

# Re-enlightenment?



## Truth, reason & science in a global world

International Conference of Young Scientists  
and Anniversary Annual General Meeting  
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**GLOBAL  
YOUNG  
ACADEMY**

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# A word from GYA Co-Chairs

In 2019, we celebrated 10 years of the Global Young Academy at our Anniversary International Conference of Young Scientists and Annual General Meeting (AGM). The location could not have been better suited; we convened at the headquarters of one of the oldest academies in the world, the National Academy of Sciences Leopoldina in Halle (Saale), Germany. Ten years after its founding, the GYA has greatly expanded its reach, through a wider network of members, alumni and partners around the world. As an organization, we also find ourselves in a more conducive context; a world in which 36 more young academies exist than 10 years ago, bringing the total to over 50 young academies and similar bodies around the world.

Altogether 114 GYA members, 24 alumni and over 100 speakers, guests and partners, including young academy representatives, policymakers and senior representatives of the international science management and policy community, came together to address the topic ‘Re-Enlightenment: Truth, reason and science in a global world’. Throughout the meeting, from an integrated science-art exhibit, a workshop on science policy advice, to conference panels and keynote talks, discussions centered around how to navigate the role and increase the visibility of science in today’s society. From diverse perspectives, we reflected on the core values of science and research, and how we as individuals and as a global organization can better represent and reinforce these.

This year, we welcomed 43 new members from 20 countries to the GYA, among them our first members from Croatia, Iraq and New Zealand. We also bid ‘Auf Wiedersehen’ to 42 outgoing members, and plan to focus on further developing alumni relations in the coming year. During a special session, ‘GYA at 10’, past Co-Chairs and Advisory Board members spoke, based on their experiences, about their visions for the GYA and its role in the global science-policy-society landscape.

We would like to express our gratitude to the Leopoldina and its staff, for their constant support in hosting this meeting, and to our local organizers and partners in Germany and in Halle (Saale). GYA members led a dedicated local organizing committee in fundraising and implementing the many facets of this meeting. Thank you as well to past and present GYA Advisory Board members for their active contributions, to GYA members on the programme organising committee, to our preceding Executive Committee (EC) and to the GYA Office for their ongoing support.

In the coming year, together with the newly elected EC, we aim to build on the achievements of our predecessors and peers over the last 10 years and outline the strategic aims of the GYA for the next years. Collectively, we hope to ensure that science contributes to more equitable and sustainable societies, and that science systems are inclusive and supportive for all young researchers, in all disciplines and world regions.

Connie Nshemereirwe (Actualise Africa, Uganda)  
Koen Vermeir (CNRS, France)

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More information and conference programme here:  
<https://globalyoungacademy.net/events/agm-2019-anniversary-conference-and-meeting/>



Photo: Markus Scholz



## Re-Enlightenment? Truth, reason and science in a global world

With the rise of post-fact concerns, Enlightenment is again a hotly debated topic. The GYA views “enlightenment” here in a broad sense and from a global perspective: Enlightenment as a global concept relates to core values such as critical thinking, freedom of thought and scientific achievement, and is in opposition to science denial, post-fact and post-truth movements.

As a global organisation aiming to empower early-career researchers to lead international, interdisciplinary, and intergenerational dialogue, the GYA welcomed a debate about re-enlightenment. Discussions were framed around a reflection on the role and limits of science in today’s globalized society and on how science can help in solving these problems. The re-enlightenment theme of the 2019 conference also provided a framework for members, alumni and partners to discuss the core principles of academies in general, and the GYA in particular, in order to develop a vision for the future.

### Introductory Panel

**Lisa Herzog (University of Groningen, The Netherlands)**

In the introductory panel, entitled „What is Enlightenment?“, three distinguished scholars shared their perspective on this notion, which, as moderator Koen Vermeir (France) pointed out, not only designates a period in European history, but also a set of values.

