



iap SCIENCE
HEALTH
POLICY

the interacademy partnership

Annual Report 2020



Annual Report 2020



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INTERACADEMY PARTNERSHIP ANNUAL REPORT 2020

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
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A Message from the IAP Presidents

The year 2020 will remain forever ingrained in our memory. The COVID-19 pandemic has thrown many challenges our way and many more still lie ahead. We often gazed in despair at the pain caused by the novel coronavirus. Some of us lost family members, colleagues and friends, and many more had their everyday lives turned upside down.

The InterAcademy Partnership (IAP) stands strong amidst the pandemic, underscoring the importance of coming together as a community that finds in science not only a common language, but also the key to a successful post-pandemic response and recovery.

Looking back at 2020, we are proud to have achieved so much despite the challenges. We adjusted to a new way of virtual working, and continue to make efforts to engage our membership as inclusively and equitably as possible.

First and foremost, we would like to acknowledge the important role IAP member academies and our regional networks have been playing in helping to ensure that trustworthy and credible information on COVID-19 is reaching governments, intergovernmental organisations, and as many people as possible.

We launched the new IAP website, whose redesign reflects IAP today, its future ambitions, and efforts to better communicate the importance of science, engineering and medicine to a broader audience (see page 10).

Since the beginning of the pandemic, IAP issued three communiqués related to the crisis (on the COVID-19 Pandemic, on a Green Recovery, and on the Development and Distribution of Vaccines against COVID-19) and also launched the IAP COVID-19 Expert Group (see page 14) to assist academies all over the world in their efforts to inform their respective communities. Today, IAP is still working to counter vaccine hesitancy, battle the disinformation pandemic and pushing for health equity.

Although 2020 was a challenging year also for the IAP regional networks, still they managed once again to ensure that our work is inclusive and has truly global relevance.

Highlights include AASSA's work to promote the role of women scientists (see page 28), EASAC's many reports and commentaries (see page 29), IANAS' webinars and focal point activities (see page 30) and NASAC's renewed commitment to science education and international cooperation (see page 32).

IAP continued its Climate Change and Health inter-regional project focused on climate change adaptation and mitigation strategies that bring health co-benefits (see page 15).

The IAP Science Education Programme (SEP) embarked on an exciting mission – promoting the development of 'Centres for science and technology in Africa' – and together with its partners published a new COVID-19 rapid-response guide for youth (see page 19).

IAP initiated its 'Combatting Predatory Academic Journals and Conferences' project to gauge the extent and impact of predatory practices in science, identify their root causes, and recommend actions to combat them (see page 12).

The Young Physician Leaders (YPL) programme moved its activities online, but in doing so did not lose the human connection that it offers to its network of alumni (see page 22).

A new IAP Biosecurity Working Group was established, and an important workshop report put in the spotlight on the pivotal importance of having the political will to invest in appropriate levels of public health preparedness and coordination at regional and global levels (see page 25).

Finally, we welcome the three new academies who have been accepted for membership: the Algerian Academy of Sciences and Technology, the Rwanda Academy of Sciences, and the Tunisian Academy of Sciences, Letters and Arts *Beit al Hikma*. Now under the umbrella of IAP, 143 national, regional and global member academies work together to support the vital role of science in seeking solutions to the world's most challenging problems.

The need for science, rationality and critical thinking has never been stronger, and IAP provides a collective, supportive mechanism for academies to further strengthen their crucial roles as providers of evidence-based policy and advice. ■


Volker ter Meulen

IAP Co-president 2016 – May 2021



Depei Liu

IAP Co-president 2016-2022



Richard Catlow

IAP Co-president May 2021-2022



Vision, Mission and Structure

The InterAcademy Partnership (IAP) is a global network of over 140 academies of science, medicine and engineering that brings together many of 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 organisations 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.

IAP provides a platform for member academies to

- share good practice, learn from each other and build their capacity and visibility;
- develop common positions and agree to actions/interventions on regional and global issues of shared interest;
- build collaborations among academies and with key stakeholders in other networks and sectors;
- promote the importance of inclusive science for generating new knowledge, informing robust decision-making for good governance, and building the science literacy of global citizens; and
- facilitate science serving society as a global public good.

Thus, IAP has four main strategic priorities:

- build the capacity of, and empower, regional networks of academies and their national members;
- empower academies and regional academy networks to provide independent, evidence-

based, authoritative advice on global, regional and national issues;

- promote the importance of science in research, education, and literacy; and
- build IAP as a progressive and more resilient global academies network.

