

**iap** SCIENCE  
RESEARCH  
HEALTH

the interacademy partnership

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InterAcademy Partnership  
ANNUAL REPORT  
**2016**

## Vision, Mission and Structure

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The InterAcademy Partnership (IAP) is a global network of more than 130 academies of science, medicine and engineering that brings together the world's best scientific minds.

Individually and collectively, our member academies play a vital role in supporting, promoting and communicating science, influencing national and international policy on science-related matters, and fostering the next generation of young and talented scientists.

Reflecting the principles of its membership – independence and objectivity – IAP strives to be free from national or disciplinary bias to ensure that its actions and decisions are strictly merit-based and reflect the best scientific evidence available. Consequently, it is one of the leading organizations in the world with the intellectual capacity, credibility and independence to function as an authoritative and impartial adviser on scientific issues of regional and global importance.

Thus, IAP has four main strategic priorities:

- Provide evidence-based policy-relevant science, health, engineering and technology advice and perspectives on global issues.
- Position the InterAcademy Partnership as a recognised provider of independent, high quality, evidence-based global science advice.
- Strengthen the global scientific enterprise.
- Champion science and health education and work towards a global citizenry with high levels of health and science literacy.

In addition, IAP aims to:

- Develop and strengthen the global network of science, medical and engineering/technology academies, IAP's regional networks of academies, and the InterAcademy Partnership's member academies.
- Develop and strengthen partnerships with other organizations.
- Strengthen IAP operations and its fundraising strategy.
- Develop and implement an innovative and effective communications strategy.

IAP itself has three components: IAP for Science and IAP for Health (formerly IAP - the global network of science academies, and the InterAcademy Medical Panel) based in Trieste, Italy; and IAP for Research (formerly the InterAcademy Council) based at the US National Academy of Sciences in Washington, DC.

Helping to make IAP's work relevant around the world, its individual member academies are grouped into four regional networks: the Association of Academies and Societies of Sciences in Asia (AASSA), the European Academies Science Advisory Council (EASAC), the Inter-American Network of Academies of Science (IANAS) and the Network of African Science Academies (NASAC).

By bringing its member academies together into regional and global networks, IAP aims to increase the visibility and impact of the activities of academies as they work together, speaking with 'one voice' to governments, international organizations and other stakeholders.



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InterAcademy Partnership  
ANNUAL REPORT  
**2016**

## **InterAcademy Partnership Annual Report 2016**

Peter McGrath: Writer/editor

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We would like to thank colleagues from member academies, IAP regional networks, and other IAP programmes who supplied reports on their 2016 activities.

We would also like to thank Tom Arrison, executive director, IAP for Research, and Jeremy McNeil, chair of the IAP Publications and Communication Committee, for comments and edits on the text.

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## Message from IAP Presidents

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### **Welcome to the first annual report of the InterAcademy Partnership.**

Although our organization dates back to 1993 and the formation of the InterAcademy Panel, it was only in 2016 that the 'old' IAP merged with two other international academy networks – the InterAcademy Medical Panel (IAMP) and the InterAcademy Council (IAC) – to establish the 'new' IAP, or InterAcademy Partnership.

The decision to create the new IAP was taken by the member academies of the Partnership's networks – mainly academies of science and of medicine – from around the world when they met at the largest ever gathering of academies, the 2016 IAP General Assembly in Hermanus, South Africa.

The reasons behind the creation of the InterAcademy Partnership are many – but are mainly linked to the main objective of each of our three constituent networks, that of providing policy advice on scientific issues. Having received the recommendation of an expert group and after considerable reflection, we agreed that our messages would be more effective if they were more coordinated, and that high-level national and international-level decision-makers would come to recognize our single 'brand' if we worked together. And this brand is our strength, bringing with it, as it I does, the independence and credibility of our member academies and, in turn, their membership of eminent fellows.

But the Partnership was not created overnight. It took three years of discussions, step-by-step developments – keeping our member academies updated along the way – before the three constituent networks, backed by the vote of their member academies in Hermanus, established the new umbrella organization.

We are already seeing the dividends of 'speaking with a single voice'. A major project funded by the German Federal Ministry of Education and Research on 'Food and Nutrition Security and Agriculture' (FNSEA) is under way (see pages 21-22), while two projects funded by the Carnegie Corporation of New York – on 'Improving Scientific Input to Global Policymaking: Strategies for Attaining the Sustainable Development Goals' and 'Harnessing Science, Engineering, and Medicine to Address Africa's Challenges' that kicked off during 2016 (see pages 20-21), attest to the leveraging capacity of the new Partnership.

We hope that these will be the first of many new projects on critical issues at the nexus of science, sustainable development and policy, and will pave the way for our regional networks and our member academies to get more deeply involved in our work. In turn, such international efforts will help strengthen our member academies and build their reputations in their home countries. It will be a win-win situation.

We have made a positive start under the new IAP, but there is still much work we must do together – as an umbrella group for three inter-academy networks, as a platform for our four regional networks, and as an agency to support, encourage and facilitate the work of our more than 130 member academies.

We look forward to working with you in the years ahead as we set out on this new journey together as the InterAcademy Partnership.

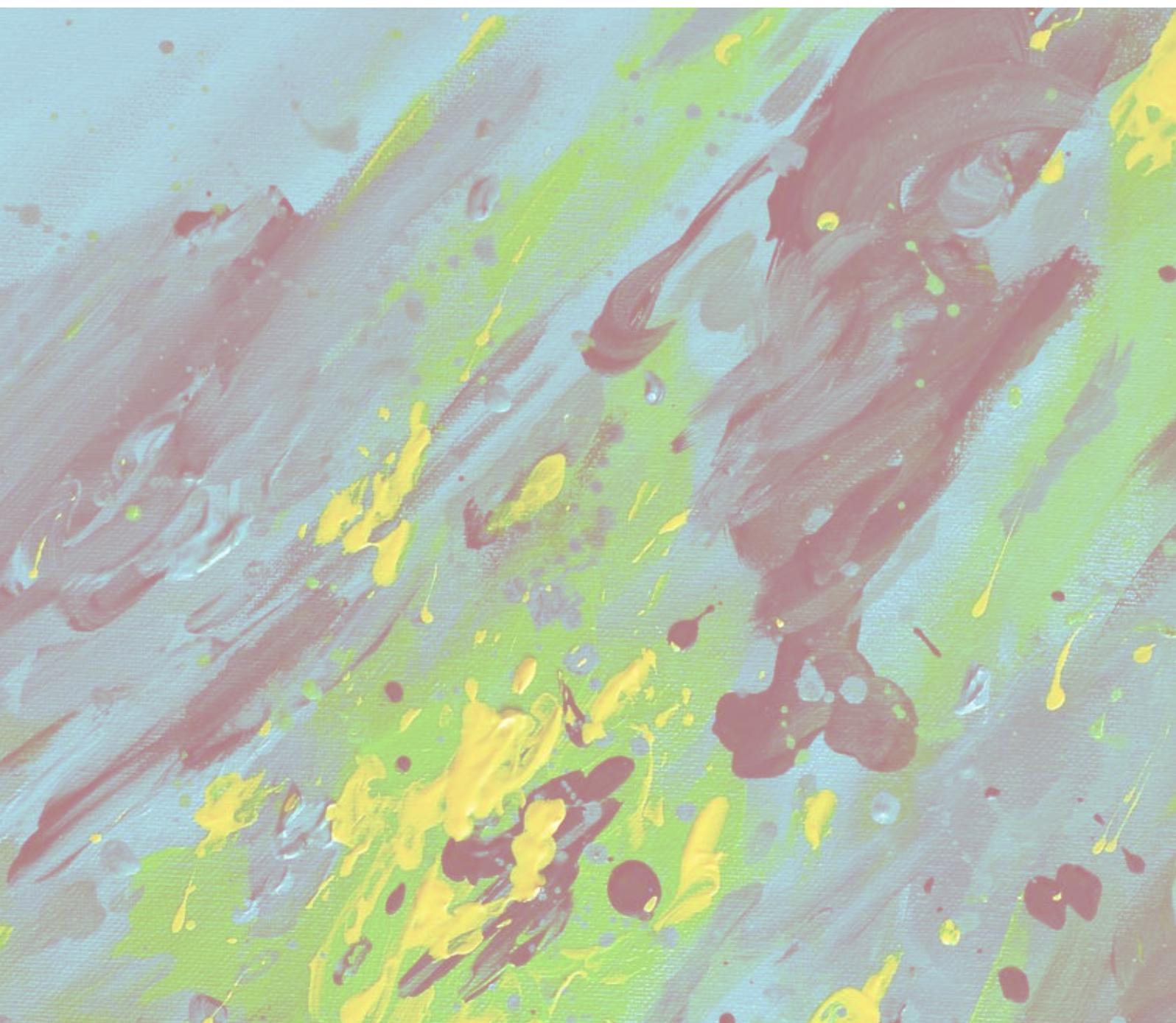


Robert Dijkgraaf  
IAP Presidents



Depei Liu  
Co-chair, IAP for Health

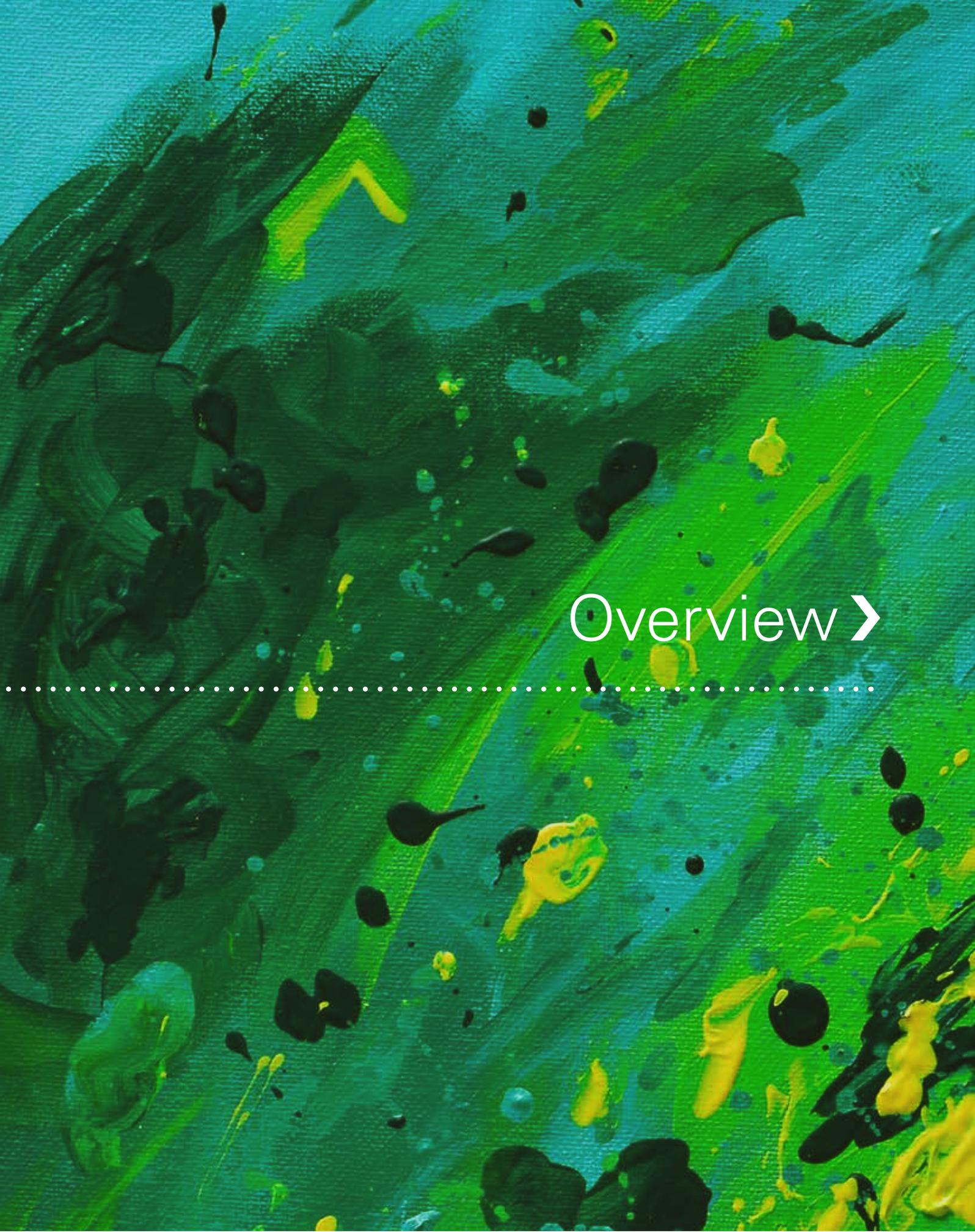
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Overview >

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• Looking back

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## Looking Back

At the IAP General Assembly, held in March 2016 in Hermanus, South Africa, member academies voted for the formal establishment of the InterAcademy Partnership. They also adopted the Partnership's Strategic Plan.



Mohamed Hassan, former co-chair of IAP for Science, explains the structure of the new InterAcademy Partnership to member academies at the General Assembly in Hermanus, South Africa.

The IAP Strategic Plan sets out four main priorities:

- Promote a scientifically literate global society;
- Provide evidence-based advice and perspectives on global issues;
- Strengthen the global scientific enterprise; and
- Strengthen the global network, including supporting the work of IAP's regional networks, and the creation of new academies in countries where they are not yet present.

In addition, member academies agreed to three additional priorities:

- Develop partnerships with other organisations, including with agencies of the United Nations system;
- Strengthen InterAcademy Partnership operations, including fundraising abilities; and
- Implement an effective communications strategy.

IAP comprises the three partner networks – IAP for Science, IAP for Health and IAP for Research – yet the fact that these strategic goals reflect the objectives of all three demonstrates the logic of coming together to 'speak with one voice' and to work on issues of common concern.

It is also timely that IAP was officially established just a few months after world leaders signed up to the UN 2015-2030 Sustainable Development Agenda and the Sustainable Development Goals (SDGs), as achieving the targets of the 17 SDGs will require the input of science – whether the goal is zero hunger (SDG #2), good health and wellbeing for all (SDG #3), sustainable cities and communities (SDG #11), action on climate change (SDG #13), or preserving and using wisely biodiversity under water (SDG #14) or on land (SDG #15).

The SDGs will frame the work of international science organizations such as IAP for at least the next ten years. In particular, there is considerable work to be done in 'translating' the available scientific literature and communicating it to politicians and decision-makers, as well as to the public.

This is what IAP has in mind when it talks of providing evidence-based advice and perspectives on global issues

and promoting a scientifically literate global society.

Scientific literacy begins in the classroom, ideally in elementary school. To this end, IAP (as IAP for Science) has been promoting inquiry-based science education (IBSE) through its Science Education Programme, since 2003. It is believed that that by allowing young children to work together, devise and test hypotheses through experimentation, and by figuring out the answers based on evidence and reasoning will not only allow children to learn about their world, but also help them to develop skills that will serve them in their adult careers. Adults with such training would have the knowledge base and questioning capacity to consider new and emerging fields of science rather than taking an emotional, perhaps prejudiced or biased stance, before considering the facts and potential benefits. (See page ?? for the report on IAP's Science Education Programme).

IAP's focus for emerging issues is to provide evidence-based advice, thereby building the bridge between research and policy.

Three global projects contribute to this objective. The Food and Nutrition Security and Agriculture (FNSA) started in 2015 with support from the German Federal Ministry of Education and Research, has established expert working groups within each of IAP's four regional networks (see below) to address a set of 10 key questions from their regional perspectives. These regional reports, due to be published in late 2017, and



Naledi Pandor, South Africa's Minister for Science and Technology, delivering her keynote address during the IAP conference on 'Science Advice', in Hermanus, South Africa.

the final global summary, will feed into national, regional and international discussions on food security against a backdrop of unsustainable practices and rising populations. (See page ?? for the report on the FNSA project).

The other two projects, funded by the Carnegie Corporation of New York, also aim to bridge the divide between science and policy. 'Improving Scientific Input to Global Policymaking: Strategies for Attaining the Sustainable Development Goals' and 'Harnessing Science, Engineering, and Medicine to Address Africa's Challenges' both kicked off in 2016 (see pages 20-21).

In 2016, IAP also had the opportunity to have its voice heard at the highest international level. Together with three other international science organizations based in Trieste – the International Centre for Theoretical Physics



Members of the UN Scientific Advisory Board during their meeting in Trieste, Italy.

(ICTP), the International Centre for Genetic Engineering and Biotechnology (ICGEB), and the Third World Academy of Sciences (TWAS) – IAP hosted the United Nations Secretary-General's Scientific Advisory Board (24-25 May). This final meeting of the UN Scientific Advisory Board focused on climate change and climate induced risks, local and indigenous knowledge systems as enablers of sustainable development, and food security and health. The Trieste meeting also provided an opportunity to initiate a process of reflection on science consultation mechanisms that Secretary-General Ban Ki-moon put in place for the United Nations system prior to the end of his term in December 2016. The final report of the Board, published in September 2016, emphasised that science is a public good and deserves to be valued more highly and used effectively by decision-makers at all levels. It also noted that all nations must invest more in science, technology and innovation if science is to become the game-changer it could be when dealing with global challenges<sup>1</sup>. In addition, there were two specific recommendations that included the work of academies:

- Existing bodies such as the national academies of science and the UN Scientific Advisory Board should engage more systematically in reviewing existing programmes and in preparing new initiatives, thus laying the ground for scientifically informed policy-making.
  - To address these grand challenges the United Nations should press for greater collaboration among international science networks, including professional societies and academies, and indigenous and local knowledge holders.
- Indeed, IAP has a long and successful history in engaging

with national and regional governments as well as UN organizations. To give just two examples from 2016: (i) the keynote address at the IAP for Health conference on 'Promoting Health' (held in Beijing, China, 27-29 September) was given by Chinese Vice Premier Liu Yandong (see pages ??); and (ii) with IAP support, the *Accademia Nazionale dei Lincei* hosted a conference on 'Florence 1966-2016: Resilience of Art Cities to Natural Catastrophes: The Role of Academies' (held in Rome, Italy, on 11-13 October), which concluded with the signing of the 'Charter of Rome on the Resilience of Art Cities to Natural Catastrophes' which was subsequently presented to the Italian government (see pages 30-31).



South Africa's Minister for Science and Technology, Naledi Pandor, meets Daya Reddy, co-chair of IAP for Research (centre) and Volker ter Meulen, co-chair of IAP for Science (right) during the IAP Conference and General Assembly events in Hermanus, South Africa.

<sup>1</sup> <http://www.interacademies.net/2952/30887.aspx>

Likewise, the Statement, 'A Call for Action to Improve the Reproducibility of Biomedical Research' was endorsed by more than 45 member academies of IAP for Health prior to its release in September 2016. The Statement contained a series of recommendations aimed at Universities and research institutions, funders, publishers and journal editors, as well as individual researchers and credible scientific organizations such as academies.



Daya Reddy, co-chair of IAP for Research and president of the Academy of Science of South Africa (ASSAf), welcomes delegates of the IAP Conference and General Assembly to Hermanus, South Africa.

Such efforts can be classed as 'science for policy'. In collaboration with three other international scientific organizations – the International Council for Science (ICSU), the International Social Sciences Council (ISSC) and TWAS, IAP has also engaged in the inverse – 'policy for science'. In late 2015, an accord, 'Open Data in a Big Data World', which lays out 12 ideal principles for open data, was released by the four organizations under the banner of 'Science International'. With the launch of a dedicated website<sup>2</sup> and a concomitant campaign, the accord reached more than 100 endorsements, many of them by academies of science.

When it comes to strengthening the global scientific enterprise, IAP works on a series of parallel efforts, through the promotion of responsible research practices, the support of young scientists, as well as campaigning for greater inclusion of women in research careers and decision-making positions. In 2016, efforts in these areas focused on the support of the Global Young Academy and providing opportunities for other young scientists; the release of a major survey on the inclusion of women scientists in

academies around the world; and the publication of a book, 'Doing Global Science: A guide to responsible conduct in the global research enterprise' (see pages 23-24, 25-26 and 27-29, respectively).

IAP's fourth strategic priority, strengthening the global network, was achieved by providing the usual support to its regional networks: Association of Academies and Societies of Sciences in Asia (AASSA), the European Academies Science Advisory Council (EASAC), the Inter-American Network of Academies of Science (IANAS), and the Network of African Science Academies (NASAC). Reports of their 2016 activities are available on pages 32-43. In addition, IAP for Science and IAP for Health each welcomed five new member academies to their ranks (see below). This brings the total InterAcademy Partnership membership to 135 academies (see page 46-47).