Clifford Siskin (Henry W & Albert A Berg Professor of English & American Literature at NYU and founder of The Re:Enlightenment Project) distinguished two ways of thinking about the Enlightenment. The first focuses on the history of ideas, highlighting, for example, Immanuel Kant’s famous 1784 Essay “What is Enlightenment?” The problem is that it is difficult to pin down when and where exactly such ideas emerged and what constitutes “the Enlightenment”. As an alternative, Siskin suggested focusing on changes in the practices of knowledge: the turn towards tools and methods for exploring the empirical world, and the growing availability of opportunities for creating and sharing knowledge, e.g. through the development of research protocols, and the proliferation of journals. Enlightenment, he suggested, should be understood as an event in the history of “mediation”. Siskin endorsed the notion of “epistemological optimism” for promoting possibilities of cumulative, collaborative practices of generating and sharing knowledge, in the past, present and future.

Elisabeth Décultot (Humboldt Professor of German art and literary history at Martin Luther University Halle-Wittenberg) asked whether we need the concept of ‘Enlightenment’ in the human and social sciences. She discussed current controversies about the entanglement of Enlightenment, eurocentrism and colonialism and the discovery of “enlightenments” in other parts of the world.

She pointed out that already in the 19th century, there were debates between German and French scholars about the notions of “siècle de lumières” or “Aufklärung”. We should distinguish, Décultot suggested, between a historical or historiographical, and an “axiomatic” notion of Enlightenment, which focuses on its claims and values, across place and time. A central dimension of the latter notion is that of critique: of breaking down complex phenomena into smaller parts to understand them better. Enlightenment, understood as this kind of critical engagement, is an ongoing process, and it is always under threat.

Irina Podgorny (Research Fellow of the Argentine National Council of Science) took the audience on an imagined tour of the British Museum, which has a few halls devoted to “Enlightenment”. She emphasized that collecting natural objects and assembling them in museums was a practice initiated in the European Enlightenment. Today’s “geographies of knowledge”, she argued, focus almost uniquely on Europe and North America. By doing this, they neglect not only references to other enlightenments, but also the political and economic processes through which, in this period and later, new spaces, e.g. in Latin America, were integrated into an economic order.

The presentations were followed by a lively Q&A, with topics and questions such as the problem of disciplinary boundaries, whether or not we actually see an “un-enlightenment” today, or the blind spots of the current debate, for example sentiments and sensations. For discovering and correcting such blind spots, it was suggested, practices of collaborative knowledge sharing, with individuals from different cultural backgrounds, could be a way forward.



### Panel – Different places of truth: science between global and local

**Shabana Khan (School of Planning and Architecture, India) and Meghnath Dhimal (Nepal Health Research Council, Nepal)**

How to reconcile the universal value of science and evidence-based policy, but also advocate for diversity and inclusiveness? This tension is one of many between embracing universal values and valuing (local) difference; other tensions can be seen, e.g., between globalization and cultural diversity, human rights and local traditions, or globalized agriculture and biodiversity. This panel also addressed questions of diversity and equity, and how these can be combined with the value of scientific excellence.

Opening the panel, Ismael Serageldin (Founder of the Bibiotheca Alexandrina) emphasized that values are always at the heart of science: data in itself is nothing, only when it is reorganized and analyzed does it become knowledge and wisdom. Serageldin also supported the need to interconnect subjects and break up the zoning of disciplines, to generate new ideas. Finally, he espoused the potentials of open science to reveal new knowledge. Coupled with automated pattern recognition and other new technology, open access to science and data will enable equitable distribution of knowledge that will revolutionize the world.

Next, Amy Luers (Executive Director of Future Earth) focused on the hyperconnectedness of

the world. Due to this, the global context must be taken into account in every issue. At the same time, local knowledge and contexts cannot be ignored. Thus, top-down approaches to problems need to be adapted to become scaffold for bottom-up initiatives.

GYA member Maarten van Herpen (Philips Africa, The Netherlands) spoke from the context of his work developing technologies for local use in Sub-Saharan African countries. From this experience, local teams are crucial for a clear understanding of the issues technologies are being developed to address. He also spoke out for the possibility to find common ground between commercial and humanitarian interests, as a means to develop both. Cristina Blanco Sio-Lopez (University of Pittsburgh, USA) looked at different forms of knowledge from a historical perspective, and proposed the attitude ‘sapere aude’, dare to know, and to continue to look beyond our own boundaries of knowledge.