IAP currently has three components: IAP Science and IAP Health, managed by the IAP Secretariat based in Trieste, Italy; and IAP Policy, managed by the IAP Secretariat based in Washington, DC, USA. This structure is being further streamlined to maximise the network's effectiveness.

Integral to IAP's operations are its 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), the Network of African Science Academies (NASAC) – and the Global Young Academy (GYA), which facilitates access to the perspectives of early career researchers.

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

Overview

Looking Back: An overview of IAP's goals and key activities in 2020

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Looking Back:

An overview of IAP's goals and key activities in 2020

The ambition of IAP is for the world's academies to play a vital role in ensuring that science serves society inclusively and equitably, and underpins global sustainable development. To achieve these aims, IAP convenes and empowers its 143 member academies to work collaboratively on issues of global, regional, and national importance.

The current landscape of international science is complex and continues to evolve, with an increasing number of new, established and reconfigured organisations and networks providing science advice for policy. In alignment with Sustainable Development Goal 17 (SDG#17), the IAP Strategic Plan (2019–2022) sets out IAP's niche in this ecosystem, with an emphasis on partnership and collaboration within its membership and with other like-minded organisations.

IAP is uniquely placed to:

- Build the capacity of regional networks of academies and their national members, who represent excellence in science, engineering and medicine in their countries;
- Empower regional networks and academies to provide independent, authoritative advice on global, regional and national issues through synthesis reports, consensus statements, foresight studies, critiquing public policy processes and outputs, and convening key stakeholders;
- Communicate the importance of science, engineering and medicine in terms of research, education, literacy, public discourse, and outreach; and
- Build IAP as a progressive and more resilient global academies' network by strengthening governance, empowering the secretariat, and designing and implementing cohesive policies.

Strategic Priority 1: Capacity Building

IAP helps to build the capacity of its member

academies at global, regional and national levels.

At the global level, IAP is active in projects and activities that bring together the expertise present in the diversity of its membership on wide-ranging topical and/or urgent issues. Its consensus reports, statements and commentaries speak to the United Nations (UN) and its agencies, as well as other international bodies, and in doing so help build the capacity and understanding of academies on global governance systems while supporting evidence-based decision-making.

In particular, IAP published the Statement 'A Call to Action: Furthering the fight against falsified and substandard medical products' (see page 16) and launched a new project on predatory journals and conferences (see page 12).

Furthermore, IAP's input into the UNESCO Open Science Recommendation, developed by the 10 members of an *ad hoc* working group on behalf of IAP, contributed to UNESCO's draft recommendation on Open Science that has since been submitted to its 193 Member States – a major step in facilitating international cooperation and universal access to scientific knowledge.

At the regional level, IAP worked closely with and through its 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 Sciences (IANAS) and the Network of African Science

Academies (NASAC) received grants from IAP to enable them to undertake regional activities, including workshops and studies of local relevance. The funds provided by IAP are typically used to leverage additional funds that help expand the activities and enhance their impact (see pages 28–32). IAP's inter-regional project on Climate Change and Health (CCH) also helped to build capacity within and between regions.

At the national level, IAP encourages the engagement of all its member academies, including newly established and under-resourced academies, in its numerous global and regional activities. In contributing to working groups and their resulting consensus reports and statements, IAP provides member academies with a voice on urgent and topical issues that they can use to engage with their own national policy-makers and other key stakeholders. Such engagement helps to build the credibility and confidence of national academies both within their nations and beyond. When feasible, capacity-building grants are also provided to individual academies to enhance their abilities to pursue strategic national initiatives. In 2020, five such grants were provided via NASAC to academies in Africa.

Strategic Priority 2: Science Advice

IAP works on wide-ranging policy areas that are underpinned by science.

In 2020, IAP continued its project on 'Climate Change and Health', engaging all four regional networks in a regional-to-global study, modelled on the Food and Nutrition Security and Agriculture project that reported in 2018 (see page 15). The regional reports and global synthesis study from this major project, funded by the German Federal Ministry of Education and Research (BMBF), will be completed in 2022.

IAP and NASAC collaborated with the Academy of Science of South Africa (ASSAf) on the implications of neonicotinoid insecticide use for ecosystem services and sustainable agriculture in Africa. The final report was launched in 2019 and this analysis has now been included in the online library of BES-Net, a network that facilitates and promotes dialogue on themes echoing the global assessments of the Intergovernmental Platform for Biodiversity and Ecosystem Services (IPBES), and in key areas of UNDP's work on biodiversity and ecosystems management. During 2020, efforts to disseminate and publicise the report, 'Neonicotinoid Insecticides:

Use and Effects in African Agriculture', included presentation in a session at the World Biodiversity Forum that took place in Davos, Switzerland, 23–28 February 2020, and of publication of an article published in *The Conversation*.