#### **New IAP for Science member academies confirmed in 2016**

- National Academy of Science, Arts and Letters of Benin (ANSALB)
- National Academy of Sciences of Burkina Faso (ANSB)
- Academy of Sciences of Ecuador (ACE)
- National Academy of Sciences of Honduras
- World Academy of Art and Science (WAAS)

#### **New IAP for Health member academies confirmed in 2016**

- Academy of Sciences of the Dominican Republic (ACRD)
- Georgian Academy of Medical Science
- Hassan II Academy of Science and Technology, Morocco
- National Academy of Sciences, Peru
- Academy of Medical Sciences, Romania
- Sudanese National Academy of Sciences (SNAS)

The membership of these academies was endorsed by IAP members at the general assemblies of both IAP for Science and IAP for Health held in 2016 alongside the conferences on 'Science Advice' and 'Promoting Health' in Hermanus, South Africa, and Beijing, China, respectively. At each event, new Executive Committees were elected (see page 52), the members of which will help drive IAP's mission for the coming three years.

<sup>2</sup> [www.science-international.org](http://www.science-international.org)



InterAcademy Partnership board members with representatives from some of the IAP regional networks.



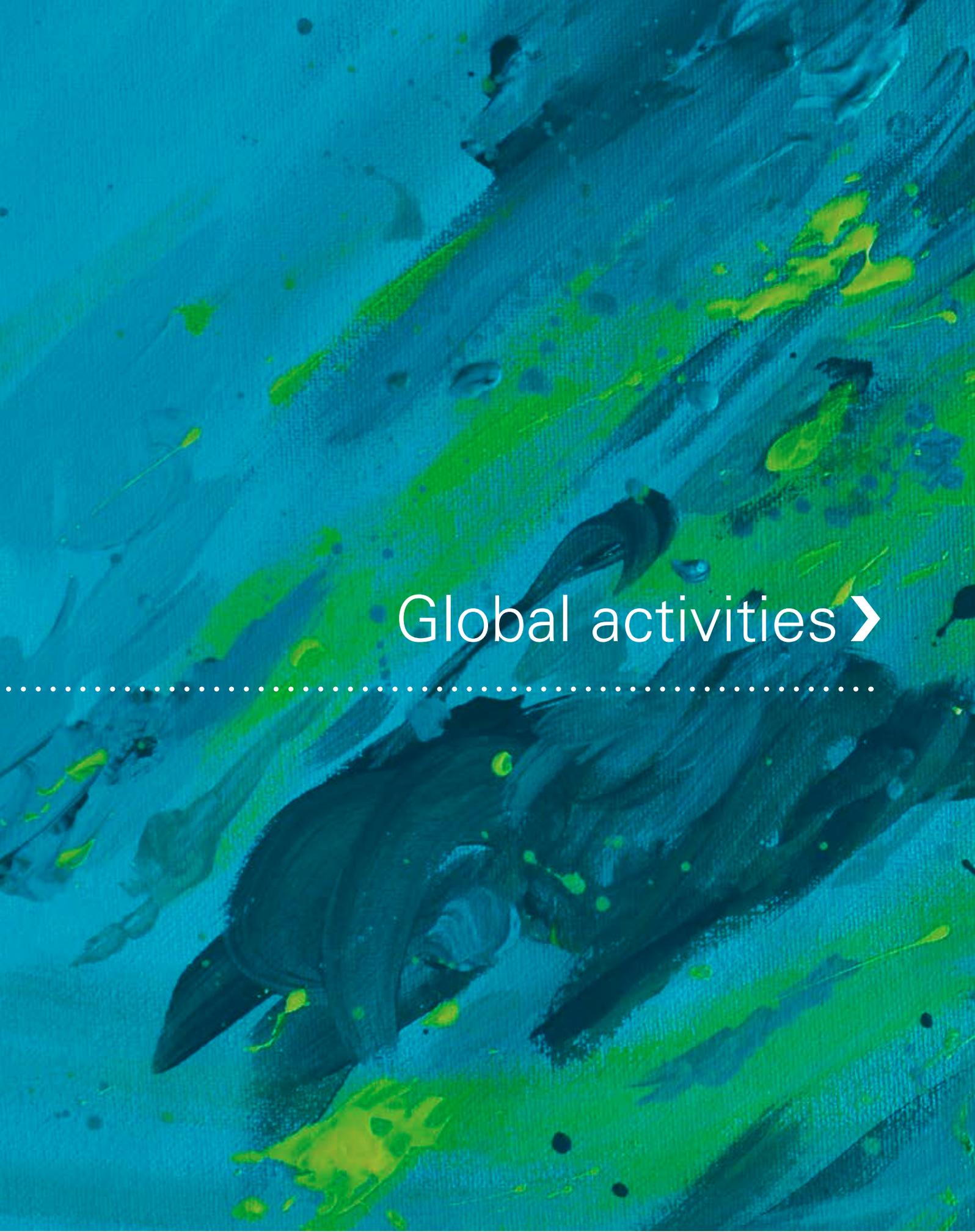
Former co-chair of IAP for Health, Lai Meng Looi (Malaysia) with a copy of the new IAP publication, 'Doing Global Science', launched in Hermanus, South Africa.



Krishan Lal (India) was elected co-chair of IAP for Science at the General Assembly in Hermanus, South Africa.

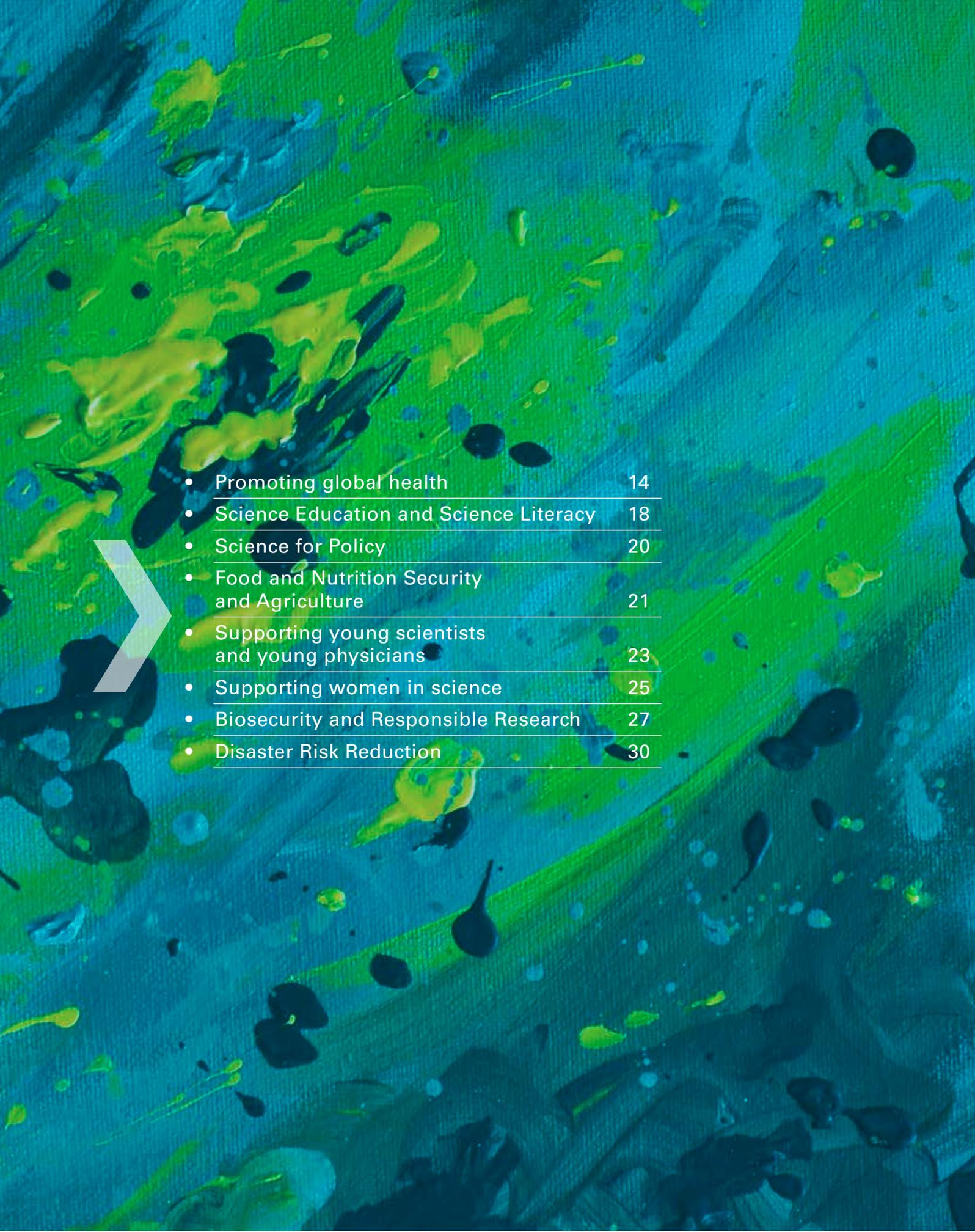


Krishan Lal (seated left) and Volker ter Meulen (seated right), co-chairs of IAP for Science, with other members of the IAP for Science Executive Committee elected at the General Assembly in Hermanus, South Africa.



# Global activities >

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## Promoting global health

**IAP for Health is a network of 78 of the world's medical academies and academies of science and engineering with strong medical sections. This component part of the InterAcademy Partnership is committed to improving health worldwide, with a special focus on low and middle-income countries.**

### Promoting health

IAP for Health's main activity during 2016 was the conference on 'Promoting Health' sponsored by the Chinese Academy of Engineering (CAE) and organized by the Chinese Academy of Medical Sciences and Peking University Medical College. The meeting, which took place on 27-28 September in Beijing, was attended by representatives of IAP for Health member academies, as well as more than 300 students and



Depei Liu, newly elected co-chair of IAP for Health and host of the IAP for Health conference on 'Promoting Health', Beijing, China.

representatives of China's healthcare system. During the conference, global experts in medical research, medical practice, and healthcare systems discussed best practices, new concepts and the future of healthcare worldwide, including how the concept of 'promoting health' can contribute to the Sustainable Development Goals (SDGs).

Among the keynote speakers was China's Vice Premier, Liu Yandong, who called for the establishment of a global health governance system and for greater aid for public health research in developing countries. She affirmed that China and the world have an obligation to ensure that those living in poverty won't remain there because of diseases such as HIV and malaria. "All these diseases are challenges to the health of humankind and the world," she said. "The strongest weapon we have to fight all major diseases is innovation in medical science."

### Statement on reproducibility of research

One of IAP's priority activities is to provide evidence-based advice to governments on critical health issues. This is often done through the release of a statement on a particular issue that has been proposed by a member academy and accepted by the Executive Committee. An expert working group, selected from nominees put forward by member academies, prepares a statement and if it is endorsed by more than half of the member academies, it is released as an official IAP for Health Statement.

In 2016, the UK Academy of Medical Sciences took the lead in developing the statement: 'A Call for Action to Improve the Reproducibility of Biomedical Research', which was released on 27 September 2016 during the IAP for Health conference in Beijing. To aid the wider dissemination and uptake of the Statement's recommendations, the document has been translated into Chinese, Hungarian, Japanese, Russian and Spanish.

### Young Physician Leaders

Since 2011, annual sessions of the IAP for Health Young Physician Leaders (YPL) programme have been held in Berlin, Germany, in association with the World Health Summit (WHS), and the meeting in October 2016 was no exception.

Prior to the WHS event IAP for Health convened a group of YPL alumni at the World Health Summit in Geneva, Switzerland, in May – the annual meeting of the World Health Organization (WHO) and its member states. Some 25 alumni from 19 countries attended.

Full details of these two events are available on pages 23-24.

The IAP for Health YPL alumni online directory, launched in 2015, now contains details of more than 130 alumni. The



Some of the 2016 cohort of IAP for Health's Young Physician Leaders (YPL) programme enjoying a break between sessions at the World Health Summit, Berlin, Germany.

directory is designed to facilitate networking between the YPL and enhance their global networking opportunities.

The YPL programme is supported financially the Tides Foundation and the Bayer Science and Education Foundation, as well as by IAP for Health and its member academies. In addition for 2016, the Swiss Academy of Medical Sciences generously contributed to the alumni's attendance of the WHA.

## World Health Summit

About 1,500 participants from approximately 90 countries attended the eighth World Health Summit (WHS) itself, which took place on 9-11 October 2016 at the Federal Foreign Office in Berlin, Germany. Keynote speakers included the



Some 1,500 participants from about 90 countries attended the World Health Summit in Berlin, Germany.

Federal Minister of Health Hermann Gröhe, and Emmanuelle Charpentier, known for deciphering the CRISPR-Cas9 genome editing mechanism.

IAP for Health was especially involved in organizing two workshop sessions at the 2016 WHS, one through its Young Physician Leaders programme (see above), and the other on 'One Health'. The concept of 'One Health' has been defined as "the collaborative effort of multiple disciplines – working locally, nationally and globally – to attain optimal health for people, animals and the environment."



IAP for Health's session on One Health at the World Health Summit, Berlin, Germany.

The IAP One Health symposium was organized in collaboration with the One Health Platform. The session focused on 'Tackling emerging infections at source'. Among the speakers were Ab Osterhaus, founding president of the One Health Platform Foundation; Fabian Leendertz, the Robert Koch Institute (RKI); Rajae El-Aouad of the Hassan II Academy of Science and Technology, Morocco, and Tony Capon, director of the International Institute for Global Health, United Nations University, Malaysia. While Leendertz focused his discussion on emerging infections at the human-wildlife interface, particularly at the village-level in Africa, El-Aouad focused on Morocco's national response to the 2009 the H1N1 avian flu epidemic. Capon took the discussion further by introducing the concept of planetary health, updating the audience on the 2015 Rockefeller Foundation-Lancet Commission report, 'Safeguarding human health in the Anthropocene epoch'.

At the WHS closing ceremony, a Statement from the M8 Alliance of Academic Health Centres, Universities and National Academies, of which IAP is a member, was released that calls on global leaders to take bold action on five topics central to global health:

- Empowerment of women and girls;
- Right to health of refugees and migrants;
- Resilience and global health security;
- Antimicrobial resistance; and
- Investment in research, development and health innovation.



IAP for Health Executive Committee members and presidents of member academies meet with Chinese Vice Premier, Liu Yandong, on the sides of the IAP for Health Conference on 'Promoting Health', Beijing, China.

## Urban health

IAP is collaborating with the International Council for Science (ICSU) and the United Nations University (UNU) on a project, 'Health and Wellbeing in the Changing Urban Environment: A systems analysis approach'.

Former IAP for Health co-chair, Jo Boufford – who is also president of the International Society for Urban Health (ISUH) – represents IAP in this initiative. In January 2016, then co-chair Lai Meng Looi represented IAP for Health, joining 170 other experts with different areas of expertise at the 'Urban



Liu Yandong, presenting her keynote address to delegates at the IAP for Health Conference on 'Promoting Health, Beijing, China.

Thinkers Campus on Health and Wellbeing in the City', in Kuching, Malaysia. Urban Thinkers Campuses (UTC) are UN Habitat initiatives designed as platforms to bring together interested stakeholders to address challenges and propose solutions to urban futures. The deliberations in Malaysia raised issues and solutions that were developed into a joint statement, 'The City We Need 2.0', which was adopted in Prague, Czech Republic, in April and which fed into the UN Habitat III Conference in Quito, Ecuador, in October 2016.

Along with deliberations at the 13<sup>th</sup> International Conference on Urban Health on the theme of 'Place and Health', held in

San Francisco, USA, in April 2016, such efforts are helping to ensure that health issues are at the forefront when future urban environments are discussed at the international level, such as at UN Habitat meetings.

## Health science education



IAP for Health co-chair, Detlev Ganten, presenting at the conference on 'Promoting Health', Beijing, China.

Two Italian academies, the *Accademia Medica di Roma* and the *Accademia Nazionale dei Lincei*, are collaborating in the implementation of the project, 'Health Science Education in Compulsory Primary Schools'. The project, which is being piloted in two contrasting primary schools in the Rome area, completed its second year during the 2014-2015 school year, with the results published (in English and Italian) in 2016. The third year of the project, following the same cohorts of children, ran through the 2015-2016 school year.

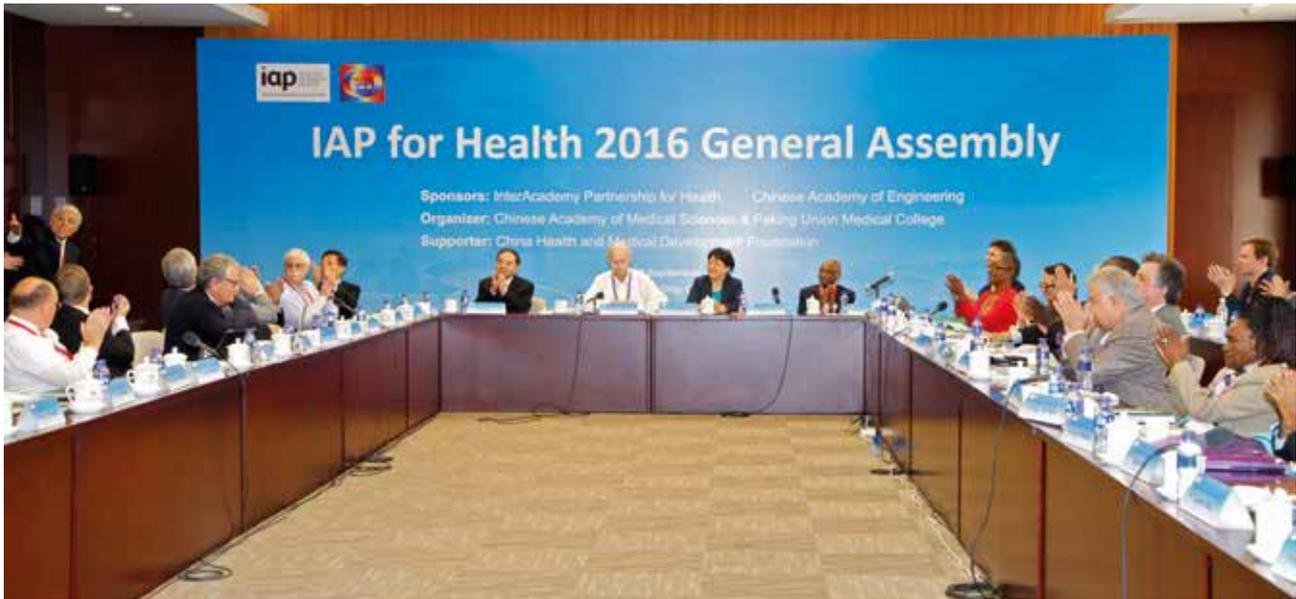
## Academy projects

Following the 2015 call for proposals from member academies, the IAP for Health Executive Committee approved funding for four projects to be carried out during 2016:

- Back-to-back conferences were organized by the Brazilian Academy of Sciences and the National Academy



Special session for IAP for Health Executive Committee members and presidents of member academies on the sides of the IAP for Health Conference on 'Promoting Health', hosted by Chinese Vice Premier, Liu Yandong, Beijing, China.



IAP for Health General Assembly, Beijing, China.

of Medicine, Brazil. 'The Zika menace in Americas: Challenges and perspectives' (7-8 November 2016) was followed by 'One year after the announcement of the national public health emergency in Brazil: Lessons, achievements and challenges' (8-10 November). More than 60 speakers and discussants from ten American and two European countries, as well as representatives from the Pan-American Health Organization (PAHO) attended.

- The Federation of European Academies of Medicine (FEAM) organized a workshop on 'European landscape for human genome editing', in Paris, France, in April, which will lead to the publication of a status report on 'Human genome editing in the EU'. The Paris meeting was held back to back with the US National Academy of Sciences and National Academy of Medicine's Committee on Human Gene Editing meeting, which focused on principles underlying human gene editing governance and policy.
- A workshop on 'Addressing Inequities in Health: Fostering action on social determinants', led by the National Academy of Science and Technology, Philippines (NAST) in collaboration with the Academy of Sciences Malaysia, the Nigerian Academy of Science and the University of the Philippines, Manila, was held on 3-4 October 2016 in Manila, the Philippines.



