the GYA in 2016/17, in which the IAP requested more clarity on how to contribute to the SDG-related UN processes and structures.

When it comes to the SDGs, however, more than just individual GYA members are active. In 2017, the GYA together with 36 national young academies and academy initiatives issued a Statement titled 'The role of Young Academies in achieving the UN SDGs'. The document unequivocally states that Young Academies can and should play a central role in conceptualising, developing and implementing strategies towards achieving the SDGs. It also calls on policy-makers and senior academies of science to work alongside the young academies and scientists in their regions towards a 'global science' that drives sustainability.

Statement Text

<https://globalyoungacademy.net/wp-content/uploads/2017/10/Statement-RoleYoungAcademies-SDGs-Oct2017.pdf>

UN Sustainable Development Goals

<https://sustainabledevelopment.un.org>

InterAcademy Partnership SDG Project

<http://www.interacademies.org/36061.aspx>



10

Science advice for policy

Cooperation with key partners addresses challenges and solutions

The relevance of science for policy took on a new urgency in 2017 in reaction to polarising political climates. Indeed, more than a million people across the world demonstrated in a March for Science on Earth Day, 22 April. Demonstrators marched in advocacy of evidence-based policy-making for the good of communities, as well as in support of public funding for science and research.

2017 also saw the continuation of GYA activities in support of science advice for policy, particularly through its members' participation in various workshops organised by two important GYA partners: the EU Joint Research Centre (JRC) and the International Network for Government Science Advice (INGSA). In these workshops and summer schools, scientists address how scientific evidence today can be communicated to policy makers. One key takeaway is that facts and information alone do not make decisions. Rather, policy makers must evaluate many dimensions (including values) when making decisions. Science advice for policy thus should not focus on promoting science, but rather on fostering good and effective policies based on scientific evidence.

One particular workshop stands out: In June 2017, the first South American Workshop on Scientific and Technical Advice took place. The workshop was jointly organised by INGSA, the Argentinian Ministry of Science, Technology and Productive Innovation (MINCyT), and the American Association for the Advancement of Science (AAAS). GYA Member Juan Escrig (Chile) participated in the workshop, which was designed for

emerging and established scientists and policy practitioners living or working in South America. Participants worked to enhance their capacities in providing science advice for policy making at all levels of government, particularly with respect to public policies in the South American context.

Following the workshop, a Latin American and Caribbean chapter of INGSA was established to serve as a platform for sharing good practices and addressing challenges and solutions in a regional and institutional context. The GYA greets this expansion as a means of strengthening the voice of scientists in all world regions.

For more information on the INGSA Latin America workshop, see the full report http://www.ingsa.org/wp-content/uploads/2017/08/INGSA_Buenos-Aires-Workshop-Report.pdf

Further activities of the Science Advice Working Group can be found at <https://globalyoungacademy.net/activities/science-advice/>



11

Fundamental Research Working Group

Crumbling support for fundamental science research

In many countries, research funding structures appear to be increasingly supporting applied science with direct links to industry at the expense of fundamental science. Motivated by concern about these changes, the Importance of Fundamental Research Working Group aims to quantify these changes and to develop a toolkit for the public, stakeholders, and policy makers that clearly articulates what fundamental research contributes to society and why it should be supported.

As part of its efforts, in 2017 the group published a report titled 'Restoring Canada's Competitiveness in Fundamental Research: The View from the Bench', which revealed that Canada's support for fundamental research crumbled over the past decade, leaving many accomplished researchers completely unfunded.

The report disclosed that between 2005 and 2015, the erosion of federal support for fundamental research to Canada's three major research councils was dramatic. Indeed, losses amount to 36% per researcher in the natural sciences and engineering, and 31% per researcher in the social sciences and humanities (taking into account growth in the research community, as well as inflation).

Dismantling support for fundamental research has changed the very nature of how science is conducted in Canada and has had a profound impact on the Canadian research community. Strikingly – and primarily in response to the loss of fundamental research funding – the proportion of researchers who reported that they only con-

duct fundamental research declined from 24% from 2006 to 2010 to less than 2% from 2011 to 2015. Moreover, 40% of researchers substantially changed the focus of their research programmes over the past decade, most commonly away from fundamental research.