A new IAP Biosecurity Working Group (BWG) was established in late 2020 following a process of nominations of experts by member academies. The BWG will tackle emerging issues in biosecurity, and continue its engagement with the Biological and Toxin Weapons Convention (BWC), participating in both the BWC Meeting of Experts and the Meeting of States Parties (see page 25).

In the 'policy for science' arena, IAP launched a major new project on 'Combatting Predatory Journals and Conferences' funded by the Gordon and Betty Moore Foundation. Set to report in early 2022, the project's objectives are to define predatory and unethical practices in academic journals and conferences; gauge their extent and impact; understand their root causes; examine efforts to combat predatory journals, publishers and conferences around the world; and to provide concrete recommendations for addressing the problem. The project is anticipated to inform a further major study on research assessment practices, which lie at the heart of many of the global research community's challenges and of which predatory practices are a symptom.

Strategic Priority 3: Education and Outreach

IAP's education and outreach activities support inquiry-based science education (IBSE) and the professional development of young scientists and medical professionals.

In 2020, the IAP Science Education Programme (IAP SEP) continued its work on a One Belt One Road (OBOR) curriculum aimed at helping schoolchildren across many Asian and African countries understand the contributions that their cultures and civilisations have provided to scientific thinking. IAP also continued its collaboration with the Smithsonian Science Education Center (SSEC). In April 2020, the IBSE-focused 'Food! Community Research Guide' was launched, followed in May, also with the support of the World Health Organization (WHO), 'COVID-19! How can I protect myself and others?' a new rapid-response guide for youth ages 8–17 (see page 20).

In addition to institutional strengthening, IAP supports individuals through its programmes. In 2020, IAP worked to strengthen the IAP Young

Physician Leaders (YPL) alumni network, whose activity is now facilitated by a newly established YPL Steering Committee. It also embarked on a new project to help refugee and displaced scientists, and published the 'S.O.S. Booklet for Global Young Scholars' together with the Global Young Academy (GYA; see page 22).

Strategic Priority 4: The Network

IAP continues to build a more progressive and resilient global academies network.

IAP's Secretariat staff based in Italy, USA and Germany met virtually on a weekly basis and streamlined the organisation's work to ensure the smooth operation of IAP and its working groups during the pandemic.

The World Academy of Art & Science (WAAS) and the United Nations Office at Geneva (UNOG) conducted an e-conference 'Strategies for Transformative Global Leadership' in June in partnership with IAP. The conference included a special session on the 'Role of Academies: Addressing Global Social Challenges' that took place on 18 June. The panel featured successful initiatives of IAP and its member academies to promote global social transformation in different fields, focusing on academy experiences in offering diverse perspectives to inform policy-making.

In October, IAP Presidents Volker ter Meulen and Depei Liu joined the 13th Academy of Science Presidents' Meeting to discuss academies' responses to the COVID-19 pandemic. More than 20 presidents of academies and international organisations from around the world joined this online meeting organised by the Science Council of Japan and the UK's Royal Society.

In 2020, three new academies were accepted for IAP membership: the Algerian Academy of Sciences and Technology, the Rwanda Academy of Sciences, and the Tunisian Academy of Sciences, Letters and Arts *Beit al Hikma*.

2020 also saw the launch of the new IAP website (www.interacademies.org), a critical tool to disseminate IAP's work and amplify the voice of its member academies and regional networks. The launch of the new website with improved design, usability and functions marks a renewed commitment by IAP to the ongoing effort to ensure that world academies work together to support the vital role of science in seeking evidence-based solutions to the world's most challenging problems. A likely result of the re-design, in 2020, the number of sessions grew by

over 20% and users grew by over 30% compared to 2019.

By December 2020, IAP had reached the landmark number of 3,500 'followers' of its Twitter account, @IAPPartnership, growing by 57% in a year. IAP also continued distributing its quarterly e-newsletter with news, events, updates and opportunities of IAP programmes and projects for IAP members and other interested parties, as well as a dedicated newsletter for alumni of the IAP Young Physician Leaders (YPL) programme.

The IAP YouTube channel (<https://tinyurl.com/IAPyoutube>) now offers dozens of videos related to IAP activities, and the new IAP LinkedIn page (<https://www.linkedin.com/company/interacademypartnership>) has already reached 500 followers and proven very effective not only to reaching out to the IAP member academies, but also the broader scientific community and the general public.