Carmencita Padilla (Philippines), IAP for Health Executive Committee member, discusses the sustainable Development Goals at the IAP for Health Conference on 'Promoting Health', Beijing, China.

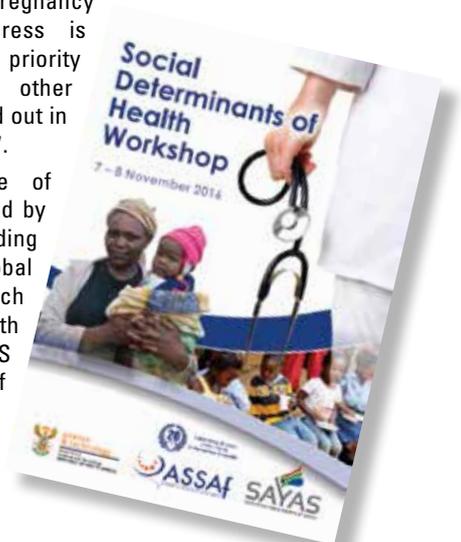
- A workshop on 'Social Determinants of Health', led by the Academy of Science of South Africa (ASSAf) was held in collaboration with the Nigerian Academy of Science, the Uganda National Academy of Science and the South African Young Academy of Sciences on 7-8 November 2016 in Johannesburg, South Africa.

### New partnership

IAP for Health entered into collaboration with the UK Academy of Medical Sciences (AMS) to assist in the organization of a workshop on 'Improving the development and deployment of rapid diagnostic tests in Low and Middle Income Countries'. The event, held in London on 21 November 2016, featured the participation of 56 experts nominated by member academies from Bangladesh, Brazil, Guatemala, Malaysia, Morocco, Nigeria, the Philippines, Uganda, Trinidad and Tobago and the UK.

Participants agreed that more attention should be paid to developing rapid diagnostic tests for diseases such as Ebola and SARS, highlighting that such tests should be as efficient as the most common pregnancy test, but that progress is hindered by financial priority setting. These and other conclusions will be laid out in a full report due in 2017.

The meeting is one of several being organized by the AMS, thanks to funding from the UK Global Challenges Research Fund. IAP for Health will work with AMS in the realization of similar workshops on other critical issues for healthcare in developing countries.



# Science Education and Science Literacy

The IAP Science Education Programme (SEP) was launched in 2003. It is guided by a Global Council of 13 members, currently chaired by Dato Lee Yee Cheong of the Academy of Sciences Malaysia. A major thrust of the SEP is to promote inquiry-based science education (IBSE).



Dato Lee Yee Cheong (Malaysia), chair of the Global Council of IAP's Science Education Programme, addressing delegates at the International Conference on 'Improving the Learning of Biology and Related Sciences at the Pre-University Level', Santiago, Chile.

Among its main activities, the IAP SEP organizes a biennial science education conference. In 2016 it was hosted at the University of Chile on 14-15 April in Santiago, Chile. The conference focused on 'Improving the Learning of Biology and Related Sciences at the Pre-University Level'. More than 200 people attended, many being schoolteachers from Chile eager to learn about the latest development in IBSE, plus science education experts from more than 20 countries.

In his keynote address, Bruce Alberts, former president of US NAS and editor-in-chief of *Science* magazine, argued that the way we teach science has to change. "We are not going to make great strides in science education until we have scientists continually supporting teachers and the system," he said, adding that in his home city of San Francisco, scientists volunteer more than 10,000 hours per year. "Active learning needs to be added to 'stagnant classes'," he continued. "This can't be done overnight, but courses can be adapted one module at a time."

These ideas have been taken up in Chile, where mobile laboratories have been taken to schools so that pupils aged 16-17 can practice genomic and molecular biology techniques through hands-on experiments. The equipment and materials required for the laboratory sessions fit into two suitcases.

To begin with, teachers are trained in the laboratory modules and then they invite the mobile lab to their school – which



Presentation by Malaysia to UNESCO Director-General, Irina Bokova, on inquiry-based science education, Paris, France.



Discussants in the session on 'Risk Communication on Public Issue: Mosquito-borne diseases - a case study' at the National Science and Technology Fair in Bangkok, Thailand.

is accompanied by postgraduate students from a nearby university. During a 5-day course, pupils receive eight lectures and undertake four practical classes. To date, the mobile labs have visited 27 schools in the Santiago area. Members of the IAP SEP Global Council visited a school in Santiago where the mobile lab was in use. One former student explained how he was inspired to study biology



Yves Quéré, former chair of the Global Council of IAP's Science Education Programme, reviewing children's hands-on science experiments at an event organized by Malaysia at UNESCO headquarters, Paris, France.

and is now working on research aimed at improving salt tolerance in crop plants.

At the Global Council meeting in Chile – which took place just as the World Health Organization declared the Zika virus epidemic in South America as a global health emergency – it was agreed that a special effort should be made to educate children on the dangers posed by mosquitoes and the diseases they transmit, e.g. by designing school curricula.

Funding was subsequently secured from the Gordon and Betty Moore Foundation for the Smithsonian Science Education Centre in Washington DC, USA (led by Carol O'Donnell, another Global Council member), to develop IBSE-based modules to assist teachers and pupils to learn about mosquito-borne diseases. The modules will be developed during 2017, tested, and eventually translated and adapted by local experts for use in different parts of the world.



Presentation by teachers and high school students of a travelling molecular biology 'lab in a suitcase' on the sides of the International Conference on 'Improving the Learning of Biology and Related Sciences at the Pre-University Level', Santiago, Chile.

The Global Council also agreed that the SEP should start to bring together science historians from different regions to discuss each region's input into scientific knowledge and scientific thinking, how the free exchange and sharing of information has uplifted the human condition in all the regions, and how courses developed for school children can lead to mutual understanding and harmony. Based on the Government of China's One Belt One Road project, the SEP initiative will begin by building on the accomplishments of civilisations that grew up along the historic Silk Road.

The ECO Science Foundation, which represents 10 countries in the west/central Asia region, is led by Manzoor Soomro, a member of the IAP SEP Global Council. Among its 2016 activities were courses for teacher-trainers in Iran and Pakistan, with the expectation that those receiving training would then teach many others in the practice of inquiry-based methods.

Under the 'science literacy' banner, IAP also participated in a special session on 'Risk Communication on Public Issue: Mosquito-borne diseases - a case study' at the National Science and Technology Fair in Bangkok, Thailand, in August



Sharifah Maimunah Syed Zin (Malaysia) and other delegates at the International Conference on 'Improving the Learning of Biology and Related Sciences at the Pre-University Level', Santiago, Chile.

2016. On the five-person panel alongside Dato Lee Yee Cheong was Yongyuth Yuthavong, Thailand's former deputy prime minister and a renowned malaria scientist.

"There is a continuum between problems and solutions – and an inter-dependence between them," informed another panel member, Hak-Soo Kim, director of the Policy Research Institute of the Korean Academy of Science and Technology (KAST), who is also chair of the AASSA Special Committee on SHARE (Science, Health, Agriculture, Risk and Environment) Communication. "Risk enters the equation as it is a measure of the potential side-effects of a solution."

However, the concept of 'risk' is not one that is easily communicated to the public or to governments, which must weigh up alternative scenarios, account for the risk involved in each one, and arrive at the best option to feed into policy.

The Thai National Science and Technology Fair, which featured a display on 'Living with Mosquitoes', attracted more than 500,000 visitors.



Thai schoolchildren visiting an exhibit on mosquitoes at the National Science and Technology Fair in Bangkok, Thailand.

The IAP SEP also cooperated with the International Science, Technology and Innovation Centre for South-South Cooperation (ISTIC, based in Malaysia) and *La Main à la Pâte* (LAMAP, based in France) to conduct IBSE training workshops for Malaysian and ASEAN (Association of Southeast Asian Nations) schoolteachers. This resulted in the Malaysian government establishing a National STEM Centre for teachers' training.

Finally, in efforts to improve coordination between the different components of the InterAcademy Partnership, a representative of IAP for Health, Mario Stefanini (Italy) has been added as a member of the SEP Global Council.



Bruce Alberts (USA, centre, right), member of the International Advisory Board to IAP's Science Education Programme, interacting with high school biology students on the sides of the International Conference on 'Improving the Learning of Biology and Related Sciences at the Pre-University Level', Santiago, Chile.

## Science for Policy

Two new projects being led by IAP for Research and funded by the Carnegie Corporation of New York were launched in 2016:

- 'Improving Scientific Input to Global Policymaking' is designed to engage IAP member academies and the growing number of young academies globally on the Sustainable Development Goals (SDGs) agenda.
- 'Harnessing Science, Engineering and Medicine to Address Africa's Challenges' is designed to engage senior and young African academies on regional policymaking on the continent, with a focus on the Science, Technology and Innovation Strategy for Africa 2014 (STISA-2024), adopted by the African Union (AU) in 2014.

Both projects are addressing some of the barriers to influencing global and regional policymaking, as well as



Steering committee members of the project 'Harnessing Science, Engineering, and Medicine to Address Africa's Challenges', being implemented by IAP for Research.

helping to contextualise the academies within wider national, regional and global systems. Their common goal is to help to raise awareness of global and regional policy frameworks amongst the academies so that their strengths as foci for scientific excellence nationally, regionally and globally can be better applied to meet important policy challenges.

Each project is led by an international Working Group (see page 53). The members of both groups, representing a range of geographies and disciplines, were drawn from a pool of nominees submitted by IAP member academies, the Global Young Academy (GYA), the International Council of Academies of Engineering and Technical Sciences (CAETS) and the International Council for Science (ICSU). All the Working Group members have experience in international science and in applying science to public policy.

An emphasis for both projects in their first year was a survey of IAP member academies and national young academies on their engagement with the UN's Agenda 2030 and the SDGs and, for African academies, with the AU. More than 80 academies responded, with both senior and young academies showing a willingness to support global and regional policy frameworks but also seeking a better understanding of how they might do this more effectively.

### Improving Scientific Input to Global Policymaking

The objectives of this project, launched in August 2016, are to:

- explore the strengths, weaknesses and opportunities for global science advice, in the context of the UN SDGs and with reference to the role of the science academies;
- develop strategies for optimising regional and national evidence-based implementation of the SDGs;
- map the changing architecture of science that is required to meet these goals; and
- identify the most challenging issues in implementing the SDGs to which science and technology can contribute.

Chaired by Li Jinghai (China) and Eva Alisic (former GYA co-chair), the Working Group met in New York, USA, to consider written evidence and hear insights from invited experts. Among these experts were Susan Avery, member of the UN Science Advisory Board, along with William Colglazier (Center for Science Diplomacy, American Association for the Advancement of Science) and Heide Hackmann (ICSU executive director), who act as co-chairs of the 10-Member Group steering the UN's Technology Facilitation Mechanism. During the meeting, the assembled experts discussed the key challenges that academicians, scientists and science advisors face in influencing global policy.

A work programme is now underway, focusing on:

- helping to raise academies' awareness of the SDGs and the UN system supporting them;
- raising the profile, and in some cases supporting, academies' science policy work and interests where pertinent to the SDGs;
- exploring opportunities for more active and effective engagement at the national level; and
- providing intellectual leadership on how academies may need to adapt to better deliver knowledge that supports the SDG agenda, and to be more relevant to meet 21<sup>st</sup> Century challenges.

The project complements related initiatives of ICSU, the International Network of Government Science Advisers (INGSA) and others.

### Harnessing Science, Engineering and Medicine to Address Africa's Challenges

The objectives of this project, which was launched in September 2016, are to:

- mobilize African leaders in science, engineering and medicine through new approaches to addressing shared challenges;
- strengthen merit-based academies in Africa; and
- build stronger, sustained linkages and partnerships between African and global expertise in science, technology and innovation (STI) and the policymakers and donor organizations working to address Africa's challenges.

Chaired by Robin Crewe (South Africa) and Oyewale Tomori (Nigeria), the Working Group met in Nairobi, Kenya, to consider written evidence and hear insights from invited experts on the key challenges that academicians, scientists and science advisors face in influencing policy in African countries. Among the invited experts were Jacqueline McGlade, chief scientist at the United Nations Environment Programme (UNEP) and Caroline Ngugi, professor at the Jomo Kenyatta University of Agriculture and Technology, Nairobi, Kenya.

As with the global project, a work programme is underway, this time focusing on:

- helping to raise awareness of STISA-2024 and the AU system supporting it among African senior and young academics;
- raising the profile, and in some cases supporting, the academies' science policy work where it is pertinent to STISA-2024;
- exploring opportunities for more active and effective engagement at the national, regional and continental level,

including building links with the AU, the New Partnership for Africa's Development (NEPAD) and the Regional Economic Communities (RECs); and

- developing ways of engaging the African diaspora and building science leadership.

Several Working Group members have also attended relevant meetings on behalf of the project, including the African National Young Academies Regional Conference in Mauritius, the TWAS General Meeting in Kigali, Rwanda, the 12<sup>th</sup> Annual Meeting of African Science Academies (AMASA-12) in Johannesburg, South Africa, and an EU-Africa bilateral strategy meeting, also in Johannesburg. The project was also represented at the second Science Forum South Africa in December, with Robin Crewe leading a thematic session. All of these events have helped inform the project and refine its workplan and ambitions.

*For additional information, see:*

<http://www.interacademycouncil.net/23942/23943/29494.aspx> and <http://www.interacademycouncil.net/23942/23943/29492.aspx>



Steering committee members of the project 'Improving Scientific Input to Global Policymaking: Strategies for Attaining the Sustainable Development Goals', being implemented by IAP for Research.

## Food and Nutrition Security and Agriculture

**The German National Academy of Sciences, Leopoldina, in collaboration with the InterAcademy Partnership, is undertaking a project on 'Food and Nutrition Security and Agriculture'. The project, which began in 2015, is almost exclusively funded by the German Federal Ministry of Education and Research (BMBF), although additional support has been provided by IAP and several of its member academies.**

At a time of increasing pressures from population growth, climate change, social and economic inequity and instability, the continuing need to avoid further loss in ecosystem biodiversity, and pressures on other critical resources (such as water and energy), there are major challenges in delivering food and nutrition security. While agriculture clearly has a central role to play in tackling food and nutrition security, food and nutrition security also rely on physical, biological, socio-political and economic environments. Furthermore, tackling the challenges of sustainable agriculture requires the deployment of all available approaches, from traditional to novel, to build on the existing achievements of good agronomic practices.

The project aims to produce four regional reports, together with an over-arching global synthesis that highlights the similarities and differences between the regions. The series of reports will provide advice and recommendations for implementation at national, regional and global levels, customised according to local circumstances and strategic needs. Indeed, a core part of this IAP activity is to combine the twin goals of delivering strong, consensus messages at the global level, with clarification of the scientific basis of current disparities in policy expectations and objectives and future options in different regions of the world. Indeed, IAP sees the format of this project as a proof-of-principal for future projects on other issues at the interface of science



Meeting of the IANAS regional working group on the IAP Food and Nutrition Security and Agriculture (FNSA) project.

and policy that would have different inputs and different recommendations across the regions.

The project was initiated with a meeting at the German National Academy of Sciences, Leopoldina, in Halle, Germany, on 31 May - 2 June 2015. At this meeting, the modality of the project was presented to representatives of each of IAP's four regional networks: the Association of Academies and Societies of Sciences in Asia (AASSA) for the Asia/Pacific region; the European Academies Science Advisory Council (EASAC) for Europe; the InterAmerican Network of Academies of Science (IANAS) for the whole of the Americas; and the Network of African Science Academies (NASAC) for the continent of Africa.

The Halle meeting was also attended by experts from around the globe nominated by IAP member academies, and a series of ten key questions was developed to ensure consistency among the reports that will be produced by the four IAP regional networks.

Following the kick-off meeting, each IAP regional network established a Working Group charged with developing the draft report for its region. A review meeting of the Working Groups was convened in Hermanus, South Africa, on 28 February 2016, prior to the IAP Conference on Science Advice. The goal was to keep the process coordinated and on track, as well as to clarify how the work by IAP and its regional networks might add value to the considerable work already published in this domain.

A series of Working Group meetings were then convened by each regional network during the remainder of 2016 aimed at further developing the regional reports.

Already it is clear that, to achieve food security – meaning adequate access to both macro and micronutrients – there is an ongoing need to identify and tackle key targets and

to link the health-related indicators of the Sustainable Development Goals (SDGs). The project is thus focusing not only on food production issues, but also on issues related to the need to reduce food loss (for example caused by post-harvest pests) and waste (either in the market or the home). The demand-side of food security is also being examined, for example the impact of changing food preferences and dietary composition. Indeed, as well as under-nutrition, many countries are facing increasing health problems among their populations due to over-nutrition and related non-communicable diseases such as diabetes.

It is expected that near-final draft regional reports will be ready by the end of 2017, with the global overview to be released in 2018.

The project is being coordinated by Volker ter Meulen, co-chair, of IAP for Science and past president of the German National Academy of Sciences, Leopoldina.



## Supporting young scientists and young physicians

**IAP's third strategic priority focuses on strengthening the global scientific enterprise. A key component of this is supporting the careers of young scientists and assisting them engage with policy-makers. Likewise, IAP for Health provides leadership training for Young Physician Leaders (YPL) as part of its efforts to strengthen healthcare systems around the globe.**

### Global Young Academy

The Global Young Academy (GYA) was founded in 2010. Since its inception it has received support from IAP for Science and now from the InterAcademy Partnership. IAP especially provides support for the GYA's annual general meetings and international conference of young scientists. In particular, funds are used to support the participation of GYA members from developing countries.



Executive committee of the Global Young Academy (GYA) elected at its General Assembly in Eindhoven, the Netherlands.

The theme of the 2016 conference, which took place in Eindhoven, the Netherlands, on 25-29 May, was 'Bridging Worlds Through Science'. It focused on the pivotal role young scientists can play in different aspects of science diplomacy. While a workshop on science diplomacy was organized in collaboration with UNESCO, other sessions focused on 'Open Data and Science Diplomacy' and 'Science Diplomacy for International Negotiation and Peace Building'.

The events in Eindhoven brought together GYA members, distinguished members of the GYA advisory board, senior scientists, and science administrators from around the world. Among the other activities were working group sessions, the induction of new members, and the graduation of outgoing members who have served their five-year terms.

IAP also provided support to the GYA to produce its report on 'Municipal Solid Waste Management and Green Economy'. This policy report, considers common issues that high, moderate, and low-income countries face in seeking to address solid waste management and the green economy. As well as identifying challenges shared by nations and stakeholders, it also highlights those that are unique to regional, social and economic situations. It ends with a series of specific recommendations for improved solid waste management.

### Representation

During 2016, IAP also supported the participation of young scientists nominated by academies to attend major international conferences.

Four young scientists – Shaniko Allajbeu from Albania, Agostina Carestia from Argentina, Ahlan Sabah Ferdous from Bangladesh and Issa Diedhiou from Senegal – attended back-to-back events at the *Bibliotheca Alexandrina* in Egypt.

The first was BioVisionAlexandria.Nxt 2016 (10-11 April), which focused on 'Research ethics and social responsibility'. More than 40 young scientists, mainly from developing countries, were informed about intellectual property rights, dual-use research, responsible authorship, plagiarism, and the fabrication/falsification of data.

The second was the main BioVisionAlexandria 2016 conference (12-14 April), which included presentations by Nobel laureates and other high-level speakers. The theme was 'The New Life Sciences: The road ahead', and focused on critical issues including as food security, climate change, the rapid evolution of robots and bio-robots, new technologies in genetics, and commercialization in the biosciences..

"It was great to meet people that made such impressive contributions to science and to listen to their opinions and ideas about the crucial issues that I have to take into consideration when thinking about my career in the future," said Allajbeu.

In addition, Romana Siddiqi, nominated by the Bangladesh Academy of Sciences, and Abdelsalam Badre from Morocco, nominated by the GYA, were supported by IAP to attend the UNISDR Science and Technology Conference on the implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030 in Geneva, Switzerland, 27-29 January 2016. The meeting, which brought together more than 700 researchers and other stakeholders, aimed at developing a roadmap on how best science and technology can help achieve the implementation of the 2015 Sendai Framework (see pages ??-??).

### Young Physician Leaders

Effective healthcare institutions need effective leaders. However, developing leadership qualities among health professionals is often neglected and many young professions learn their leadership skills almost by trial and error.