With the audience, panelists discussed disappearing peripheries, when new technologies get spread across the world. Other points of discussion inquired into the community building aspect of peaceful societies: peace is not only the absence of conflict, but active work is involved.



Photos: Markus Scholz





## Panel– The role of scientists in a post-Enlightenment world

**Michael Saliba (Technical University of Darmstadt, Germany)**

The role of scientists in society has maybe never seemed less clear than today. On the one hand, scientists seem powerless in a supposedly post-truth and post-fact world; on the other hand, tremendous hope is still put into them: from averting climate change to curing diseases or developing life-saving algorithms, scientists are called upon to bring solutions for policymaking and into the public debate. Looking at examples of successful trust-building, this panel asked: what lessons can be learned, and how can young scientists contribute?

Silke Beck (Helmholtz-Centre for Environmental Research, Germany), GYA member Alexander Kagansky (Director at the Center for Genomic and Regenerative Medicine, Far Eastern Federal University, Russia), Martin Visbeck (Governing Board, International Science Council and Helmholtz Centre for Ocean Research, Germany) spoke on the panel, which was moderated by GYA member Lisa Herzog (Professor at the Faculty of Philosophy, University of Groningen, The Netherlands) and Robert Lepenies (research scientist at the Helmholtz Centre for Environmental

Research, Germany).

The panel resulted in a discussion about scientists' responsibility to communicate science. To be effective, scientists need to build trust. One aspect of trust is maintaining an open dialogue and using various channels of communication: from social media, to the traditional press, to organizing interdisciplinary panels open to the public. This ability to communicate effectively came up as a crosscutting theme throughout the panel discussion. Participants agreed that more inclusive language is key to science communication across disciplinary and societal barriers.

Participants also discussed the implications for scientists in society with respect to the GYA as an organization, concluding that the GYA might use its expanded reach to engage young scientists around the world beyond its members, inspiring and giving a voice to a wider global community.

## Panel – The limits of (Re)enlightenment?

**Benjamin Hennig (University of Iceland)**

This panel addressed the fact that reason and science are not always seen (or used) as positive forces in society. In fact, in the past they have caused many of society's problems. Where are the limits of reason, the extremes of reason, or when does reason collapse into unreason? What role do emotion, intuition and aesthetics play in society alongside reason?

David Mair (Head of the Science Advice to Policy unit at the European Commission Joint Research Centre (JRC)) reported on the JRC's Enlightenment 2.0 project, which investigates how decisions are made in politics and how to create space for scientific evidence in that process. Mair emphasized that science does not have the capability to tell how the world should be, but this is the main task of politics. Scientists can play a more effective role in the political process if they recognize that emotion and cognition are intertwined, and both influence the processes and practices of science and politics.

The relevance of the InterAcademy Partnership (IAP) project 'Respect and Dialogue' for the panel questions was outlined by Detlev Ganten (Chair of the Board, Charité Foundation, Germany). Ganten introduced the project, which is designed to foster an international dialogue of understanding, using health as an entry point into this dialogue, because it is a key issue for all individuals around the world. The project aims to create regional hubs, to bring together experts and opinion leaders, people, academics and cultural institutions, based on the principles of respect and dialogue. It aims to mobilise the scientific community to engage with society (SDG 17) and create better understanding (SDG 16). These goals are challenged by the rise of populism, realities of conflict and other

contemporary global problems. It becomes clear that current international efforts are not sufficient, and that academia needs to play a role.

GYA alumnus Shoji Komai (Nara Institute of Science and Technology (NAIST), Japan) addressed the issue of bias from the perspective of neuroscientific research, which helps us to understand human behaviour in daily life. It is important to understand that individuals are limited by their brain capacity and by cognitive biases. Collaboration can help to overcome some of these limitations.