The authors caution that Canada's capacity to compete scientifically on the world stage will be greatly diminished if the country's brightest young minds cannot be attracted to careers in research: 'A decade of erosion in support for fundamental research has made it more difficult to inspire and train the next generation of scientists. Those are the people Canada needs to solve the wicked problems confronting society and keep our economy innovative', says co-author and GYA Alumni Jeremy Kerr (Canada).

The working group is currently collecting further survey data on perceptions of research funding in a number of countries and aims to produce a report on the state of fundamental research funding globally in 2018.

The report titled 'Restoring Canada's Competitiveness in Fundamental Research: The View from the Bench', can be viewed here <https://globalyoungacademy.net/wp-content/uploads/2017/06/GYA-2017-FundResearchReport-HiRes.pdf>



12

Biochar for food security

4th Annual GYA North-South Interdisciplinary Grant

While GYA Working Groups provide a space for members to develop ideas and multi-faceted projects and collaborations, the annual GYA North-South Interdisciplinary Grant supports the development of small-scale, innovative, curiosity-driven, blue-sky exploratory research pilots or prototypes that unite researchers in developed and developing countries and cross-disciplinary boundaries. Initiated in 2014, the grant scheme aims to foster collaboration across the lines that often separate researchers and limit possibilities. The North-South grant is meant to provide seed money to enable GYA Members to prepare a proof of concept, prototype, or pilot research project with a view to securing greater external funding.

The 2017/18 GYA Interdisciplinary grant was awarded to GYA Members Thomas Edison de la Cruz (Philippines), Mary Donnabelle Balela (Philippines), and Dilfuza Egamberdieva (Germany), for the research project BioChar for Food Security and Sustainable Ecosystem Services: Understanding the Interplay between the Soil Fungus *Trichoderma*, Rhizosphere/Endophytic Bacteria and BioChar in an Economically-Important Plant.

The BioChar for Food Security Research Project brings together basic and applied sciences in an effort to develop a technology that can address the global issue of food security and at the same time promote sustainable ecosystem services. The project links GYA Members with expertise in basic microbiology, applied biotechnology, and mining and materials engineering in an interdisciplinary venture. The project's aim of connecting this research with sustainable ecosystem services

further engages the proponents to think beyond their research fields and tackle the socio-economic impact of the study, thereby allowing them to think outside the box.

Previous projects funded:

- *Ethics in environmental decision-making: From individual acts to global outcomes?* 2016, Alex Godoy-Faúndez (Chile) and Jan-Christoph Heilinger (Germany).
- *Connecting epigenetics and natural resources: The road towards cancer management a biodiversity conservation.* 2015, Sasha Kagansky (UK) and Vidushi Neergheen Bhujun (Mauritius).
- *One-dimensional molecular current wires using tailored to-the-purpose chemistry.* 2014, Ghada Bassioni (Egypt) and Wilfred van der Wiel (The Netherlands).

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Contributing Writers:

Anna-Maria Gramatté
Jennifer Plaul
Jim Curtiss (Editor)

Design & Layout: Helena Ballasus, Kevin Bolte

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Media Contact: media@globalyoungacademy.net

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About the Global Young Academy

The Global Young Academy (GYA) was founded in 2010 with the vision to be the voice of young scientists around the world. The GYA empowers early-career researchers to lead international, interdisciplinary, and intergenerational dialogue by developing and mobilising talent from six continents. Its purpose is to promote reason and inclusiveness in global decision-making. Members are chosen for their demonstrated excellence in scientific achievement and commitment to service. Currently, there are 200 members and 171 alumni from 77 countries.

The GYA is hosted at the German National Academy of Sciences Leopoldina, and received its seed funding from the World Academy of Sciences (TWAS) and the Volkswagen Foundation. Since 2014, the GYA has received core funding from the German Federal Ministry of Education and Research (BMBF) and is also supported by the InterAcademy Partnership (IAP) and other international donors.

Co-Chairs: Tolu Oni (South Africa)
Moritz Riede (UK)

Managing Director: Beate Wagner (Germany)



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