Although incorporating leadership training programmes into the medical curriculum is increasing, in practice too few countries are actually providing such training. To contribute to building capacity in this area, IAP for Health launched its Young Physician Leaders (YPL) programme in 2011 in partnership with the World Health Summit (WHS) and the M8 Alliance of Academic Health Centres and Medical Universities. Now, after six annual workshops and regional events, the trained YPL constitute network of more than 130 alumni whose details are available in a dedicated online directory.

The 2016 cohort that received training in a side event to October's WHS included 19 young physicians from 17 countries nominated by IAP member academies. Although



The 2016 cohort of IAP for Health's Young Physician Leaders (YPL) programme with programme leader, Jo Ivey Boufford (USA) at the World Health Summit, Berlin, Germany.

the young physicians had varied fields of expertise, from intensive care and anaesthesiology, to epidemiology and ophthalmology, they all have one thing in common: they are grappling with the issues of increasing management and leadership responsibilities despite having had no formal training to deal with such matters.

The IAP for Health YPL programme addresses this shortcoming by providing an intensive two-day leadership training experience and then coaching the YPL to develop a specific session on leadership to be presented during the main sessions of the WHS that immediately follows the workshop. This year also marked the beginning of a new partnership, with the Berlin-based European School of Management Technology (ESMT) teaming up with long-time project leader Jo Boufford (former IAP for Health co-chair) in presenting the training workshop.

Participants gained insights provided by Boufford and ESMT's Nora Grasselli, from peer-to-peer consultations, as well as from the opportunity to quiz members of a panel of senior leaders in global health. In addition, the YPL were tasked with preparing a session to be presented within the core WHS programme. During this session, 'The Leadership We Want', the latest YPL cohort shared their own professional experiences and insights.

As part of their experience, the YPL were also networked with the researchers, representatives of private companies, nongovernmental organizations (NGOs) and international

organizations, as well as policymakers, that the WHS brings together.

## World Health Assembly

As an addition to the regular annual leadership training, a group of 25 alumni from 19 countries attended the 69<sup>th</sup> World Health Assembly (WHA) of the World Health Organization (WHO) and its member states in Geneva, Switzerland (23-28 May 2016).

The experience provided the alumni with the perfect opportunity to be exposed to the global level of health programmes and policy-making, to see how their countries fit into the process, and to be exposed to role models who have taken on global leadership roles to advance health.

To maximize the benefits to the alumni, the convened YPL attended a pre-WHA workshop where they explored leadership styles, reviewed how to manage difficult conversations, and learned about time management. They also attended an 'Introduction to the World Health Assembly: A briefing for new delegates' hosted by the Graduate Institute Geneva on behalf of the United Nations Foundation.

Thanks to their nominating academies, several YPL were able to obtain accreditation with their national delegations prior to the WHA, while others were accredited through NGOs such as the Council on Health Research for Development (COHRED) and the World Federation of Public Health Associations (WFPHA). Indeed, during the WHA, some YPL were able to link up with and participate alongside their national delegations. This arrangement enabled them to engage closely in the decision-making processes.

The YPL also had the opportunity to visit the headquarters of the WHO where they met with the Deputy Director General, Anarfi Asamoah-Baah and Thomas Zeltner, special envoy to the WHO director general and IAP for Health executive committee member, among others. In particular, Asamoah-Baah took the time to discuss the challenges facing the WHO and his own personal journey to leadership as well as engaging actively with the YPL in answering their many questions.

The involvement of the YPL alumni in the WHA was made possible thanks to financial support from the Swiss Academy of Medical Sciences.



In 2016, alumni of IAP for Health's Young Physician Leaders (YPL) programme were invited to attend the World Health Organization's World Health Assembly, Geneva, Switzerland.

## Supporting women in science

**Academies of science, medicine and engineering have a dual mandate: to honour scientific excellence, and to provide evidence-based scientific advice in support of policy development to their governments and stakeholders. In order for this mandate to be fully realised, the recognition through academy membership and participation of women scientists in academies' science advisory activities is critical.**

In 2006, the InterAcademy Council (IAC, now IAP for Research) published 'Women for Science: An Advisory Report', aimed at providing information and recommendations to academies on the importance of the full inclusion of women in science, technology and innovation (STI) activities. One of the recommendations of the report was the importance of continually collecting gender-disaggregated data from academies, and reporting these data regularly.

To this end, two surveys were carried out during 2015 on the status of women in IAP for Science member academies with regard to their representation in membership (including disciplinary breakdown), governance and academy activities.

The Inter-American Network of Academies of Science (IANAS) took responsibility for a survey of its 19 member academies, while the Academy of Science of South Africa (ASSAf), conducted a survey of IAP member academies in the other world regions. The combined surveys generated 72 useable questionnaires: 69 from national science academies and three from global academies. Work for the surveys was supported financially by IAP and enjoyed the support of the Organisation for Women in Science for the Developing World (OWSD) and the Network of African Science Academies (NASAC). ASSAf eventually published the global report, which included the IANAS data, 'Women for Science: Inclusion and Participation in Academies of Science', in February 2016. The report presents the first comprehensive survey of academies of science globally, and its release was timed to coincide with the IAP Conference on 'Science Advice' hosted by ASSAf in Hermanus, South Africa.

Although great strides have been made in enrolling more women in undergraduate courses, especially in the biological and chemical sciences (success has been more limited in the areas of physics, mathematics and engineering), the report reveals that there continues to be low representation of women with academy fellowship in all these areas, and significant challenges remain to ensure that the best women scientists are able to have fulfilling careers with increasing levels of responsibility, eventually taking up leadership and decision-making positions.

### Findings

- The average proportion of women members across 69 national science academies was 12%.
- In 30 of 69 science academies, the proportion of women members was either 10% or less.
- The two national academies with the largest proportion of women are both IANAS members: the Cuban Academy of Sciences (27%) and the Caribbean Academy of Sciences (26%). The national science academies of Mexico, Nicaragua, Peru, Uruguay and Honduras are all among the top 10 academies with the largest proportions of women members.



Jennifer Thomson (South Africa, seated) and Adriana De la Cruz Molina (IANAS, Mexico) at the launch of the IAP report on 'Women for Science: Inclusion and Participation in Academies of Science'.

- Women are 'best' represented in the social sciences, humanities and arts (16% of all members in these disciplines, across all science academies, are women), followed by the biological sciences (15%) and the medical and health sciences (14%). Women's representation as academy members is least in the mathematical sciences (6%) and engineering sciences (5%).
- The share of women serving on academies' governing bodies (20%) markedly exceeded the share of women in the academy membership (12%).
- The highest representation of women as members of the governing body were the National Academy of Sciences in the US, Switzerland and Sweden, all with 47%. Academies in the Netherlands (43%), Cuba (40%), the UK (40%), Canada (38%), Panama (38%) and Ireland (36%) also recorded a relatively high proportion of women in their governing bodies.
- 17% of academies surveyed by ASSAf reported either their current or previous president/chair to be a woman.
- Both the ASSAf and IANAS surveys asked whether the academies had any document (e.g. strategy, gender policy or founding document) that explicitly mentioned the need for increased participation of women in the academy activities. Of the 68 academies that answered, 27 (40%) responded in the affirmative.
- Thirteen (26%) out of 50 academies in the ASSAf survey said that they had a programme(s) on 'Women in Science'. While the notion of 'programme' was broadly interpreted, there was a discernible focus on programmes and incentives to attract girls and young women to science careers, as well as on how to ensure their continued participation in the science enterprise.
- Only 17% of academies in the ASSAf survey strongly agreed that they had increased their numbers of women scientists in the nomination pool for membership.

- About two-thirds of respondents in the ASSAf survey agreed that their national academy had made some progress in terms of the promotion of more women to decision-making levels (67%), and the inclusion of more women in its panels and committees (65%).
- Just over half (52%) agreed that the number of women in the nomination pool for prizes and awards had increased.
- One of the key recommendations of the 2006 IAC report was the call for each academy to have a gender-balanced committee to address gender/diversity issues, or at least someone to advise the academy on gender/diversity issues. A third of academies (17) said that they have such an established infrastructure (i.e. a dedicated committee), while another three academies (6%) relied on the input and guidance of individuals. However, 61% of responding science academies in the ASSAf survey did not have either.

## Recommendations

- IAP member academies should annually collect, analyse and report gender-disaggregated
- data on their respective membership and activities.
- IAP member academies should establish permanent organizational structures that provide strategic direction and implement the academy's gender mainstreaming activities. Where applicable, it is advised that either a 'Women or Gender in Science, Technology and Innovation (STI) Committee' or a National Chapter of the Organization for Women in Science for the Developing World (OWSD) be established. Such entities would be charged with:



Young Latin American students at the launch of the IANAS publication 'Young Women Scientists - A bright future for the Americas: Discover why and how these young women decided to become scientists'.

- **Data collection:** Coordinate and advocate for the annual collection, analysis and reporting of gender-disaggregated data by the academy and within the nation's STI system.
- **Advice:** Provide strategic direction to academies' governing councils on targets and appropriate strategies for including more women in academy membership, governance and activities.
- **Gender equality:** Ensure a gender analysis is included in academies' science advisory functions and that

measures are implemented to ensure women's participation in academies' advisory activities.

- **Partnerships:** Promote and develop activities, programmes and projects that seek to advocate for gender equality in STI.
- **Research:** Advocate for relevant research into women's participation in science academies and in STI in general.
- **Policy analysis:** Propose strategies for policy analyses where gender is a key variable, such as in issues related to establishing research agendas, health, food, education, biodiversity and development.

"The findings of this report and its recommendations should be used as a guideline for academies of science, globally, to develop strategies on increasing women's participation in academy activities," said Daya Reddy, co-chair of IAP for Research and then-president of ASSAf.

"We very much hope that this report will be used as a guideline for academies to develop strategies for increasing women's participation in their activities. We also hope that the report's recommendations will be heard, read and acted upon more widely, beyond the IAP membership. By sharing this report with the broadest audience possible, we expect that it will catalyse meaningful dialogue – and be converted into meaningful actions – on the issue of women's representation in leadership positions that continues to be of importance to society," added Volker Ter Meulen, co-chair, IAP for Science.

## CILAC

IAP's 'Women in Science' programme was also visible at the First Latin American and the Caribbean Open Science Forum (CILAC), held on 6-9 September 2016 in Montevideo, Uruguay, and formulated within the framework of the 2030 Agenda of the Sustainable Development Goals.

IAP supported the participation of two eminent women scientists: Maryse Lassonde, president of the Royal Society of Canada, and Katherine Vammen, co-chair of the IANAS Water Programme. In particular, IAP contributed to a session coordinated by Trieste-based GenderInSITE on 'Networking globally to advance women in science: The role of international organizations'. Panellists of international science organizations, including IAP/IANAS, the Organization for Women in Science for the Developing World (OWSD) and The World Academy of Sciences (TWAS), discussed their successful practices in capacity building, networking, leadership training and raising awareness regarding gender, science and sustainable development.

In addition, Vammen participated in a session on 'Managing water in the Americas: Bringing a science and gender lens to the table'.

Among the co-organizers of CILAC 2016 was the United Nations Educational, Scientific and Cultural Organization Regional Office for Sciences for Latin America and the Caribbean (UNESCO Montevideo).

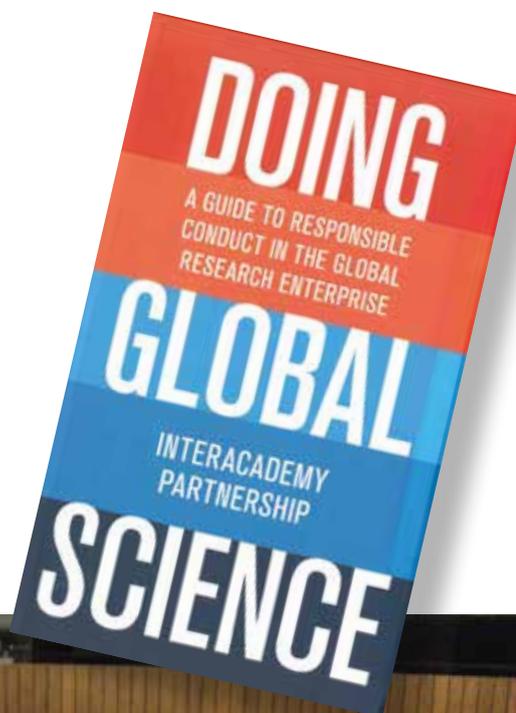


## Biosecurity and Responsible Research

The IAP General Assembly agreed to establish a Biosecurity Working Group in 2003, designed especially to link with the Biological and Toxin Weapons Convention (BWC). Currently, membership of the Biosecurity Working Group includes Australia, China, Cuba, Egypt, India, Nigeria, Pakistan, Poland, Russia, the United Kingdom and the United States

In February 2016, IAP released 'Doing Global Science: A Guide to Responsible Conduct in the Global Research Enterprise'. The teaching guide offers guidance on conducting research responsibly in a research environment that is increasingly international and multidisciplinary, and identifies responsible research practices that scientists around the world should embrace, as well as highlighting practices that should be avoided. The book was made available to IAP member academies during its Conference and General Assembly held in Hermanus, South Africa, in March.

In August, Jo Husbands (US National Academy of Sciences), Zabta Shinwari (Pakistan Academy of Sciences), Ryszard Slomski (Polish Academy of Sciences) and Peter McGrath (IAP Coordinator) attended the Preparatory Committee for the 8<sup>th</sup> Review Conference of the Biological and Toxin Weapons Convention (BWC) in Geneva, Switzerland. In addition to presenting a statement to the plenary session on behalf of IAP, the representatives also participated in a side event, 'Supporting Effective BWC Implementation: Education, Outreach and Policy Advice', hosted by Ukraine.



Meeting of the Preparatory Committee for the 8<sup>th</sup> Review Conference of the Biological and Toxin Weapons Convention, Geneva, Switzerland.



Breakout discussions at the OPCW-ASSAf-TWAS-IAP workshop on 'Policy and Diplomacy for Scientists: Introduction to Responsible Research Practices in Chemical and Biological Sciences', Pretoria, South Africa.

In June, US NAS, in collaboration with IAP and the Hassan II Academy of Science and Technology, Morocco, organized an outreach and dissemination workshop in Rabat, Morocco, to present IAP and other organization's material on responsible research, biosecurity and related issues that had been translated into Arabic. Participants were invited from around the Middle East North Africa (MENA) region. Among the documents presented in Arabic was IAP's new 'Doing Global Science' book.

With funds from the European Union, the BWC ran a series of regional workshops for policymakers. Two of these were attended by IAP representatives: Krishan Lal (India)

attended an international workshop on 'The 8<sup>th</sup> BWC Review Conference: Promoting BWC Implementation, Enhancing Global Biosecurity Governance' in Wuxi, China, on 5-7 September 2016; while Sergio Pastrana (Cuba) attended a similar regional event in Brazil shortly after.

IAP has also been approached by the Organization for the Prohibition of Chemical Weapons (OPCW) to collaborate on a series of regional workshops to promote the work of the OPCW, especially the use of chemistry for peaceful purposes. The first workshop in this series took place in Pretoria, South Africa, hosted by the Academy of Sciences of South Africa (ASSAf) on 18-20 October 2016 and was attended by 30 young African scientists from 16 countries, several of them nominated via their national academies. Because of the links between science practice and policy, the event - titled 'Policy and Diplomacy for Scientists – Introduction to responsible research practices in chemical and biological sciences' - was also held under the auspices of the TWAS Science Diplomacy programme. P. McGrath attended on behalf of IAP.

Tracey Elliot, project manager for the two Carnegie-funded IAP projects, also attended the BWC 8<sup>th</sup> Review Conference in Geneva in November 2016. She participated in a side event, 'Science Advice and the BWC: Initiatives from the InterAcademy Partnership and Its Members' held on 15 November. As BWC policymakers and scientists thought about a more formal, systemic mechanism for science advice, they were keen to learn from other processes, such as the Sustainable Development Goals (SDGs). In the side event (also attended by US NAS and Royal Society, UK, representatives), Elliot highlighted IAP's new project on the SDGs, IAP's BWC science and technology trends analysis (including a report published earlier in 2016: 'The Biological



Participants and speakers at the OPCW-ASSAf-TWAS-IAP workshop on 'Policy and Diplomacy for Scientists: Introduction to Responsible Research Practices in Chemical and Biological Sciences', Pretoria, South Africa.

and Toxin Weapons Convention: Implications of advances in science and technology'), as well as ongoing inter-academy initiatives on genome editing. Attended by more than 20 policymakers and scientists, the side event served to demonstrate the long-running contribution that IAP has made to a highly sensitive and politicised agenda, and the potential for sharing good practice in other policy areas. With the BWC agenda reflected in several of the SDGs, there is now likely to be some synergy between two major IAP workstreams.

Finally, while rapid advances in the life sciences have profound implications for the future of the BWC, the 8<sup>th</sup> Review Conference ended without taking any significant steps forward to enhance the treaty's effectiveness. For example, the proposal to create a regular science mechanism to advise states parties and to assist in monitoring and assessing relevant developments in science and technology was not acted upon. This creates an opportunity for IAP and its member academies that will be followed up with the BWC during 2017.



IAP coordinator, Peter McGrath, presents the statement of the IAP Biosecurity Working Group to the meeting of the Preparatory Committee for the 8th Review Conference of the Biological and Toxin Weapons Convention, Geneva, Switzerland.



Question and answer session at the OPCW-ASSAf-TWAS-IAP workshop on 'Policy and Diplomacy for Scientists: Introduction to Responsible Research Practices in Chemical and Biological Sciences', Pretoria, South Africa.

# Disaster Risk Reduction

**IAP engaged with the Scientific and Technical Advisory Group (STAG) of the United Nations Office for Disaster Risk Reduction (UNISDR) that fed into the Sendai Framework for Disaster Risk Reduction 2015-2030. The Framework was adopted at the Third UN World Conference on Disaster Risk Reduction in Sendai, Japan, on 18 March 2015.**



President of the *Accademia Nazionale dei Lincei*, Alberto Quadrio-Curzio, and IAP for Science co-chair, Volker ter Meulen, at the signing of the 'Charter of Rome on the Resilience of Art Cities to Natural Catastrophes', Rome, Italy.

Since then, IAP has continued to engage with the Sendai process, which sees an increased need for the input of science and technology to reduce losses caused by natural disasters when compared to the requirements of previous international agreement, the Hyogo Framework for Action 2005-2015.

In 2016, IAP was a co-organizer of the UNISDR Science and Technology Conference on the implementation of the Sendai Framework held in Geneva, Switzerland, on 27-29 January. The meeting, which brought together more than 700 researchers, policy makers, practitioners and other stakeholders, aimed at developing a roadmap on how best science and technology can help achieve the implementation of the Sendai Framework.

IAP was represented at the meeting by R.B. Singh from India, who has been appointed by IAP to link with the UNISDR science process, and Antonio Sgamellotti from the *Accademia Nazionale dei Lincei*, Italy, along with IAP Coordinator, Peter McGrath. In addition, IAP supported the participation of two young scientists, Romana Siddiqi, nominated by the Bangladesh Academy of Sciences, and Abdelsalam Badre from Morocco, nominated by the Global Young Academy (GYA).

Among the outcomes of the conference were the UNISDR Science and Technology Roadmap and the formalization of the Scientific and Technical Partnership, to which IAP has since signed up as a member.

Such issues were further discussed during the IAP Conference on 'Science Advice' in Hermanus, South Africa (28 February - 1 March 2016), when Virginia Murray, vice-chair of the UN International Strategy for Disaster Reduction (ISDR) Scientific and Technical Advisory Group participated in the session on 'Science Advice in Times of Disasters/Emergencies'.

On 11-13 October 2016, the *Accademia Nazionale dei Lincei* hosted the 'International Conference – Florence 1966-2016 – Resilience of Art Cities to Natural Catastrophes: The Role of Academies' at its headquarters in Rome, Italy. The meeting, which brought together some 50 experts from around the world, commemorated the 50th anniversary of the Florence flood, when the River Arno burst its banks and inundated much of Florence and its irreplaceable art treasures. Participants discussed the scientific, technological and political developments over the intervening years that can help to protect cultural heritage and 'Art Cities' such as Florence from natural disasters.



R.B. Singh (India, left), IAP representative for disaster risk reduction, with a young scientist at the UNISDR Science and Technology Conference on the implementation of the Sendai Framework, Geneva, Switzerland.