Virginia Murray (Head of Global Disaster Risk Reduction, Public Health England) presented the Sendai Framework for Disaster Risk Reduction 2015-2030 (Sendai Framework) which is the first major agreement of the post-2015 development agenda. The agreement recognizes that states have the primary role to reduce disaster risk, but that responsibility should be shared with other stakeholders, including local government and the private sector. The framework showcases a positive example of the substantial contribution of science in international policymaking and putting aims of the UN SDGs into practice.

The discussion following the panel focused on questions and possible solutions to overcome limitations of notions of 're-enlightenment', such as cognitive bias and the power of emotions over evidence. Participants discussed the role of science in overcoming these limits, to work together for a sustainable future.







## Panel- History and future of learned academies

**Isil Kurnaz (Gebze Technical University, Turkey)**

Concluding the conference on 3 May, a two-part panel explored the history and future of academies and learned societies.

The panel was opened with an invigorating and extremely enlightening talk by Ismail Serageldin (Founder of the Biblioteca Alexandrina, Egypt). He took the audience on an exciting journey of history from ancient Egypt to the foundations of present day academies. Academies, in ancient times, were a self-selected group of excellent scholars, not only setting the standards of scientific thinking but also introducing the concept of “peer-review”, in the form of discussion among scholars: in many ways, not much different than today. We learned that Imhotep was not only the first medical professional, but that he was promoted to the position of “God of medicine”! We took a historical tour of the ancient Library of Alexandria, which was essentially a collection of super-brains working on all sorts of global issues in an interdisciplinary manner. Serageldin particularly emphasized the contributions of Arab science to knowledge, such as Ibn Al Haytham, who established the basic principles of scientific methodology that we use today; Al Kharezmi, whose methods of algebra we still use today (in fact, the name algebra is a different pronunciation of Al Kharezmi); and Ibn Al Nafis, one of the forerunners of freedom of speech and open-mindedness: “When hearing something, do not preemptively reject it; truth is truth unto itself”.

Subsequently, Serageldin spoke about the first academies of Europe and America, and it was especially impressive to see how enlightened leaders supported these academics in the middle of the harshness of wars, implicating that academies represented an essential part of life,

which was seen to be not only worth upholding, but necessary in all times.

We then had a peek into the early years of The Royal Society, from Sietske Fransen (Max Planck Institute for Art History, Italy). What began as a group of men, keen to work or experiment together in order to advance understanding and knowledge, grew into a large umbrella organization with a variety of institutions giving advice on issues regarding the UK and beyond. Rainer Godel (Director of the Centre for Science Studies, Leopoldina, Germany) then spoke on the origins of the Leopoldina. He began by quoting Goethe – “People who would not have known each other or misjudged each other would call each other relatives in science” (does it ring a bell, perhaps? #myotherfamilyisathome). Godel also mentioned how learned societies aimed to promote research within an international realm, and used the most progressive media and means of their time – so we should perhaps reflect on our past 10 years and plan our future accordingly.

This brought us to the next panel on the History of GYA. We heard from some of the very first people who were there at the GYA's founding: Hans Hilgenkamp (Professor of Physics, University of Twente, The Netherlands) and Heidi Wedel (Alumni relations, DAAD, Germany), in a session moderated by GYA members Anna Harris (Department of Technology and Society Studies, Maastricht University, The Netherlands) and Matthew Levy (Founder of Noble Artificial Intelligence, UK). It all started in 2008, at a World Economic Forum in China, with only a group of incredible and inspiring international scientists, big dreams, and no funding. This group dared to

think big, and was lucky to gain the support of the InterAcademy Partnership, and become a global voice of young academics all over the world with a lasting impact. The GYA has indeed come a long way from a one-person office managed by Heidi Wedel, with two part-time students, and no computer, dealing with academicians from all over the world, to the GYA today that has been admitted as a full member of the IAP in its 10th anniversary year. Well done to all the past and present members!

So, where do we go from here?