The EuroScience Open Forum (ESOF), the biennial, pan-European, general science conference dedicated to scientific research and innovation took place in Trieste, Italy, in September 2020 – one of the first major hybrid scientific events. IAP was included among the ESOF partner organisations, and was present on site with an exhibition stand (shared with TWAS and the Organization for Women in Science for the Developing World) and its staff contributed to the event's scientific, press and promotional activities. ■

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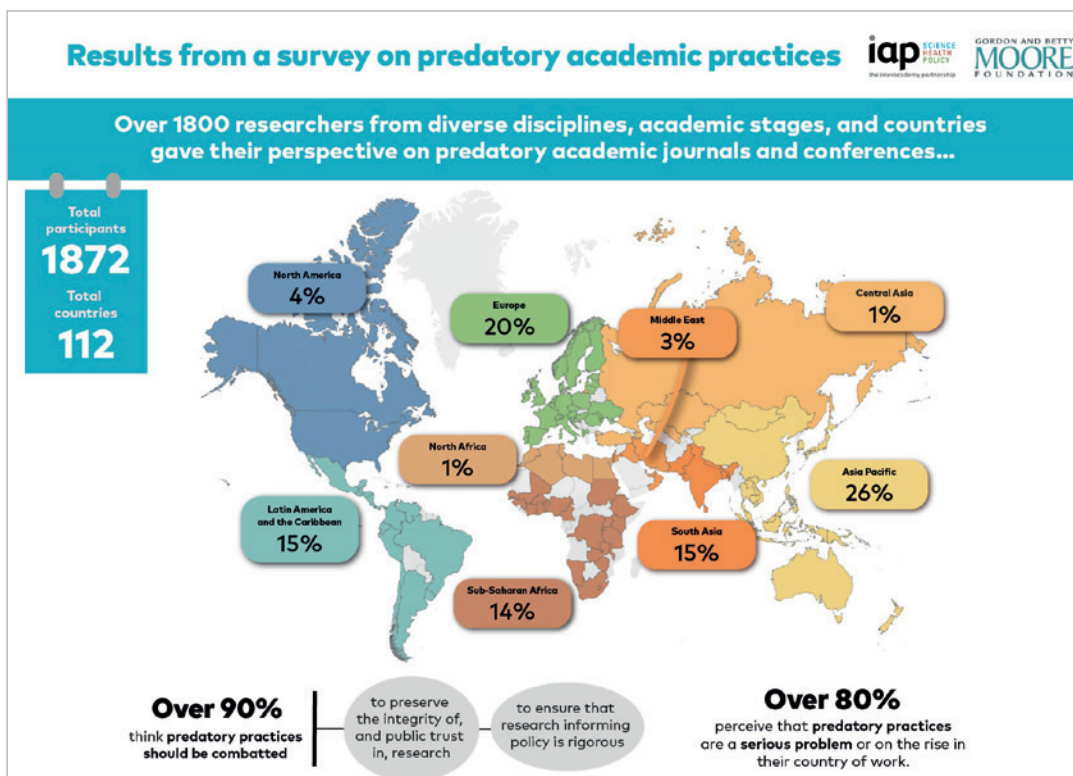
Combating Predatory Academic Journals and Conferences

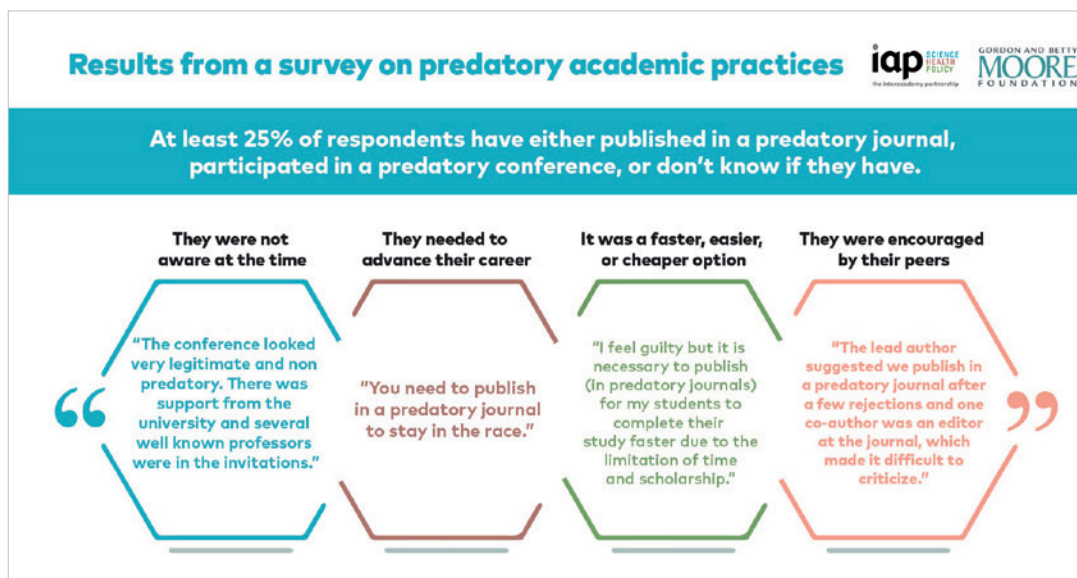
A major new IAP study, ‘Combating predatory academic journals and conferences’, was launched in May 2020. Funded by The Gordon and Betty Moore Foundation (GBMF), the two-year project is exploring what constitutes so-called predatory academic practices, the degree to which they have infiltrated research, their actual and potential impact, their root causes or drivers, and effective ways to combat them.