In her presentation, Virginia Murray noted that safeguarding cultural heritage has been included in the Sendai Framework. Academies of science, and especially the *Lincei*, she said, played a particularly important role in inserting the concept of protecting cultural heritage into the Framework.

IAP was represented by co-chair Volker ter Meulen, who noted that all the presentations demonstrated the importance of science getting involved to help reduce the risk of damage from natural disasters and protecting cultural heritage. Furthermore, he noted that science can provide hope that things can be improved, but that this will not happen unless scientists – including through the academy networks – engage with policy-makers.

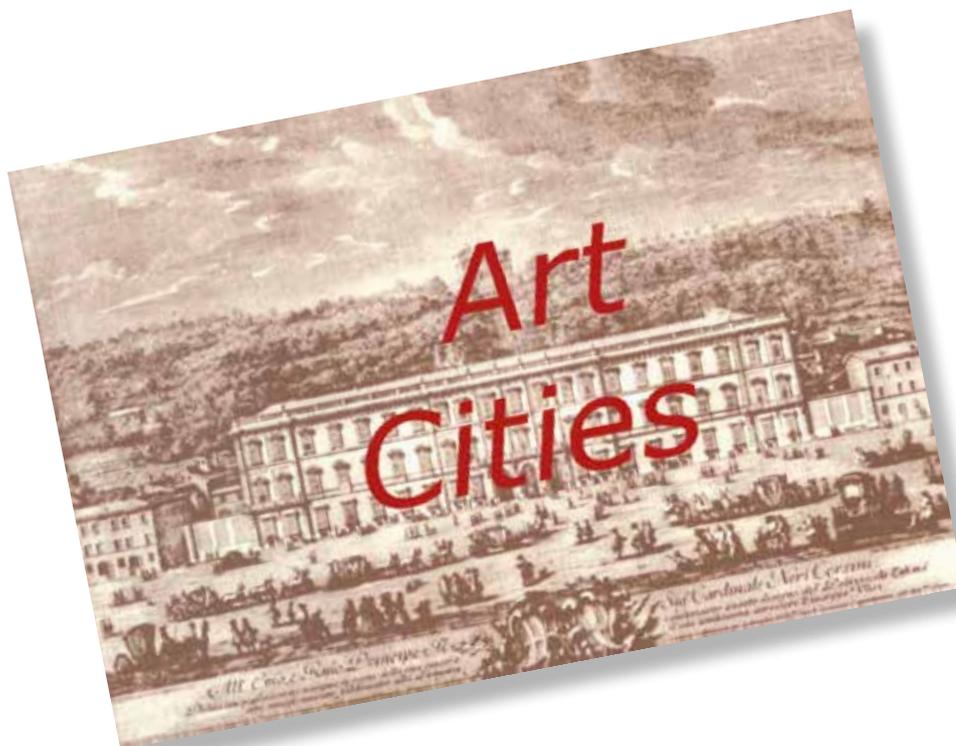
Ter Meulen, representing IAP, and Alberto Quadrio Curzio, president of the *Accademia Nazionale dei Lincei*, ended the meeting by signing the 'Charter of Rome on the Resilience of Art Cities to Natural Catastrophes'.

The Charter points out that cultural heritage and 'art cities' such as Florence need to have a special status when developing plans for reducing the impacts of natural disasters, and it aims to inform politicians of their responsibilities in this regard. It also notes that academies must take on activities such as educating the public and raising awareness, promoting additional research and providing a forum for discussing research results, as well as providing advice to policy-makers based on these results in a way that avoids conflicts of interest.

The Charter of Rome was since presented to the Government of Italy – especially as Italy will host the 2017 meeting of the G7 countries. On this occasion, the G7 academies will also present a statement on disaster risk reduction and cultural heritage that will feed into the high-level political discussions of the G7 Summit.



Antonio Sgamellotti (Italy, left) with Peter McGrath (IAP coordinator, right) presenting IAP's track record in disaster risk reduction activities at the UNISDR Science and Technology Conference on the implementation of the Sendai Framework, Geneva, Switzerland.



# Regional activities >

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# Association of Academies and Societies of Sciences in Asia (AASSA)



**The Association of Academies and Societies of Science in Asia (AASSA), with the support and leadership of IAP, has been actively working to enhance collaboration and cooperation among academies, societies and scientists in Asia and Australasia.**

In 2016, the Association of Academies and Societies of Sciences in Asia (AASSA) continued to serve as “a forum for scientists and technologists to discuss and provide advice on issues related to science and technology, research and development, and the application of technology for socio-economic development.” AASSA organized four workshops and an international symposium that covered a wide range of topics pertinent to the development of the Asia-Pacific, such as water security, natural products, green development, sustainable development, and refugees and migrants. The themes of all AASSA activities are closely related to the Sustainable Development Goals (SDGs) of the United Nations’ Agenda 2030. The details of the IAP supported AASSA workshops are as follows.

## The water-food nexus



Question and answer session at the AASSA-Nepal Academy of Science and Technology workshop on ‘Economic Prosperity through Research and Development in Natural Products’, Kathmandu, Nepal.

The AASSA-Pakistan Academy of Sciences (PAS) Workshop on ‘Challenges in Water Security to Meet the Growing Food Requirement’ was hosted by PAS at its headquarters in Islamabad, Pakistan, on 19-21 January 2016 – the first ever AASSA-sponsored activity in Pakistan.

In total, 17 lectures were presented by experts from Pakistan as well as Malaysia, Nepal, South Korea and Turkey. In addition to the speakers, participants included water and/or agriculture experts, university faculty members, researchers, postgraduate students, heads of scientific organizations, policy-makers, including two Pakistani Government ministers, and other stakeholders.

Water availability is a key determinant for crop productivity and food security, and agriculture is a major user of water, requiring large quantities for irrigation and other production

processes. The current trend of water use, however, is not sustainable in the face of rapidly-increasing populations, especially in the developing countries of Asia and the challenges posed by ongoing climate change. This fast changing scenario calls for ensuring the use of a finite water resource in an efficient and sustainable manner. The challenge is to provide and use more water in more efficient and sustainable ways.

During the concluding session of the workshop, which was chaired by Pakistan’s Federal Minister for Climate Change, Zahid Hamid, the chairs of three breakout discussion groups presented their recommendations regarding: (i) the impact of climate change on agriculture; (ii) water security for sustainable food production; and (iii) strategies and policies pertaining to food security. These recommendations were subsequently delivered to the Government of Pakistan.

## Natural products

The AASSA-Nepal Academy of Science and Technology (NAST) Workshop on ‘Economic Prosperity through Research and Development in Natural Products’ was held in Kathmandu, Nepal, on 29-31 March 2016, in conjunction with the ‘7<sup>th</sup> National Conference on Science and Technology’ of NAST.

Participants came from across the Asia region: Armenia, Bangladesh, China, Georgia, Germany, India, Japan, Malaysia, Nepal, Philippines, Russia, South Korea, Sri Lanka, Thailand and Turkey.

The workshop highlighted the ongoing research and development into natural products, which are of particular relevance to the economies of many Asian countries. Nepal,



Poster session at the AASSA-National Academy of Science and Technology, the Philippines, workshop on ‘The Role of Science Academies in Sustainable Development’, Tagaytay City, the Philippines.



Participants at the AASSA-Mongolian Academy of Sciences workshop on 'The Role of Sciences in Green Development', Ulaanbaatar, Mongolia.

in particular, is replete with natural product resources thanks to its diverse terrain, which ranges from the lowland Terai region to the mountains of the Himalayas. Recognizing the importance of biodiversity and its potential value in economic transformation through the sustainable harvesting of natural products, workshop participants developed a series of ten recommendations.

The opening and closing session of the AASSA workshop were held concurrently with those of the '7<sup>th</sup> National Conference of Science and Technology', which was attended by the Nepalese Prime Minister and Minister of Science Technology.

### Green development

The AASSA-Mongolian Academy of Sciences (MAS) Workshop on 'The Role of Sciences in the Green Development' was held at the Ministry of Foreign Affairs, Ulaanbaatar, Mongolia, on 7-8 September 2016. The workshop was organized by MAS and AASSA with support from IAP and the Ministry of Environment and Tourism of Mongolia.

Alongside speakers and participants from Mongolia were others from Iran, Nepal, Russia, South Korea and Turkey. The aim of the workshop was to summarise the current situation, as well as share best experiences and challenges in green development sciences and studies. In addition, participants developed a set of recommendations and future directions for research into green development. Workshop speakers, for example, suggested using multi-disciplinary and interdisciplinary research approaches.

### Academies and sustainable development

The National Academy of Science and Technology, Philippines (NAST PHL) and AASSA jointly organized the AASSA-NAST PHL Workshop on 'The Role of Science Academies in Sustainable Development', in conjunction with the 2016 'Climate Conference on Addressing Climate Risk for Sustainable Development', held on 28-29 September 2016 in Tagaytay City, the Philippines. The event was supported by

IAP and the Department of Science and Technology (DOST), Philippines.

The aims of the workshop-conference were to;

- promote sharing of experiences of the science academies in sustainable development;
- identify a priority research and development agenda; and
- discuss the policy implications of research outputs.



Yoo Hang Kim, president of AASSA.

The workshop-conference was attended by 200 participants, including 15 foreign delegates, nine Filipino academicians and national scientists, and 193 other local participants from such organizations as universities, government offices, non-governmental organizations and the media.

A 10-point series of resolutions, produced as a major output of the workshop-conference, was presented to Fortunato T. De La Peña, secretary of the Department of Science and Technology, and to Emmanuel M. de Guzman, secretary of the Climate Change Commission. Both these high-level Philippine representatives delivered their responses to the resolutions.



Speakers at the AASSA international symposium on 'Refugees and Migrants: A global problem or an asset', Ankara, Turkey.

## Refugees and migrants

An AASSA International Symposium on 'Refugees and Migrants: A global problem or an asset' was held in conjunction with the 3<sup>rd</sup> General Assembly of AASSA in Ankara, Turkey, on 20-23 October 2016. The event was jointly organized by AASSA and the Turkish Academy of Sciences (TÜBA), with financial support from IAP.

The recent conflicts in the Middle East and other regions of the world have led to an enormous increase in the number of refugees, asylum seekers, displaced persons and migrants. According to the United Nations Population Fund (UNFPA), the number of international migrants worldwide reached 244 million in 2015. Turkey has become world's largest refugee-hosting country with over 3 million refugees of Syrian and

Iraqi origin, and has spent about USD 9 billion on assisting refugees.

Such figures clearly show that refugees and migrants pose a global problem. However, migration (whether voluntary or involuntary) is an age-old phenomenon, and has different aspects and takes place at different levels. During the symposium, causes of migration such as cultural, economic, political, climatic and scientific were discussed, as were local, national, regional and global aspects.

Despite the negative impression often reflected in the media, migration and migrants can be regarded as an asset for humanity, symposium participants concluded. Among their contributions, many migrant workers send home valuable remittances, while a number of migrant scientists have made significant contributions to advancing knowledge and society. .

Some 50 participants, mostly from AASSA member academies, including 12 speakers from outside Turkey, took part in the symposium. Towards the end of the symposium deliberations of two breakout groups that discussed 'Issues and problems of the migrants and refugees' and 'Issues and problems of the migration in human history and society' were presented as recommendations.

AASSA held its General Assembly concurrently with the meeting in Ankara, making some amendments to its Constitution and electing a new board of directors, including a new president, Yoo Hang Kim of South Korea.

For additional information on AASSA, please visit: [www.aassa.asia](http://www.aassa.asia)



Meeting of the AASSA regional working group on the IAP Food and Nutrition Security and Agriculture (FNSA) project.

## European Academies' Science Advisory Council (EASAC)



**The European Academies' Science Advisory Council (EASAC), founded in 2001, currently includes one representative national science academy from each of the 25 EU member states, the Academia Europaea, the European Federation of Academies of Sciences and Humanities (ALLEA, which provides a complementary Europe-wide perspective), as well as representatives of the Norwegian and Swiss national academies of sciences. Its secretariat is hosted by the German National Academy of Sciences, Leopoldina. Through collaboration, EASAC is able to provide a collective voice of European science and provide independent advice to European policy-makers.**

In 2016, EASAC brought a number of projects to fruition. Apart from several publications containing scientific analysis and recommendations to European policy-makers and articles in scientific journals, EASAC celebrated its 15<sup>th</sup> anniversary with a 'Science-Into-Policy-Summit' and contributed to the formation of the new 'Scientific Advice Mechanism' of the European Union's Commission.

In January 2016, EASAC concluded a two-year collaboration with the Joint Research Centre of the European Commission (JRC) on the issue of 'Marine sustainability in an age of changing oceans and seas'. The findings of this report were presented in a number of EU Member States, including Portugal and Croatia. In April, EASAC published its statement, 'Greenhouse gas footprints of different oil feedstocks',

which gave science-based recommendations to EU policy-makers for the specific problem of evaluating the carbon footprint of oil sands. Then, in July, EASAC partnered with the Federation of European Academies of Medicine (FEAM) to issue a joint statement on 'Antimicrobial Resistance', which was produced in response to the report by the O'Neill Commission, 'Tackling Drug-Resistant Infections Globally', that was commissioned in 2014 by the UK Prime Minister. In November, EASAC presented two related reports on the topic of the circular economy: 'Indicators for a Circular Economy', which responded to some pressing needs of the EU's institutions with regard to the quantification of progress towards a circular economy, and 'Critical materials for a Circular Economy', which highlighted some of the core challenges and opportunities of the circular economy approach for Europe.



EASAC celebrated its 15th anniversary with a 'Science-into-Policy-Summit' in Oslo, Norway.



EASAC reports published during 2016.

In line with its strategic resolve to spend more time on follow-up to its reports, which are all endorsed by its member academies, EASAC did extensive work on the communication of its 2015 'Gain of Function' report, which received a lot of attention and considerable media coverage during 2016. The report was presented by Volker ter Meulen, IAP for Science co-chair and chair of the EASAC Gain of Function working group, at a symposium organised by the US National Academies of Sciences, Engineering and Medicine in Washington DC in March 2016. There, the EASAC report was considered to be particularly helpful in emphasising the international aspects of deliberations and in showing how multiple academies and countries can work together to clarify principles, share good practices, and inform public policy development. Apart from that, the *Journal of Virology*, the *International Innovation* journal and the French newspaper *Le Monde* each featured an article about the report during the year.

In May 2016, EASAC celebrated its 15<sup>th</sup> anniversary by staging a 'Science-Into-Policy-Summit' in Oslo, Norway. For this, the six-monthly meeting of the EASAC Council was extended to include also the first EASAC Joint Steering Panels Day, featuring expert reflection on energy, the environment and biosciences. The events were hosted by the Norwegian Academy of Sciences and Letters (DNVA), which was able to secure the Norwegian Nobel Prize Laureate, Edvard Moser, as the keynote speaker. Moser's lecture



Launch of the EASAC-JRC report on 'Marine Sustainability in an age of Changing Oceans and Seas'.

focused on his research into the spatial orientation of vertebrates through highly specialised nerve cells in the hippocampus. In addition, William J. Sutherland from the University of Cambridge, UK, spoke about the incorporation of scientific findings into political decision-making. The Norwegian Minister of Education and Research, Torbjørn Røe Isaksen, presented the Norwegian view on European scientific collaborations.

The EASAC anniversary event was an opportunity to present recent EASAC statements to a wider public and to illustrate their role in policy advice. Reports from 2015 on the impact of neonicotinoid-based insecticides and on gain of function in virology, as well as statement on marine sustainability and the preliminary findings of an EASAC study on 'Electricity Storage' were presented to participants. On another note, Peter Collins, former director of the Royal Society, head of the EASAC secretariat at the Royal Society (2001-2007) and one of the 'founding fathers' of EASAC gave a lecture on the foundation and history of the organisation. A special anniversary booklet that documents EASAC's achievements and developments over the past 15 years was published to mark the occasion.

During 2016, EASAC also engaged in the formation of a project consortium, Scientific Advice for Policy by European Academies, or SAPEA, which is made possible by funding from the European Commission. In this project, five European academy organisations have joined forces to improve policy



Thierry Courvoisier, president of EASAC, speaking at an EASAC board meeting.

advice within the European Commission: EASAC, FEAM, the *Academia Europaea*, the European Federation of Academies of Sciences and Humanities (ALLEA) and the European Council of Applied Sciences Technologies and Engineering (Euro-CASE). The core objectives of the SAPEA consortium collaboration are twofold. First, to provide independent science-based policy advice to the European Commission and the European public within the context of the recently created Scientific Advice Mechanism (SAM) of the European Commission. Second, to strengthen cooperation and to foster synergies between the European academy networks and their 100 member academies, as well as to enhance and strengthen the already existing structures. Through the five networks, the SAPEA project has access to thousands of academy fellows from the social, human, natural, engineering and medical sciences across Europe.

For additional information on EASAC, please visit: [www.easac.eu](http://www.easac.eu)

## Inter-American Network of Academies of Science (IANAS)



**IANAS is a network of 21 academies of science and three scientific organizations with the mission to strengthen science communities in the Americas through capacity building and to provide an independent source of science policy advice to governments and the public on key challenges or programmes for the future of the region.**



Representatives of academies of the Americas at a IANAS meeting, Rio de Janeiro, Brazil.

Within the context capacity building, in September 2016 IANAS supported the *Comunidad Científica del Caribe* (Caribbean Scientific Union) General Assembly, a meeting co-sponsored by the Regional Office for Latin America and the Caribbean on the International Council for Science (ICSU-ROLAC). Several members of the IANAS executive also met with scholars in San Salvador, one of the few countries in the region without an academy of sciences, to discuss different steps required when establishing a national academy there. An additional meeting with the El Salvador's Minister of Science confirmed that she was favourable to this initiative.

There were a number of activities that served to strengthen links between the member academies of IANAS during 2016. For example, the IANAS executive committee met on 1-2 February 2016 in Merida, hosted by the Mexican Academy of Sciences. Similarly, the IANAS General Assembly was hosted by the Brazilian Academy of Sciences in Rio de Janeiro on 7 May 2016. This meeting was held in conjunction with the Brazilian Academy of Sciences centennial celebrations, which were attended by the IAP for Science co-chairs as well as the IANAS executive committee.

IANAS presented a summary of the Network's activities at the IAP General Assembly that was held on 2 March in Hermanus, South Africa. Of specific importance was the inclusion of the IANAS 'Survey of Women in the Academies of the Americas' in the report of the 'Women for Science: Inclusion and Participation in Academies of Sciences', that

was released by IAP and the Academy of Science of South Africa (ASSAf) at the meeting.

Furthermore, a number of different academies hosted IANAS working groups addressing Water, Energy, Food and Nutrition Security, Women for Sciences and Science Education. These activities also received financial support from IAP.

The activities of each of the five thematic working groups are carried by prominent scientists/experts who were appointed by their respective academies. Each group has an annual face-to-face meeting, with the support of IANAS member academies and IAP. The 2016 achievements of the working groups are highlighted below.

### Water

The Water Programme working group developed the final plan for a major publication, 'Water Quality in the Americas', at their last annual meeting that was held in Medellin, Colombia, in November. This book will cover issues including: (i) institutional authority and governance of water quality; (ii) direct and indirect effects of both natural and anthropogenic chemicals on water quality; (iii) social and economic perspectives; and (iv) water quality and the development goals. In addition, there will be a chapter addressing 'Gender, energy and water', using a similar approach to that taken in the Energy Programmes' publication, 'Guide Towards a Sustainable Energy Future for the Americas'. It is anticipated that this new book will be published in 2018.

## Energy

The IANAS Energy Programme released its book, 'Guide Towards a Sustainable Energy Future for the Americas', on 7 May 2016. The book addresses key challenges such as renewable energy sources in the region and the role of gender in questions relating to energy, as well as the challenges of building the institutional capabilities necessary to advance national energy economies. Each chapter includes country-specific boxes that provide national/regional perspectives of energy issues. The book is available in Spanish and English.

One of the key challenges highlighted in the book is that many millions of people worldwide, generally living in rural areas, presently do not have access to electricity. Consequently, on 16-18 November the energy group organised a workshop in collaboration with the Smart Villages initiative (*e4sv.org*) to address the question of alternative energy sources for underserved populations. This meeting was hosted by the Academy of Sciences of the Dominican Republic, and the outcome of this workshop will guide some of the 2017 actions of the IANAS Energy Programme.