The future of national and global academies was discussed in the next panel with Philipp Kanske (Speaker, Die Junge Akademie, Germany), Orakanoke Phanraksa (former GYA Co-Chair, Thailand) Antonio Loprieno (President, ALL European Academies (ALLEA)), Christiane Diehl (Managing Director, European Academies Science Advisory Council (EASAC)), Jacqueline Olang (Executive Director, Network of African Science Academies (NASAC)), and Volker ter Meulen (President, InterAcademy Partnership (IAP); Former President, Leopoldina), moderated by Tolu Oni (former GYA Co-Chair, UK). The common theme across all speakers was something that was discussed throughout the conference – how should we be more involved in issues that are important to the society, and how can we communicate our science to the public, without overstating scientific conclusions? The unique selling point of the early academies was, as Antonio Loprieno pointed out, being the bridge between the highest level of research and public good. He has warned, however, that

Enlightenment was a pretty elitist approach, and in the coming age, we as the GYA have a chance to use the tsunami of transformations in what he termed ‘Enlightenment 2.0’ to reach out to larger segments of the society using a whole new set of tools and ways of thinking. This is particularly crucial in a time when, as Christiane Diehl emphasized, irrationality has a bigger “megaphone”. Academies at this point should apply ingenuity to solve global challenges, and when doing so, we should aim for genuine inclusion, to which the GYA can contribute.

The take-home messages from this session were clear: (1) humility is important; stop talking “to” the public, but speak “with” them; (2) do not be arrogant in your science advice, find a way to touch the hearts as well as mind, as Vladimír Šucha also mentioned in his keynote talk; (3) when giving science advice, be careful not to be a lobbyist; do not push, but rather maintain objectivity and respect; (4) show goodwill to everyday people, communicate your research to them wherever and whenever you can; and finally (5) keep the GYA young and dynamic.





## Special Sessions

At a **local dinner reception** on the evening of 1 May at the historic City Hall (Stadthaus) in Halle, GYA members were welcomed by Petra Sachse (Centre for Economy, Research and Digitalization, City of Halle (Saale) and Karamba Diaby (MP, German Parliament). Two working groups presented outputs from the past year: The Global Migration and Human Rights group launched the scholarly publication ‘Responsibility for Refugee and Migrant Integration’, and the Open Science working group discussed the joint Young Academy statement on Plan S and continuing engagement in European deliberations on open science. In the session **GYA at 10!**, five past GYA Co-Chairs and former GYA Advisory Board member, Howard Alper, addressed the origins of the GYA, and what they see as unique achievements of the organisation. The panel was followed by an active discussion about the future of the GYA.

## Keynote talks at Gala Dinner

At a festive **Gala Dinner** on 1 May, GYA members, speakers and guests, as well as early-career researchers from the Martin-Luther University Halle-Wittenberg, were welcomed by Jutta Schnitzer-Ungefug (Secretary General, German National Academy of Sciences Leopoldina). Two key-note talks framed the networking evening, held by Vladimír Šucha (Director General, EU Commission Joint Research Centre) and Martin Frick (Senior Director Policy and Program Coordination, UNFCCC). Šucha emphasized the importance of understanding the key role that values play policymaking. Scientists providing evidence need to always take into account that evidence is only one factor in policy decisions. Maintaining an active and open dialogue is essential. Frick drew attention to the increasing necessity to address climate change not as a stand-alone issues, but as a cross-cutting challenge in almost every field of both research and policymaking.

## Member Lightning Talks

Three parallel sessions of Member Lightning Talks gave over 40 GYA members and alumni a platform to communicate to each other and conference participants the research they are undertaking in their fields. As usual, these packed, four-minute presentations on topics from fighting the dengue virus to materials for sustainable energy to gendered labour migration were engaging and lay the foundation for future interdisciplinary cooperation among GYA members.