## Women for Science

The Women for Science (WfS) working group was hosted by the Academy of Physical, Mathematical and Natural Sciences of Venezuela on 25-29 September in Caracas. At the meeting, they established their core activities for the coming year. These include the development of a portal for mentoring young women scientists of the Americas and, with the help of academies, will profile young women scientists who have established businesses based on their research findings on the IANAS website. The WfS will also implement a simplified version of the previous 'Survey of Women in the Academies of the Americas' to assess if there have been any significant changes in the past couple of years.

## Science Education

The meeting of the focal points of the Science Education Programme was held in the Dominican Republic on 9-10 October with support from the Academy of Sciences of the Dominican Republic, the Minister of Education and the *Pontificia Universidad Madre y Maestra*. A major point of discussion related to finalising the publication that

examines the efficacy of various methodologies that have been used over the last 10 years for science education, including inquiry-based science education (IBSE) and STEM (science, technology, engineering and mathematics) education, in the different countries of the Americas. The final publication will be presented at the next focal point meeting



IAP for Science Executive Committee member, Jeremy McNeil (Canada, right) at a meeting of the IANAS regional working group on the IAP Food and Nutrition Security and Agriculture (FNSA) project, Mexico City, Mexico.

to be held in Cordoba, Argentina, in November 2017. When in the Dominican Republic, the focal points from the different academies met with approximately 200 local primary and secondary school teachers, where they discussed the best practices to engage students with science.

## Food and Nutrition Security and Agriculture

At the IAP General Assembly in Hermanus, members of the IANAS Food and Nutrition Security and Agriculture (FNSA) working group met with their counterparts from the other three regional networks to discuss the approaches being taken by each group. Subsequently, there was a meeting in Mexico City on 17-20 September where representatives of the different IANAS academies met to finalise the general plan to be taken when preparing the chapters from each country. More details about the project may be found on pages 21-22.

## Funding

IANAS has two main sources of funding to support their activities. IAP and the contributions of the member academies to cover local costs of the different activities. In 2016, the contributions from each source was about USD105,000.

For additional information on IANAS, please visit: [www.ianas.org](http://www.ianas.org)



## Network of African Science Academies (NASAC)



The Network of African Science Academies (NASAC) is a consortium of 24 merit-based science academies in Africa and aspires to make the voice of science heard by policy and decision makers in the continent and worldwide. NASAC is dedicated to enhancing the capacity of existing national science academies and facilitates the creation of new academies in countries where none exist.



Members of the NASAC Women for Science working group, Nairobi, Kenya.

### Youth employment

NASAC kicked off its year of activities with a major conference on 'Youth employment: The necessary co-construction of teaching-training programmes and enterprises', held in Dakar, Senegal, on 22-24 February.

The conference, which attracted more than 250 participants from Africa, Europe and Asia, was billed as the 1<sup>st</sup> African Forum on Sciences and Technologies for Development (FastDev) and organized in collaboration with the *Groupe intercadémique pour le Développement* (GID), as well as the Senegal Academy of Science and Technology (ANSTS) and the Hassan II Academy of Science and Technology, Morocco. Additional financial support was received from the Ministry of Higher Education and Research of Senegal and the *Académie des Sciences*, France.

The conference presented an opportunity to analyse the real needs in training and job creation in Africa, and further aimed to improve employability of young people and encourage more favorable conditions for business development. Among the dignitaries in attendance were Ibrahima Gueye, the secretary general representing Senegal's Minister of Higher

Education and Research, Mostapha Bousmina (president of NASAC), Ahmadou Lamine Ndiaye (ANSTS), François Guinot (GID), and Jean Félix-Paganon, France's ambassador to Senegal.

### Agricultural biotechnology

NASAC released the booklet, 'Harnessing Modern Agricultural Biotechnology for Africa's Economic Development: Recommendations to Policymakers', in August 2015. On 21-22 April 2016, a communication event to promote the recommendations of the report was held in Addis Ababa, Ethiopia. The meeting brought together biotechnology experts from various African countries, plus representatives from NASAC member academies and the United Nations Economic Commission for Africa (UNECA). As well as communicating the key messages of the booklet, participants at the event discussed how to establish and foster relationships that will influence agricultural biotechnology policy in Africa and made recommendations on how to engage with policymakers to increase their awareness of the topic.

## Moroccan anniversary

The tenth anniversary celebrations of the Hassan II Academy of Science and Technology were marked by a conference on the theme 'South-South Collaboration and Partnership'. The conference, held from 16-18 May 2016, provided a basis for debate and discussion on the pros and cons of South-South collaboration in science. The meeting provided an excellent opportunity to take stock of the progress 'for' science, progress 'by' science and progress 'in' science. While brain drain was highlighted as the main 'con' for South-South cooperation, participants emphasized the 'pros' for Africa. The event concluded that South-South collaboration and partnership is critical for economic, political and social development in the global South. The Moroccan academy is a strong supporter of intra-African cooperation in science, technology and innovation, and being a member of NASAC fosters that objective. Assisting with the anniversary celebrations, NASAC was represented by scientists from 19 member African countries.

## Women for Science

Women scientists representing academies from 19 African countries met in Nairobi, Kenya, on 4-5 August 2016, where the main objective was to reactivate NASAC's Women for Science Working Group, which had been inactive since 2011. Participants at the meeting also discussed the IAP-supported project to develop a book that will highlight many of the inspiring stories of women scientists in Africa. The volume has since been drafted and awaits final reviews before publication. It will also be translated into French.

## Transdisciplinary research

Together with the International Council for Science (ICSU) and the International Social Sciences Council (ISSC), NASAC is implementing a new programme, 'Leading

Integrated Research for Agenda 2030 in Africa' (LIRA 2030). The programme, which runs from 2016 to 2020, seeks to increase the production of high quality, integrated (inter- and transdisciplinary), solutions-oriented research on global sustainability by early career scientists in Africa.

A call for pre-proposals on 'Understanding the Energy-Health-Natural Disasters nexus in the urban context in Africa' resulted in 35 early career researchers being selected to attend a training workshop on transdisciplinary research. The event, which took place on 3-7 October 2016 in Nairobi, Kenya, brought together young scientists from different research fields who received training on the theories and methods of transdisciplinary research. Subsequently, the researchers submitted full proposals which underwent technical reviews, and nine of the 35 were awarded funding to support their research during 2017.

## Climate change

The Paris Agreement on climate change, signed by most of the world's governments in November 2015, was a landmark for international unity. Just a few months later, NASAC launched its second policy booklet of 2016: 'Climate Change Adaptation and Resilience in Africa: Recommendations to Policymakers'. The launch event, hosted by the Mauritius Academy of Science and Technology, was held on 4-5 July 2016 in Ebene, Mauritius.

Jacqueline McGlade, chief scientist of United Nations Environment Programme (UNEP), delivered the keynote address, while more than 60 participants from countries, including Botswana, Kenya, Malawi, Mauritius, Mozambique, Nigeria, South Africa, Zambia and Zimbabwe examined and discussed the key messages of the report.

Financial support for the event was provided by IAP, while additional funding was leveraged from the German Federal Ministry of Education and Research (BMBF) thanks to the



Participants at the 'FastDev Forum, Dakar, Senegal.



Representatives of African academies at the 12th AMASA conference, Johannesburg, South Africa.

German National Academy of Sciences, Leopoldina. The Academy of Science of South Africa (ASSAf) and Gender in Science, Innovation, Technology and Engineering (GenderInSITE) also partnered with NASAC to host a session on 'Applying a gender lens to climate change adaptation and resilience'.

A year after the signing of the Paris Agreement, the 22<sup>nd</sup> Conference of the Parties (COP22) to the United Nations Framework Convention on Climate Change (UNFCCC) convened in Marrakech, Morocco, on 7-18 November 2016. The meeting was hosted by the Hassan II Academy of Science and Technology, Morocco, together with Moroccan government authorities.

A NASAC delegation enabled academies to contribute to building strategies that reinforce the capacities of African countries for adaptation and resilience to the impact of climate change. At a side-event organized by the Moroccan academy on 13-15 November, it was recommended that NASAC should continue to engage with the COP processes and offer leadership in science-policy dialogue for climate change adaptation and resilience in Africa.

NASAC, through the Hassan II Academy of Science and Technology, also submitted a concept note to the UNFCCC, proposing the creation of a coordinated network of African observatories (research centres) to monitor climate change and its impact in Africa. Finally, a joint statement on 'Actions to tackle the issue of climate change and its impact' was developed and finalised during the meeting. This statement was signed by NASAC member academies, along with the rectors and presidents of more than 100 African universities, and presented to the office of the Minister of Foreign Affairs and Cooperation of the Kingdom of Morocco, who at that time was serving as the president of COP 22.

### African academies meeting

The theme of the 12<sup>th</sup> Annual Meeting of African Science Academies (AMASA-12), hosted by ASSAf in Johannesburg, South Africa, on 4-8 November, was 'Poverty Reduction'. Discussions revolved around poverty eradication – the first Sustainable Development Goal (SDG) – as this remains one of the greatest challenges facing humanity. Globally, more

than 800 million people lack access to adequate food, clean drinking water and sanitation.

The meeting brought together 150 experts representing 22 African science academies, and was also attended by the IAP for Research secretariat.

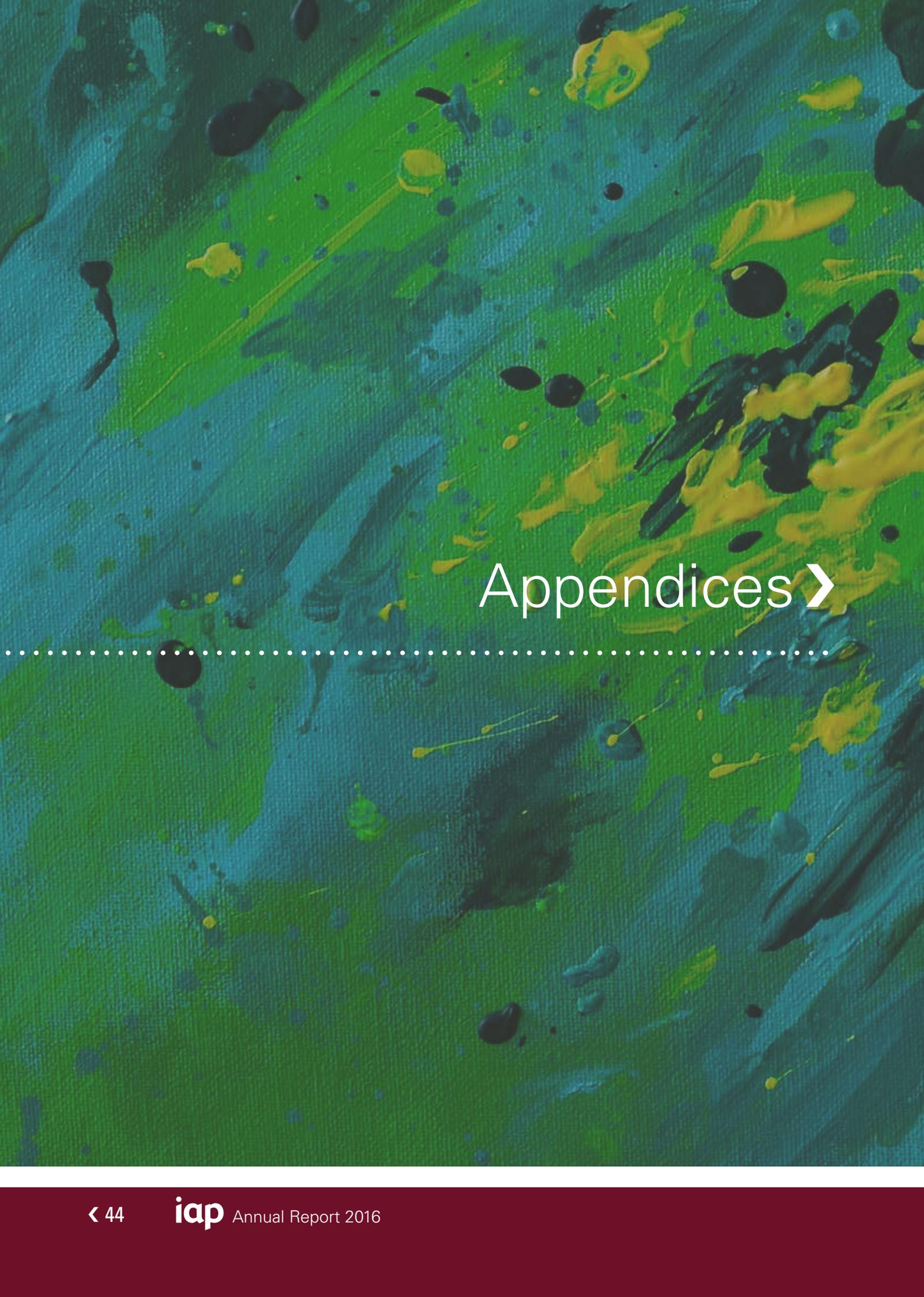
Participants concluded that although economic growth has contributed to the alleviation of poverty in countries such as China and India, progress has been slow in regions such as South Asia and sub-Saharan Africa. The latter accounts for 80% of people living in extreme poverty. Women are also more likely subject to poverty than men due to unequal access to paid work, education and property. The two-day scientific conference also looked at other threats facing Africa, including climate change, conflict and food insecurity.

South Africa's Department of Science and Technology (DST) provided both technical and financial support to the event, while ASSAf used the occasion to launch its report, 'Social Protection in Africa: An overview for policymakers'.



Presentation at the NASAC Women for Science working group meeting, Nairobi, Kenya.

For additional information, see: [www.nasaconline.org](http://www.nasaconline.org)



# Appendices >

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# Members of the InterAcademy Partnership

(as of December 2016)

1.	Afghanistan Academy of Sciences
2.	Albanian Academy of Sciences
3.	<i>Academia Nacional de Ciencias Exactas, Fisicas y Naturales de la Republica Argentina</i>
4.	<i>Academia Nacional de Medicina de Buenos Aires</i>
5.	National Academy of Sciences of Armenia
6.	Academy of Medical Sciences of Armenia
7.	Australian Academy of Science
8.	Austrian Academy of Sciences
9.	Bangladesh Academy of Sciences
10.	National Academy of Sciences of Belarus
11.	Royal Academies for Science and the Arts of Belgium
12.	Belgian Royal Academy of Medicine
13.	<i>Académie Royale de Medecine de Belgique</i>
14.	Benin National Academy of Sciences and Arts
15.	<i>Academia Nacional de Ciencias de Bolivia</i>
16.	<i>Academia Boliviana de Medicina</i>
17.	Academy of Sciences and Arts of Bosnia and Herzegovina
18.	Brazilian Academy of Sciences
19.	<i>Academia Nacional de Medicina, Brazil</i>
20.	Bulgarian Academy of Sciences
21.	National Academy of Sciences Burkina Faso
22.	Cameroon Academy of Sciences
23.	Royal Society of Canada
24.	Canadian Academy of Health Sciences
25.	<i>Academia Chilena de Ciencias</i>
26.	<i>Academia Chilena de Medicina</i>
27.	Chinese Academy of Sciences
28.	Chinese Academy of Engineering
29.	<i>Academia Sinica, Taiwan, China</i>
30.	Colombian Academy of Exact, Physical & Natural Sciences
31.	<i>Academia Nacional de Medicina de Colombia</i>
32.	Croatian Academy of Arts and Sciences
33.	Croatian Academy of Medical Sciences
34.	Cuban Academy of Sciences
35.	Czech Academy of Sciences

36.	Royal Danish Academy of Sciences and Letters
37.	<i>Academia de Ciencias de la Republica Dominicana</i>
38.	Academy of Sciences of Ecuador
39.	Academy of Scientific Research and Technology
40.	Estonian Academy of Sciences
41.	Ethiopian Academy of Sciences
42.	Council of Finnish Academies
43.	<i>Académie des Sciences, Institut de France</i>
44.	<i>Académie Nationale de Médecine, France</i>
45.	Académie des Technologies, France
46.	Georgian National Academy of Sciences
47.	Georgian Academy of Medical Sciences
48.	Union of German Academies of Sciences and Humanities
49.	German National Academy of Sciences, Leopoldina
50.	Ghana Academy of Arts and Sciences
51.	Academy of Athens, Greece
52.	<i>Academia de Ciencias Medicas, Fisicas y Naturales de Guatemala</i>
53.	National Academy of Sciences of Honduras
54.	Hungarian Academy of Sciences
55.	Indian National Science Academy
56.	National Academy of Medical Sciences, India
57.	Indonesian Academy of Sciences
58.	Academy of Sciences of the Islamic Republic of Iran
59.	Iranian Academy of Medical Sciences
60.	Royal Irish Academy
61.	Israel Academy of Sciences and Humanities
62.	<i>Accademia Nazionale dei Lincei, Italy</i>
63.	<i>Accademia Nazionale di Medicina, Italy</i>
64.	Science Council of Japan
65.	Royal Scientific Society of Jordan
66.	National Academy of Sciences of the Republic of Kazakhstan
67.	Kenya National Academy of Sciences
68.	Korean Academy of Science and Technology
69.	National Academy of Sciences, Republic of Korea
70.	Kosova Academy of Sciences and Arts

71.	National Academy of Sciences of the Kyrgyz Republic
72.	Latvian Academy of Sciences
73.	Lebanese Academy of Sciences
74.	Lithuanian Academy of Sciences
75.	Macedonian Academy of Sciences and Arts
76.	Madagascar's National Academy of Arts, Letters and Sciences
77.	Academy of Sciences Malaysia
78.	Mauritius Academy of Science and Technology
79.	Mexican Academy of Sciences
80.	National Academy of Medicine of Mexico
81.	Academy of Sciences of Moldova
82.	Mongolian Academy of Sciences
83.	Montenegrin Academy of Sciences and Arts
84.	Hassan II Academy of Science and Technology, Morocco
85.	Academy of Science of Mozambique
86.	Nepal Academy of Science and Technology
87.	Royal Netherlands Academy of Arts and Sciences
88.	Royal Society of New Zealand
89.	Nicaraguan Academy of Sciences
90.	Nigerian Academy of Science
91.	Norwegian Academy of Sciences and Letters
92.	Pakistan Academy of Sciences
93.	Palestine Academy for Science and Technology
94.	<i>Academia Nacional de Ciencias del Peru</i>
95.	National Academy of Science and Technology, Philippines
96.	Polish Academy of Sciences
97.	<i>Academia das Ciencias de Lisboa, Portugal</i>
98.	Romanian Academy
99.	Academy of Medical Sciences of Romania
100.	Russian Academy of Medical Sciences
101.	Russian Academy of Sciences
102.	<i>Académie des Sciences et Techniques du Sénégal</i>
103.	Serbian Academy of Sciences and Arts
104.	Singapore National Academy of Sciences
105.	Slovak Academy of Sciences

106.	Slovenian Academy of Sciences and Arts
107.	Academy of Science of South Africa
108.	<i>Real Academia de Ciencias Exactas, Fisicas y Naturales, Spain</i>
109.	National Academy of Sciences, Sri Lanka
110.	Sudanese National Academy of Sciences
111.	Royal Swedish Academy of Sciences
112.	Swiss Academies of Arts and Sciences
113.	Swiss Academy of Medical Sciences
114.	Academy of Sciences of the Republic of Tajikistan
115.	Tanzania Academy of Sciences
116.	Thai Academy of Science and Technology
117.	Turkish Academy of Sciences
118.	Uganda National Academy of Sciences
119.	Academy of Medical Sciences, UK
120.	National Academy of Sciences of Ukraine
121.	Royal Society , UK
122.	US National Academy of Sciences
123.	US National Academy of Medicine
124.	National Academy of Sciences of Uruguay
125.	Uzbekistan Academy of Sciences
126.	<i>Pontificia Academia Scientiarvm, Vatican</i>
127.	<i>Academia de Ciencias Fisicas, Matematicas y Naturales de Venezuela</i>
128.	<i>Academia Nacional de Medicina de Venezuela</i>
129.	Zimbabwe Academy of Sciences
130.	African Academy of Sciences
131.	Caribbean Academy of Sciences
132.	Islamic World Academy of Sciences
133.	Latin American Academy of Sciences
134.	TWAS, The World Academy of Sciences
135.	World Academy of Art and Science

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# IAP for Science IAP for Health Financial Summary, 2016

The total amount of funds received for activities in 2016 was USD 1,282,938. The main contribution was from the Italian Ministry of Foreign Affairs (USD 808,251). One-off contributions were received from the Alice and Knut Wallenberg Foundation and the Volkswagen Foundation in order to strengthen the capacity of the Secretariat in Trieste. Additional contributions were received from the Australian Academy of Science, the Israel Academy of Sciences and Humanities, the Turkish Academy of Sciences (TÜBA), and the Royal Society, UK as voluntary contributions to support IAP activities in 2016.