## The Nexus of Art and Sciences

**Isil Kurnaz (Gebze Technical University, Turkey)**

For the first time at an AGM, this year the GYA Working Group ‘Science+Art=Peace+Justice’ organized an art exhibit in collaboration with ArtSci Nexus and the Art Museum Moritzburg in Halle (Saale). The exhibits were: Arrythmia, a collaborative installation where heartbeats were converted into sound patterns; Neural Module, where signals recorded from striatal and cortical neurons using 64 nanoelectrodes were converted to audio-visual patterns; The Well Tempered Brain, or “nanobrain”, algorithms that turn recordings from neurons into polyphonic sounds; Bacteriality and Micropaintings, where DIA slides and color negatives have been infected with bacteria strains, yeast or fungi, that transforms the original images to a completely new dimension; and finally Dolphinet, with guest sound artist Miriam Akkermann, a media installation using a web portal that allows dolphins and whales to send and receive audio messages. The exhibit was open to the public throughout the AGM week. An evening visit by GYA members was highlighted by a lecture given by curator Candace Goodrich from ArtSci Nexus on the topic ‘Anthropocentrism and The Failure of Modernity’. In this age of post-truth, she began with a controversial issue:

although Enlightenment can be considered successful at many levels, e.g. with respect to hygiene, education, decreasing poverty, establishing democracy and separating church and state, the means by which these achievements have been reached appears as a “dark shadow” which needs to be addressed in any approach to Re-Enlightenment. Some of these dark shadows of Enlightenment parallel colonialism, according to Goodrich, which can also be seen in the sciences. Particularly with respect to how quality of science is measured in Western countries, how scientists from lower-income countries are limited in the research that they can do, making them less competitive. Goodrich proposed a decolonization of science and a new beginning by combining a new way of thinking with the original utopian ideals of Enlightenment. She also introduced the concept of the Anthropocene with respect to climate change, and raised the question of whether any government body can decide to interfere with geological engineering at a global scale, particularly when the power imbalance due to colonialism is still a major issue. After an interactive and controversial discussion session, the audience left with much food for thought.







## Annual General Meeting (AGM)

The Anniversary Annual General Meeting (AGM) was officially opened with warm welcoming words from Leopoldina President Jörg Hacker, who emphasized the growing significance of young academies, as well as the positive example they set for traditional academies through their dynamic, interdisciplinary work and near gender parity. Next, State Secretary at the Ministry of Economy, Science and Digitalisation of Saxony-Anhalt, Thomas Wünsch stressed society's need for science and innovation, using the example of evolving energy sources in the region of Saxony-Anhalt. Wünsch noted his Ministry's continued support for the activities of the GYA, backed by its stable administrative seat at the Leopoldina in Halle (Saale).

GYA Co-Chairs Tolu Oni (University of Cambridge, UK) and Connie Nshemereirwe (Actualise Africa, Uganda) led the inauguration ceremony for 43 new GYA members from over 20 countries. Highlights from the first AGM day included an information fair for members to get to know existing working groups, incubator groups, and member committee activities.

## NYA meeting

Representatives from 27 national young academies (NYAs), similar bodies and networks and NYA Initiatives, including from countries such as India, New Zealand, Israel, Germany, the Netherlands, Panama, and South Africa, met at the AGM to mutually engage. Meeting participants welcomed the recently established Spanish Young Academy and the newly establishing Hungarian National Young Academy and Bangladesh National Young Academy into the global NYA network.

Discussions focused on questions of how to set up a young academy, and available support mechanisms for this endeavor. The GYA survey of young academies, to collect best practices and information on the various models of NYAs across the world, was introduced, preliminary results of which were later presented at the 2019 Worldwide Meeting of Young Academies in Vietnam. Survey results are also expected to feed into the Toolkit for establishing a young academy, which is under development.

## New Leadership Elected

A part of every AGM is Executive Committee and Co-Chair elections. This year, GYA members elected leaders from 5 continents to the Executive Committee 2019/20. As Co-Chairs for the upcoming year, members re-elected Connie Nshemereirwe (Actualise Africa, Uganda) and newly elected Koen Vermeir (CNRS, France).

Anina Rich (Macquarie University, Australia) and Yoko Shimpuku (Kyoto University, Japan) were re-elected to the Executive Committee; Newly elected were: Nova Ahmed (North South University, Bangladesh), Anindita Bhadra (IISER Kolkata, India), Maral Dadvar (Stuttgart Media University, Germany), Robert Lepenies (Helmholtz Centre

for Environmental Research, Germany), Sandra López-Vergès (Gorgas Memorial Institute for Health Studies, Panama), Marian Nkansah (Kwame Nkrumah University, Ghana), and Michael Saliba (Technical University of Darmstadt, Germany).