It should be noted that, due to staff movements, a significant saving was made on staff costs (Expenditure line 4.1). With the agreement of the co-chairs, these savings were re-directed to support new projects (Expenditure line 1.1).

In addition, it is estimated that member academies and regional affiliated networks contributed more than USD 1,000,000 by leveraging funds for activities from other donors, and through in-kind support for the organization and hosting of conferences and workshops, travel support for their representatives to IAP and other events, the publication of reports, as well as the provision of staff time.

In 2106, special mention should be made of the Academy of Science of South Africa and its sponsors for supporting the IAP Conference and General Assembly in Hermanus, South Africa, in February-March 2016; the Chinese Academy of Engineering and its sponsors for supporting the IAP for Health Conference and General Assembly in Beijing, China, in September; and the University of Chile, Santiago, Chile, and its sponsors, for hosting the IAP Science Education Programme's biennial conference in April.

IAP for Health itself leveraged additional funding for its activities from the UK Academy of Medical Sciences, the World Health Summit Foundation GmbH and the Bayer Science and Education Foundation.

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## IAP for Science Financial Report for 2016 (in USD)

INCOME <sup>1</sup>	2016
Balance brought forward 1.1.2016	237,886.31
1 Ministry of Foreign Affairs, Italy	808,251.76
2 Knut and Alice Wallenberg Foundation	212,314.00
3 Volkswagen Foundation	112,740.00
4 Royal Society, UK	50,000.00
5 Israel Academy of Sciences and Humanities	5,000.00
6 Turkish Academy of Sciences (TÜBA)	2,000.00
7 Australian Academy of Science	975.00
8 Interest	9,337.00
9 Transfer to IAMP (now IAP for Health)	(95,000.00)
10 Transfer to Reserve Fund	
	<b>1,282,938</b>

1 All contributions are expressed in US dollars and have been converted using the UN official rate of exchange in effect at the time the contributions were received.

EXPENDITURE	2016	
	Budget	Spent
<b>1) Scientific Projects</b>		
1.1) New Projects	63,000	195,900
1.2) Regional Network Programmes	380,000	398,000
1.3) Policy collaboration with IAC	40,000	70,000
1.4) Fundraising for new activities	50,000	
<i>Sub-Total for (1)</i>	533,000	613,127
<b>2) Meetings and Conferences</b>		
2.1) Conference for Young Scientists		
2.2) Executive Committee Meetings/GA Conference/Travels	77,000	40,691.20
<i>Sub-Total for (2)</i>	77,000	40,691.20
<b>3) Publications (Website/Brochure)</b>		
3.1) Website	10,000	1,592.36
3.2) Other publications	5,000	10,565.20
<i>Sub-Total for (3)</i>	15,000	12,157.56
<b>4) Operational Expenses</b>		
4.1) Staff and Consultant Costs	335,000	226,314.48
4.2) Communications	15,000	1,636.59
4.3) Office and Other Supplies	15,000	3,013.72
4.4) ICTP services	50,000	40,000
<i>Sub-Total for (4)</i>	415,000	270,964.79
<i>Total Expenditure</i>	1,040,000	917,713.55
Savings on prior years' obligations		81,648.94
<b>Excess (Shortfall) of income over expenditure</b>		<b>507,439.45</b>
<b>Reserve Fund<sup>1</sup></b>		
Amount available at the beginning of period		<b>201,839</b>
End of service entitlements		(74,537.66)
<b>Reserve Fund balance end of period</b>		<b>127,305.51</b>
<b>Reserve and Regular Fund balances, end of period</b>	<b>439,725</b>	<b>120,725</b>

1 The purpose of the Reserve Fund is to cover the end of service entitlements of IAP staff

# IAP for Research Financial Summary, 2016

The total amount of funds received by IAP for Research in 2016 was EUR 438,052. Secretariat income was EUR 127,273 and project income was EUR 310,779. Most of the secretariat income came from contributions by the Royal Netherlands Academy of Arts and Sciences (KNAW) and the US National Academy of Sciences. Most of the project income came from Carnegie Corporation of New York through the Institute for Advanced Study to support the projects *Improving Scientific Input to Global Policymaking: Strategies for Attaining the Sustainable Development Goals*, and *Harnessing Science, Engineering, and Medicine to Address Africa's Challenges* (see pages 20-21). Project income also came from IAP for Science to support dissemination of the publication *Doing Global Science: A Guide to Responsible Conduct in the Global Research Enterprise*.

## IAP for Research Financial Report for 2016 (in Euro)

INCOME	SECRETARIAT	PROJECTS	TOTAL
KNAW Contribution	63,750	0	63,750
US NAS Contribution	45,066	0	45,066
Projects and administration	15,909	310,779	326,687
Book royalties	2,549	0	2,549
	<b>127,273</b>	<b>310,779</b>	<b>438,052</b>

EXPENDITURES	SECRETARIAT	PROJECTS	TOTAL
Personnel	63,750	0	63,750
Staff salaries	0	117,526	117,526
Consultants	0	36,223	36,223
Travel	2,178	117,401	119,580
Website and public information	17,733	19,786	37,519
Legal expenses	4,731	0	4,731
Printing and dissemination	0	21,847	21,847
Subscriptions	133	0	133
Miscellaneous	262	0	262
Deficits on projects	1,479	0	1,479
Accounting	0	0	0
Indirect costs	0	6,675	0
Expenditures concerning previous year	0	0	0
<i>Total Expenditure</i>	90,266	319,459	409,725
<b>Excess (Shortfall) of income over expenditure</b>	<b>37,007</b>	<b>(8,680)</b>	<b>28,327</b>

# Member contributions

## direct financial contributions and in-kind support

### Pledges to the IAP fundraising campaign initiated in 2013

Council of Finnish Academies  
 Union of German Academies of Sciences and Humanities  
*Deutsche Akademie der Naturforscher Leopoldina*  
 Academy of Athens, Greece  
 Hassan II Academy of Science and Technology, Morocco  
 Royal Society, UK  
 US National Academy of Sciences (NAS)  
*Academia Nacional de Ciencias del Uruguay*

### Voluntary Membership Contributions (since 2013)

Australian Academy of Science  
 Bangladesh Academy of Sciences  
 Georgian National Academy of Sciences (GAS)  
 Israel Academy of Sciences and Humanities  
 Korean Academy of Science and Technology (KAST)  
*Académie National des Sciences et Techniques du Senegal*  
 Turkish Academy of Sciences (TÜBA)  
 Uganda National Academy of Sciences (UNAS)

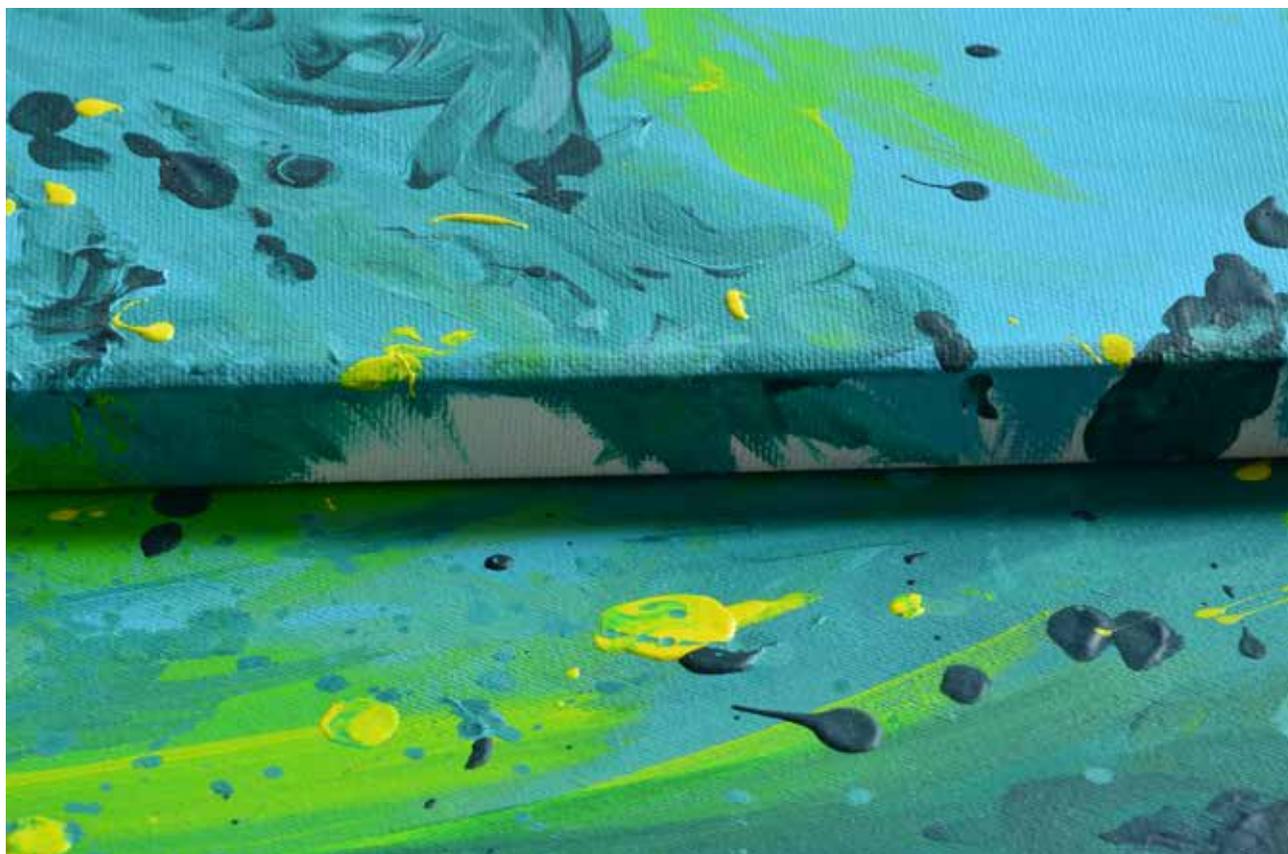
### Project support

IAP projects are also being implemented by various partners. The German National Science Academy, Leopoldina, for example, is holding funds from the German Federal Ministry of Education and Research for the IAP Food Nutrition and Security and Agriculture (FNSEA) project (see pages 21-22). And under the IAP Science Education Programme, the Smithsonian Science Education Center, Washington DC, USA, for example, has received more than USD100,000 to develop curricula to educate schoolchildren on the life cycle of mosquitoes and how to stay safe from mosquito-transmitted diseases.

In addition, the institute for Advanced Study is holding funds provided by the Carnegie Corporation of New York, which are administered by IAP for Research.

### In-kind support

IAP would like to thank its many member academies that have contributed to its fundraising campaign, have provided voluntary membership contributions, or that have provided in-kind support. Without this buy-in from the members, IAP activities would have much less visibility and impact around the globe.



## Standing Committees

### InterAcademy Partnership Steering Committee

- Robbert Dijkgraaf\*, the Netherlands (Co-chair IAP for Research)
- Depei Liu\* (Co-chair IAP for Health)
- Detlev Ganten, Germany (Co-chair IAP for Health)
- Krishan Lal, India (Co-chair IAP for Science)
- Daya Reddy, South Africa (Co-chair IAP for Research)
- Volker ter Meulen, Germany (Co-chair IAP for Science)

\* Robbert Dijkgraaf and Depei Liu are the current Presidents of the InterAcademy Partnership

In addition to the Steering Committee members, the following individuals, representing the IAP regional networks, make up the **InterAcademy Partnership Board**

Yoo Hang Kim, South Korea (Association of Academies and Societies of Sciences in Asia, AASSA)

Thierry Courvoisier, Switzerland (European Academies Science Advisory Council, EASAC)

Juan Asenjo, Chile (Inter-American Network of Academies of Science, IANAS)

Mustapha Bousmina, Morocco (Network of African Science Academies, NASAC)

### IAP for Science Executive Committee

- Krishan Lal, India (Co-chair)
- Volker ter Meule, Germany (Co-chair)
- African Academy of Sciences, represented by Aderemi Kuku
- Australian Academy of Science, Cheryl Praeger
- Brazilian Academy of Sciences, Luiz Davidovich
- Royal Society of Canada, Jeremy McNeil
- *Academia Chilena de Ciencias*, Juan Asenjo
- Cuban Academy of Sciences, Sergio Pastrana
- Academy of the Islamic Republic of Iran, Hassan Zohoor
- Science Council of Japan, Takashi Onishi
- Korean Academy of Science and Technology, Myung Chul Lee
- Academy of Science of South Africa, Barney Pitjana
- Royal Society, UK, Richard Catlow

### IAP for Health Executive Committee

- Detlev Ganten, Germany (Co-Chair)
- Depei Liu, China (Co-Chair)
- *Academia Nacional de Medicina* (Argentina), represented by Jorge Alberto Neira
- *Accademia Nazionale dei Lincei* (Italy), Mario Stefanini
- Academy of Sciences Malaysia, Lai-Meng Looi
- Hassan II Academy of Science & Technology (Morocco), Rajae El Aouad
- National Academy of Science and Technology (Philippines), Carmencita D. Padilla
- Academy of Science of South Africa, William Pick
- Swiss Academy of Medical Sciences, Thomas Zeltner
- Academy of Medical Sciences (UK), George Griffin
- US National Academy of Medicine, Margaret Hamburg

### IAP for Research Board

- Robbert Dijkgraaf, the Netherlands (Co-chair)
- Daya Reddy, South Africa (Co-chair)
- Australian Academy of Science, represented by Andrew Holmes
- Brazilian Academy of Sciences, Jacob Palis
- Chinese Academy of Sciences, Jinghai Li
- Hassan II Academy of Science and Technology (Morocco), represented by Mostapha Bousmina
- *Académie des Sciences* (France), Sébastien Candel
- German National Academy of Sciences Leopoldina, Jörg Hacker
- Indian National Science Academy, Ajay K. Sood
- Science Council of Japan, Takashi Onishi
- Mexican Academy of Sciences, Jaime Urrutia-Fucugauchi
- Nigerian Academy of Science, Mosto Onuoha
- Pakistan Academy of Sciences, Anwar Nasim
- National Academy of Sciences (Republic of Korea), Kwun Sook Il
- Royal Society (UK), Venkatraman Ramakrishnan
- US National Academy of Sciences, Marcia McNutt
- The World Academy of Sciences, Bai Chunli

**Ex-officio**

- Detlev Ganten & Depei Liu, IAP for Health
- Krishan Lal & Volker ter Meulen, IAP for Science
- International Council of Academies of Engineering and Technological Sciences (CAETS), Achiel Van Cauwenberghe

**Observers**

- International Council for Science (ICSU), Michael Clegg
- Royal Netherlands Academy of Arts and Sciences (KNAW), José van Dijck

**Membership Committee**

- Sergio Pastrana, Cuban Academy of Sciences (Chair)
- Fola Esan, IAP for Health
- Khairul A. bin Abdullah, AASSA
- Thierry J.-L. Courvoisier, EASAC
- Jeremy McNeil, IANAS
- Barney Pityana, NASAC

**Statements Governance Committee**

- George Griffin, UK (Chair)
- Marcello Barcinski, Brazil
- Jeremy McNeil, Canada

**Science for Poverty Eradication Committee**

- Luiz Davidovich, Brazilian Academy of Sciences (Chair)
- Lai Meng Looi, IAP for Health
- Aya Abe, AASSA
- Aishah Bidin, AASSA
- Richard Catlow, EASAC
- Peter Fritz, EASAC
- Ricardo Paes de Barros, IANAS
- Judith Teichman, IANAS
- Yousuf Maudarbocus, NASAC
- Ratemo Michieka, NASAC
- Robert Lepenies, Global Young Academy
- Pending - IAP for Research

**Science Education Programme (SEP) Global Council**

- Dato Lee Yee Cheong, Malaysia (Chair)
- Norma Nudelman, Argentina
- He Zhu, China
- Petra Skiebe-Corrette, Germany
- R. Indarjani, Indonesia
- Park Won-Hoon, South Korea

- Hazami Habib, Malaysia
- Guillermo Fernandez de la Garza, Mexico
- Manzoor Soomro, Pakistan
- Mustafa El Tayeb, Sudan
- Aphiya Hathayatham, Thailand
- Carol O'Donnell, USA
- Mario Stefanini, Italy

**Improving Scientific Input to Global Policymaking: Strategies for Attaining the Sustainable Development Goals\* - Working Group Members**

- Eva Alisic, Australia (Co-chair)
- Jinghai Li, China (Co-chair)
- Michael Barber, Australia
- Peter Fritz, Germany
- Norichika Kanie, Japan
- Muhammad Saidam, Jordan
- Francisco José Sánchez-Sesma, Mexico
- Rajae El Aouad, Morocco
- Robert Scholes, South Africa
- Keto E. Mshigeni, Tanzania
- Sandy Harrison, United Kingdom

**Harnessing Science, Engineering and Medicine to Address Africa's Challenges\* - Working Group Members**

- Robin Crewe, South Africa (Co-chair)
- Oyewale Tomori, Nigeria (Co-chair)
- T.J. Higgins, Australia
- Norbert Hounkonnou, Benin
- Sameh Soror, Egypt
- Odile Macchi, France
- Peter Fritz, Germany
- Eric Odada, Kenya
- Rajaâ Cherkaoui El Moursli, Morocco
- Himla Soodyall, South Africa
- Guéladio Cissé, Switzerland
- Keto E. Mshigeni, Tanzania
- Richard Catlow, UK
- Cato Laurencin, USA

\* Both projects are supported by a secretariat led by Tracey Elliott, Project Director, together with Tom Arrison (Executive Director, IAP-Research, US NAS), Nina Ward (Research Associate, US NAS) and Arlen Hastings (Director of External Projects, Institute for Advanced Study, Princeton).