The new leadership is tasked with preparing a strategic plan to guide the GYA in the years to come. Following planning and initial drafting, GYA members will have the opportunity for consultations, and the finalized plan will be launched at the AGM 2020 in Kolkata, India.







## Latin America and Caribbean Focus

**Matt Keane (GYA Research Assistant, Germany)**

The first formal workshop for a nascent Global State of Young Scientists (GloSYS) Latin America and Caribbean (LAC) project was held during this AGM. Anna Coussens (Walter and Eliza Hall Institute, Australia) opened the workshop by summarized the key successes and challenges that have characterized the GloSYS Africa project, which is currently drawing to a close. She highlighted three pillars critical to any successful GloSYS project: people, logistics and funding.

GYA alumnus Hsin-Chou Yang (Academia Sinica, Taiwan) focused on the survey structure and the challenges his team experiences with analysing large volumes of complex data. Karen Wiemann (former GYA Intern) and Sandra López-Vergès (Gorgas Memorial Institute for Health Studies, Panama) shared their knowledge of higher education in the region, which helped guide a collaborative discussion about the importance of a GloSYS LAC project.

An exciting outcome is the formation of a core group of people who will lead the development of an academic paper that is anticipated to underpin a more formalised funding proposal. Building on the fresh enthusiasm generated out of the discussions of the need for GloSYS LAC research project, Co-Chairs Tolu Oni (University of Cambridge, UK) and Connie Nshemereirwe (Actualise Africa, Uganda) noted current developments to found the first National Young Academies (NYAs) in the LAC region. Howard Alper (former IAP Co-Chair, Canada) shared his experiences, vision and encouragement for pursuing the development of NYAs in the LAC region. These discussions were enriched by the regional expertise of Luiz Davidovich (GYA Advisory Board Member, President of the Brazilian Academy of Sciences), speaking remotely from Brazil.

## Workshops and Outreach

### Science Advice Workshop

**Robert Lepenies (Helmholtz Centre for Environmental Research, Germany)**

A full-day science advice capacity building workshop was jointly organized by the GYA and its Science Advice Working Group, the International Network for Government Science Advice (INGSA) and the Halle Institute for Economic Research – Member of the Leibniz Association (IWH). The workshop was attended by participants of GYA, IWH and early- and mid-career researchers from regional institutions and addressed questions such as: What is science advice? What does it look like in practice when scientists inform policy? What skills are needed for early-career scientists who want to have an impact? Sir Peter Gluckman, chairman of INGSA, held a keynote talk and advised participants throughout the day. The keynote was followed by a panel debate between several experienced scientists and science advisors who have worked at different levels of government: Oliver Holtemöller (Leibniz Institute for Economic Research, Germany); Pearl Dykstra (University of Rotterdam; High Level Group of Scientists advising the European Commission); Ângela Pereira (EC Joint Research Centre); and Rees Kassen (University of Ottawa, Canada, Past GYA Co-Chair) with GYA member Clarissa Rios Rojas (Ekpa'palek, Peru) moderating the day. Participants engaged with two interactive case studies: “Carboneria – Competing technology-based economic proposals with multiple stakeholders” and a longer case entitled “Gerontaria” which presents a similarly complex policy scenario with mul-

multiple stakeholders across a longer time horizon relating to a proposal of raising the retirement age of a fictional country facing political, social and economic pressures.

## Science Leadership

**Stefan Kohler (Heidelberg University, Germany)**

What is stopping you?

During the pre-AGM 2019 Science Leadership Workshop, new GYA members explored and practiced collective leadership. The workshop was an opportunity to learn and experiment with collective leadership tools and to reflect on their use. Knowing versus wondering, diverging and converging, being an angel’s advocate, an active listener, or a silent clusterer of post-it notes have become as familiar during the workshop as posing problems as questions. Attendees of the AGM 2019 will remember that the same elements were used throughout the conference. The practiced tools are likely to become more valuable, the more we use them within and outside GYA activities. Use them, try them, talk about these tools with GYA members who had an opportunity to participate in a Science Leadership Workshop.







## Expedition Mundus

**Shaheen Motala-Timol (Tertiary Education Commission, Mauritius)**

As part of the GYA AGM 2019, members of the Working Group Expedition Mundus led a science education outreach program at the Francke Foundations. The objective of the outreach was to introduce game Expedition Mundus to a group of 10 children aged 5 to 12 at the after-school activity centre. In this inquiry-based science education game, the children endorsed the role of researchers who discover a new planet Mundus, and then try to find out more about the planet itself and its inhabitants. For more than 2 hours, the children, who played in pairs, had a lot of fun, and success, finding answers to the questions using evidence and materials provided in the game, through observation and deduction, and reporting back to the WG team.

## The Science of Light

**Mirabbos Hojamberdiev (Uzbekistan-Japan Innovation Center, Uzbekistan)**

Energy is needed to keep us warm in winter, turn on the lights in the dark, or to boil water. Most of our energy, however, stems from coal, oil or gas that is burned and thus entails large amounts of carbon emission. This causes catastrophic climate change leading to an average temperature increase that endangers the very basis of our existence.

Intriguingly, the sun contains almost inexhaustible

amounts of energy. One hour of globally received sunlight suffices to power the planet for one year. Unfortunately, at the moment only 1% of the global energy production is gained from sunlight through solar cells that can convert sunlight directly into electricity - without carbon emissions. One challenge is the fabrication of long-term stable and efficient solar cells. Getting children, who will be future innovators, excited about the science behind solar cells was one main aim of this science education outreach activity.

On Monday before the 2019 GYA AGM, GYA members Michael Saliba (TU Darmstadt, Germany), Moritz Riede (University of Oxford, UK), Mirabbos Hojamberdiev (Uzbekistan-Japan Innovation Center, Uzbekistan), and Martin Dominik (University of St. Andrews, UK) held a science education outreach activity at the Francke Foundations in Halle, Germany. In this activity, about 15 schoolchildren aged 10-12 years old fabricated so-called dye solar cells, made of common household materials, and four types of berries were used as a source of dyes with different colors. Light arrives at the dye and can then be converted into electricity. The quickly produced electricity can then subsequently operate a device. However, a lot of craftsmanship is required because the solar cell consists of many different layers that perform many different tasks. It's like a puzzle or building something with Legos. For it to work, all the parts must mesh and fit.

All schoolchildren participated actively in this outreach activity, asked many curious questions, showed high enthusiasm in using berries as the source of dyes and finally graduated officially as future scientists.

## March for Science Halle (Saale)

Following the AGM and Conference, the GYA organized a local March for Science in Halle (Saale) on 4 May. Two events were open to the public: A science history walk through the city and an arts-science workshop put together by the Art-Sci Nexus group, at the Art Museum Moritzburg.

The March for Science history walk was conceptualized by the GYA's History of the GYA working group, and researched and written by Carla Greubel (Research Assistant, Maastricht University, The Netherlands). The walk, designed as a self-guided tour, provided information at each point of the tour. Despite the morning downpour, a small group of local residents and GYA members explored the history of science in the city of Halle, starting at the Leopoldina, passing by the botanical gardens, the university campus and other historical sites, and ending at the library of the International Centre for Enlightenment Studies (IZEA) at the Martin-Luther University Halle-Wittenberg. Special thanks to Daniel Fulda (Board of Directors, IZEA), who gave participants a historical overview of the IZEA library and the books it contains, as well as insights into developments in print and knowledge production in Europe.



Photos: Markus Scholz (top) and GYA (bottom)



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## About the Global Young Academy

The Global Young Academy (GYA) was founded in 2010 with the vision to give a voice to 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 216 alumni from 83 countries.

The GYA is hosted at the German National Academy of Sciences Leopoldina, and received its seed funding from the Volkswagen Foundation. Since 2014, the GYA receives 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.

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