For additional information, contact:  
[projects@iapartnership.org](mailto:projects@iapartnership.org)

# Meetings supported by IAP in 2016

## January

- Islamabad, Pakistan, AASSA-PAS Workshop on 'Challenges in Water Security to meet the Growing Food Requirement', 19-21 January 2016
- Brussels, Belgium, Launch event for EASAC report on 'Marine Sustainability', 25 January 2016
- Geneva, Switzerland, IAP presentation at the UNISDR Science and Technology Conference on 'Implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030', 27-29 January 2016

## February

- Merida, Mexico, IANAS Executive Committee meeting, 1-2 February 2016
- Brussels, Belgium, EASAC Bureau meeting, 12 February 2016
- Washington, D.C., USA, IAP for Research 'Doing Global Science' report release event at the annual meeting of the American Association for the Advancement of Science, 14 February 2016
- Brussels, Belgium, EASAC Working Group meeting on 'European Forests', 16-17 February 2016
- Dakar, Senegal, NASAC 1<sup>st</sup> African Forum on Sciences and Technologies for Development (FastDev), 22-24 February 2016
- Khartoum, Sudan, SNAS workshop on 'Design of Inquiry-based Science Education Booklet and Teachers/ Parents Guidelines', 24-25 February 2016
- Hermanus, South Africa, IAP for Science Executive Committee meeting, 28 February 2016
- Hermanus, South Africa, IAP for Health Executive Committee meeting, 28 February 2016
- Hermanus, South Africa, IAP 'Food and Nutrition Security and Agriculture' (FNSA) planning meeting, 28 February 2016
- Hermanus, South Africa, IAP Conference on 'Science Advice', 28 February - 1 March 2016

## March

- Hermanus, South Africa, IAP General Assembly, 2 March 2016
- Kathmandu, Nepal, AASSA-NAST workshop on 'Economic Prosperity through R&D in Natural Products', 29-31 March 2016
- Dublin, Ireland, Meeting of the EASAC Working Group on 'Electricity Storage', 23-24 March 2016

## April

- Brussels, Belgium, Meeting of the IAP-EASAC FNSA Working Group, 11-12 April 2016
- Santiago, Chile, IAP biennial science education conference on 'Improving the Learning of Biology and Related Sciences at the Pre-University Level', 14-15 April 2016
- Amsterdam, Netherlands, Meeting of the EASAC reference group on 'Smart Villages', 21 April 2016
- Addis Ababa, Ethiopia, NASAC communication event for the booklet 'Harnessing Modern Agricultural Biotechnology for Africa's Economic Development: Recommendations to Policymakers', 21-22 April 2016
- New Delhi, India, First meeting of the AASSA Expert Group for the IAP project on 'Food and Nutrition Security and Agriculture' (FNSA), 25-27 April 2016

## May

- Brussels, Belgium, Meeting of the EASAC Working Group on 'Circular Economy', 5 May 2016
- Rio de Janeiro, Brazil, IANAS General Assembly, 7 May 2016
- Nairobi, Kenya, Expert Panel Workshop on 'Food and Nutrition Security and Agriculture' (FNSA), 9-10 May 2016
- Oslo, Norway, Joint meeting of the EASAC Steering Panels (Biosciences, Environment & Energy), 11 May 2016
- Oslo, Norway, EASAC Bureau meeting, 12 May 2016

- Oslo, Norway, EASAC 15<sup>th</sup> anniversary event and 'Science-Into-Policy-Summit', 12 May 2016
- Oslo, Norway, EASAC Council meeting, 12-13 May 2016
- Rabat, Morocco, 10<sup>th</sup> anniversary event of Hassan II Academy of Science and Technology, 16-18 May 2016
- Podgorica, Montenegro, IAP presentation on synthetic biology at Montenegrin Academy of Sciences and Arts (MASA) conference on 'Technology + Society ->?Future', 20-21 May 2016
- Eindhoven, the Netherlands, Global Young Academy's 6<sup>th</sup> International Conference of Young Scientists and Annual General Meeting, 25-29 May 2016

## June

- Brussels, Belgium, Meeting of the EASAC Working Group on 'Genome Editing', 29 June 2016

## July

- Mauritius, NASAC Communication event for the booklet 'Climate Change Adaptation and Resilience in Africa: Recommendations to Policymakers', 4-5 July 2016
- Seoul, Korea, 2<sup>nd</sup> meeting of the AASSA Expert Group for the 'Food and Nutrition Security and Agriculture' (FNSA) project, 18-19 July 2016

## August

- Nairobi, Kenya, NASAC Women for Science (WfS) Working Group meeting, 4-5 August 2016
- Geneva, Switzerland, IAP present at Preparatory Committee for the 8<sup>th</sup> Review Conference (8-12 August) of the Biological and Toxin Weapons Convention (BWC), including side event on 'Supporting Effective BWC Implementation: Education, Outreach and Policy Advice', 8-10 August 2016
- New York, USA, IAP for Research: First Working Group meeting on 'Improving Scientific Input to Global Policymaking: Strategies for Attaining the Sustainable

Development Goals', 16- 17 August 2016

- Bangkok, Thailand, IAP Scienc Education programme session on 'Risk Communication on Public Issue: Mosquito-borne diseases - a case study' at the National Science and Technology Fair, 25 August 2016

## September

- Ulaanbaatar, Mongolia, AASSA-MAS Regional Workshop on 'The Role of Sciences in Green Development', 7-8 September 2016
- Helsinki, Finland, EASAC Bureau and strategy meetings, 13-15 September 2016
- Nairobi, Kenya, IAP for Research first Working Group meeting on 'Harnessing Science, Engineering and Medicine to Address Africa's Challenges', 19-20 September 2016
- Beijing, China, IAP for Research Board meeting, 25 September 2016
- Beijing, China, IAP for Health Executive Committee meeting, 25 September 2016
- Beijing, China, InterAcademy Partnership Joint Meeting, 26 September 2016
- Beijing, China, InterAcademy Partnership Board meeting, 26 September 2016
- Beijing, China, IAP for Health conference on 'Promoting Health', 27-28 September
- Beijing, China, IAP for Health General Assembly, 29 September
- Tallinn, Estonia, Meeting of the EASAC Environment Steering Panel, 22-23 September 2016
- Paris, France, AEMASE III Scientific Committee meeting, 26 September 2016
- Tagaytay City, Philippines AASSA-NAST PHL Workshop on 'The Role of Science Academies in Sustainable Development' in conjunction with the Annual Climate Conference on 'Addressing Climate Risks for Sustainable Development', 28-30 September 2016
- San Salvador, El Salvador, IANAS-CAS-CCC Meeting and El Salvador Academy project Meeting, 29-30 September 2017



## October

- Manila, the Philippines, National Academy of Science and Technology, Philippines (with the Academy of Sciences Malaysia, Nigerian Academy of Science and University of the Philippines, Manila) workshop on 'Addressing Inequities in Health: Fostering action on social determinants', 3-4 October 2016
- Nairobi, Kenya, NASAC 'Leading Integrated Research for Agenda 2030 in Africa' - Training Event on Transdisciplinary Research - 3-7 October 2016
- Berlin, Germany, Annual IAP for Health Young Physician Leaders (YPL) training workshop, 7-9 October 2016
- Berlin, Germany, IAP for Health YPL and 'One Health' events at World Health Summit, 9-11 October 2016
- Rome, Italy, IAP-*Accademia Nazionale dei Lincei* 'International Conference – Florence 1966-2016 – Resilience of Art Cities to Natural Catastrophes: The Role of Academies', 11-12 October 2016
- Brussels, Belgium, Meeting of the EASAC working group on 'Genome Editing', 17 October 2016
- Pretoria, South Africa, Organization for the Prohibition of Chemical Weapons (OPCW) (with IAP, TWAS and ASSAf) workshop on 'Policy and Diplomacy for Scientists: Introduction to Responsible Research Practices in Chemical and Biological Sciences', 18-20 October 2016
- Ankara, Turkey, AASSA International Symposium on 'Refugees and Migrants: A Global Problem or an Asset,' in conjunction with the 3<sup>rd</sup> AASSA General Assembly Meeting, 20-23 October 2016
- Brussels, Belgium, Meeting of the EASAC Energy Steering Panel, 25 October 2016
- Brussels, Belgium, Meeting of the IAP-EASAC working group on 'Food and nutrition security and agriculture', 27 October 2016

## November

- Johannesburg, South Africa, 12<sup>th</sup> Annual Meeting of African Science Academies (AMASA-12) 'Poverty Reduction', 4-8 November 2016
- Johannesburg, South Africa, 12<sup>th</sup> Annual Meeting of African Science Academies (AMASA) Learning Collaborative: Harnessing Science, Engineering and Medicine to Address Africa's Challenges: the implementation of global and regional policy frameworks. How should African science academies play their part? 6 November 2016
- Johannesburg, South Africa, Academy of Sciences of South Africa (with the Nigerian Academy of Science, Uganda National Academy of Science and South African Young Academy of Sciences) 'Workshop on the Social Determinants of Health', 7-8 November 2016
- Marrakech, Morocco, NASAC events at the COP22-UNFCCC meeting, 7-8 November 2016
- Lisbon, Portugal, Presentation event of EASAC-JRC report on 'Marine Sustainability in an age of Changing Oceans and Seas', 16 November 2016
- London, UK, EASAC Bureau meeting, 17 November 2016
- London, UK, EASAC Council meeting, 17-18 November 2016
- London, UK, UK Academy of Medical Sciences with IAP for Health workshop on 'Improving the Development and Deployment of Rapid Diagnostic Tests in LMICs', 21 November 2016
- Amsterdam, Netherlands, Meeting of the EASAC Working Group on 'Soils at Risk', 21-23 November 2016
- Brussels, Belgium, EASAC Biosciences Steering Panel meeting, 24 November 2016
- Brussels, Belgium, Launch of the two EASAC reports on 'Circular Economy', 30 November 2016

## Publications supported by IAP in 2016

- **Doing Global Science: A Guide to Responsible Conduct in the Global Research Enterprise**  
**Published by:** InterAcademy Partnership (IAP)  
**URL:** <http://www.interacademies.net/Publications/29734.aspx>
- **Women for Science: Inclusion and Participation in Academies of Science**  
**Published by:** InterAcademy Partnership (IAP) and Academy of Science of South Africa (ASSAf)  
**URL:** <http://www.interacademies.net/Publications/29832.aspx>
- **The Biological and Toxin Weapons Convention - Considerations for a science advisory mechanism (English Version)**  
**Published by:** InterAcademy Partnership (IAP)  
**URL, English version:** <http://www.interacademies.net/Publications/30867.aspx>  
**URL, Arabic version:** <http://www.interacademycouncil.net/File.aspx?id=29560>
- **The Biological and Toxin Weapons Convention: Implications of advances in science and technology (English version)**  
**Published by:** InterAcademy Partnership (IAP)  
**URL:** <http://www.interacademies.net/Publications/30337.aspx>
- **Convención sobre las armas biológicas y tóxicas - Implicaciones de los avances en la ciencia y la tecnología (Spanish Version)**  
**Published by:** InterAcademy Partnership (IAP)  
**URL:** <http://www.interacademies.net/Publications/30861.aspx>
- **Statement by the IAP Biosecurity Working Group at the Preparatory Committee for the 8th Review Conference of the Biological and Toxin Weapons Convention (BWC)**  
**Published by:** IAP Biosecurity Working Group  
**URL:** <http://www.interacademies.net/File.aspx?id=30680>
- **IAP Annual Report 2015**  
**Published by:** IAP for Science  
**URL:** <http://www.interacademies.net/Publications/30903.aspx>
- **Working with Big Ideas of Science Education**  
**Published by:** IAP for Science  
**URL, Chinese version:** <http://www.interacademies.net/Publications/30153.aspx>  
**URL, Farsi version:** <http://www.interacademies.net/Publications/29278.aspx>
- **Improving the reproducibility of biomedical research: A call for action**  
**Published by:** IAP for Health  
**URL:** <http://www.iamp-online.org/improving-reproducibility-biomedical-research-call-action>
- **AASSA brochure**  
**Published by:** Association of Academies and Societies in Asia (AASSA)  
**URL:** [http://aassa.asia/download/AASSA%20Brochure%202016-2018\\_website.pdf](http://aassa.asia/download/AASSA%20Brochure%202016-2018_website.pdf)
- **Challenges in Water Security to Meet the Growing Food Requirement – a workshop report**  
**Published by:** Association of Academies and Societies in Asia (AASSA) and Pakistan Academy of Sciences (PAS)  
**URL:** [http://aassa.asia/achievements/achievements.php?cate\\_idx=&bbs\\_data=aWR4PTk0JnN0YXJ0UGFnZT0wJmxc3R0bz0yMSZ0YWJsZT1jc19iYnNfZGF0YSZj-b2RlPWFjaGlldmVtZW50JnNlYXJjaF9pdGVtPSZz-ZWFyY2hfb3JkZXI9%7C%7C&bgu=view&pageNum=&cate=](http://aassa.asia/achievements/achievements.php?cate_idx=&bbs_data=aWR4PTk0JnN0YXJ0UGFnZT0wJmxc3R0bz0yMSZ0YWJsZT1jc19iYnNfZGF0YSZj-b2RlPWFjaGlldmVtZW50JnNlYXJjaF9pdGVtPSZz-ZWFyY2hfb3JkZXI9%7C%7C&bgu=view&pageNum=&cate=)
- **Economic Prosperity through Research and Development in Natural Products – a workshop report**  
**Published by:** Association of Academies and Societies in Asia (AASSA) and Nepal Academy of Science and Technology (NAST)  
**URL:** [http://aassa.asia/achievements/achievements.php?cate\\_idx=&bbs\\_data=aWR4PTEwOCZzdGFydFh-Z2U9M0ZsaXN0Tm89MjQmdGFibGU9Y3NfYmJzX2Rhd-GEY29kZT1hY2hpZXZlbWVudCZzZWYy2hfaXRlbT0mc-2VhcmNoX29yZGVyPQ==||&bgu=view&pageNum=&cate=](http://aassa.asia/achievements/achievements.php?cate_idx=&bbs_data=aWR4PTEwOCZzdGFydFh-Z2U9M0ZsaXN0Tm89MjQmdGFibGU9Y3NfYmJzX2Rhd-GEY29kZT1hY2hpZXZlbWVudCZzZWYy2hfaXRlbT0mc-2VhcmNoX29yZGVyPQ==||&bgu=view&pageNum=&cate=)

- The Role of Sciences in the Green Development – a workshop report**

**Published by:** Association of Academies and Societies in Asia (AASSA) and Mongolian Academy of Sciences (MAS)

**URL:** [http://aassa.asia/achievements/achievements.php?cate\\_idx=&bbs\\_data=aWR4PTEwNyZzdGFydFBh-Z2U9MCZsaXN0Tm89MjMmdGFibGU9Y3NfYmJzX2Rhd-GEY29kZT1hY2hpZXZlZWVudCZzZWYyY2hfaXRlbT0mc-2VhcmNoX29yZGVyPQ==||&bgu=view&pageNum=&cate=](http://aassa.asia/achievements/achievements.php?cate_idx=&bbs_data=aWR4PTEwNyZzdGFydFBh-Z2U9MCZsaXN0Tm89MjMmdGFibGU9Y3NfYmJzX2Rhd-GEY29kZT1hY2hpZXZlZWVudCZzZWYyY2hfaXRlbT0mc-2VhcmNoX29yZGVyPQ==||&bgu=view&pageNum=&cate=)
- The Role of Science Academies in Sustainable Development – a workshop report**

**Published by:** Association of Academies and Societies in Asia (AASSA) and the National Academy of Science and Technology, Philippines (NASTPHL)

**URL:** [http://aassa.asia/achievements/achievements.php?cate\\_idx=&bbs\\_data=aWR4PTEwOCZzdGFydFBh-Z2U9MCZsaXN0Tm89MjQmdGFibGU9Y3NfYmJzX2Rhd-GEY29kZT1hY2hpZXZlZWVudCZzZWYyY2hfaXRlbT0mc-2VhcmNoX29yZGVyPQ==||&bgu=view&pageNum=&cate=](http://aassa.asia/achievements/achievements.php?cate_idx=&bbs_data=aWR4PTEwOCZzdGFydFBh-Z2U9MCZsaXN0Tm89MjQmdGFibGU9Y3NfYmJzX2Rhd-GEY29kZT1hY2hpZXZlZWVudCZzZWYyY2hfaXRlbT0mc-2VhcmNoX29yZGVyPQ==||&bgu=view&pageNum=&cate=)
- Refugees and Migrants: A Global Problem or an Asset – report on an international symposium**

**Published by:** Association of Academies and Societies in Asia (AASSA)

**URL:** [http://aassa.asia/achievements/achievements.php?cate\\_idx=&bbs\\_data=aWR4PTEwOSZzdGFydFBh-Z2U9MCZsaXN0Tm89MjUmdGFibGU9Y3NfYmJzX2Rhd-GEY29kZT1hY2hpZXZlZWVudCZzZWYyY2hfaXRlbT0mc-2VhcmNoX29yZGVyPQ==||&bgu=view&pageNum=&cate=](http://aassa.asia/achievements/achievements.php?cate_idx=&bbs_data=aWR4PTEwOSZzdGFydFBh-Z2U9MCZsaXN0Tm89MjUmdGFibGU9Y3NfYmJzX2Rhd-GEY29kZT1hY2hpZXZlZWVudCZzZWYyY2hfaXRlbT0mc-2VhcmNoX29yZGVyPQ==||&bgu=view&pageNum=&cate=)
- Marine Sustainability in an Age of Changing Oceans and Seas (report)(in cooperation with the Joint Research Centre [JRC] of the European Commission)**

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- Greenhouse Gas Footprints of Different Oil Feedstocks (statement)**

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- EASAC and FEAM Joint Statement of the Presidents on Antimicrobial Resistance (statement)**

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- Priorities for Critical Materials for a Circular Economy (report)**

**Published by:** European Academies Science Advisory Council (EASAC)

**URL:** [http://www.easac.eu/fileadmin/PDF\\_s/reports\\_statements/Circular\\_Economy/EASAC\\_Critical\\_Materials\\_web\\_corrected\\_Jan\\_2017.pdf](http://www.easac.eu/fileadmin/PDF_s/reports_statements/Circular_Economy/EASAC_Critical_Materials_web_corrected_Jan_2017.pdf)
- Indicators for a Circular Economy (report)**

**Published by:** European Academies Science Advisory Council (EASAC)

**URL:** [http://www.easac.eu/fileadmin/PDF\\_s/reports\\_statements/Circular\\_Economy/EASAC\\_Indicators\\_web\\_complete.pdf](http://www.easac.eu/fileadmin/PDF_s/reports_statements/Circular_Economy/EASAC_Indicators_web_complete.pdf)
- European Review – Can we tackle the Antibiotic Threat?**

**Published by:** European Academies Science Advisory Council (EASAC)

**URL:** <https://www.cambridge.org/core/journals/european-review/article/can-we-tackle-the-antibiotic-threat/0C1E4CD8A2938E55436A6DC659E539D2#>
- International Innovation - What are we gaining from gain of function research?**

**Published by:** European Academies Science Advisory Council (EASAC)

**URL:** [http://www.easac.eu/fileadmin/PDF\\_s/Journal\\_Articles/EASAC\\_Intl\\_Innovation\\_H2020\\_1606\\_Media\\_LR.pdf](http://www.easac.eu/fileadmin/PDF_s/Journal_Articles/EASAC_Intl_Innovation_H2020_1606_Media_LR.pdf)
- Le Monde – ‘Frankenvirus’, bientôt l’épilogue? Volker ter Meulen in an interview with Le Monde about the EASAC ‘Gain of Function’ report**

**Published by:** European Academies Science Advisory Council (EASAC)

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- The Inter-American Network of Academies of Sciences – a report on IANAS’ activities 2010-2016**

**Published by:** Inter-American Network of Academies of Sciences (IANAS)

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- A Guide Towards a Sustainable Energy Future for the Americas (English Version)**

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**URL:** [http://www.ianas.org/books/books\\_2016/book\\_energy\\_web.pdf](http://www.ianas.org/books/books_2016/book_energy_web.pdf)

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**URL:** [https://globalyoungacademy.net/wp-content/uploads/2016/09/Municipal-Solid-Waste-Management-and-Green-Economy-Report\\_20160901.pdf](https://globalyoungacademy.net/wp-content/uploads/2016/09/Municipal-Solid-Waste-Management-and-Green-Economy-Report_20160901.pdf)
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- **A Booklet and Guide to Inquiry Based Science Education**  
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- **Proceedings of the InterAcademy Partnership (IAP) Conference on Science Advice, 28 February - 1 March 2016, Hermanus, South Africa**  
**Published by:** Academy of Science of South Africa (ASSAf)  
**URL:** <http://www.interacademies.net/Publications/30871.aspx>
- **'Introducing the InterAcademy Partnership' – article by Peter McGrath in the Journal 'Critical Care and Catastrophe Medicine'**  
**Published by:** Georgian Academy of Medical Sciences, Georgian Critical Care Institute  
**URL:** <http://www.interacademies.net/Publications/31031.aspx>
- **'Synthetic Biology: Opportunities and Governance' – article by Peter McGrath in the proceedings the conference on 'Technology + Society -> Future' held by the Montenegrin Academy of Sciences and Arts**  
**Published by:** Montenegrin Academy of Sciences and Arts (MASA)  
**URL:** <http://www.interacademies.net/Publications/30914.aspx>



## Secretariat

The InterAcademy Partnership secretariat is hosted by The World Academy of Sciences (TWAS) in Trieste, Italy, and by the US National Academy of Sciences in Washington, DC, USA.

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The IAP for Science and IAP for Health secretariat is hosted by TWAS on the campus of the Abdus Salam International Centre for Theoretical Physics (ICTP) in Trieste, Italy, and supported financially by the Government of Italy. Additional administrative support is therefore provided by TWAS, especially Patricia Presiren, Nino Coppola, Marco Beltramini and Ezio Vuck.

Off-site support from the German National Academy of Sciences, Leopoldina: Jana Hinz

IAP for Research director of projects: Tracey Elliot (UK)

IAP also runs an internship programme. The IAP secretariat in Trieste selects talented young individuals to contribute to the workings of either IAP for Science or IAP for Health. The programme is open to students and other young people of any country, fluent in English, aged between 18 and 25, and offers the opportunity to gain international experience in a multicultural environment.

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*IAP for Research is hosted by the US National Academies of Science, Engineering and Medicine in Washington, DC, USA, and receives core funding support from US NASEM.*



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