Broadly speaking, predatory publishers and predatory conference providers are primarily motivated by profit rather than scholarship, offering low quality or no peer review and/or editorial control, fraudulently using established journals, institutions or researchers, and exploiting the pressure on researchers to publish

their results and participate in international conferences.

An international working group of 12 experts, nominated by academies and sister organisations from around the world, was established and met (virtually) eight times during 2020. The first six months of the project saw an intense





period of sub-group working to further scope the project and interrogate published literature. Recognising the systemic nature of predatory practices, the study deployed a range of methodologies, including seven in-depth stakeholder dialogues with key sectors (representatives from the research community, research funding agencies, publishers, libraries and indexing services, universities, conference providers/experts, and leaders in international science governance) which ran from September to November 2020.

A vital part of this IAP study was a unique survey of the global research community (November to December 2020) whose objective was to gauge researchers' awareness, understanding and experience of predatory journals and conferences, and to explore how these compare across geographies, disciplines and career stages. Available in seven languages and the largest of its kind on this issue, the survey illustrated that predatory practices have pervaded all parts of the world, across many disciplines and all career stages. Concerningly, over 80% of the 1,800 respondents from 112 countries who participated perceived that predatory practices are already a serious problem or on the rise in their country; over 90% indicating that they should be combatted. Even more concerningly, over a quarter of them had already published in a predatory journal or presented at a predatory conference (11%) or not known if they had (14%). Most respondents concluded that, if left unchallenged, predatory practices risk fuelling misinformation in public policy, infiltrating and undermining the whole research enterprise,

and widening the research gap between high and low income countries. Respondents cited a lack of awareness as the main reason for engaging with predatory practices, highlighting an urgent need for awareness-raising campaigns, training and mentorship to protect researchers at all stages of their career. The second main reason was to advance their career, illustrating the metrics-driven, pressure-to-publish culture prevalent in research systems all over the world. These findings would shape the study's ongoing work in 2021.

The IAP study on predatory practices will report in early 2022 and make recommendations to key stakeholder communities whose actions can bring about sustained and systemic change to help curb predatory academic practices. It is anticipated that the study will also inform a further initiative on research evaluation, which lies at the heart of many of the global research community's challenges and of which predatory practices are a symptom. This study complements projects being implemented by other global institutions on related issues of open science and the future of scientific publishing (led by UNESCO and the International Science Council, respectively). ■

Promoting Global Health

IAP member academies play an essential role in the organisation's mission to improve health policies worldwide by providing evidence-based advice to governments and other key influencers. During 2020, the ongoing COVID-19 pandemic dominated the global health agenda and brought to the fore the vital importance of international cooperation on all aspects of global health.

Using science in the fight against COVID-19

Concerned that fake news and misinformation were spreading rapidly both online and offline, IAP information from credible sources, such as the World Health Organisation (WHO), IAP member academies and high-impact, peer-reviewed journals, as a trustworthy resource for its members and interested publics.

Additionally, IAP issued three communiqués related to this crisis: the 'IAP Communiqué on the COVID-19 Pandemic', which was a call for collective action on a global scale to improve and accelerate the use of research and its outputs for the global public good; the 'IAP Communiqué on Green Recovery', emphasising that only a low-carbon recovery can generate co-benefits for social equity, the environment, and human health; and the 'IAP Communiqué on the Development and Distribution of Vaccines against COVID-19', reinforcing that cutting corners in the race for a COVID-19 vaccine, anti-vaccine sentiments and vaccine nationalism are all public health threats that must be addressed. IAP also published a press release to condemn the USA's decision to halt WHO funding amid the pandemic, reiterating its call for international cooperation and collaboration in the fight against COVID-19.

"Many in the scientific community are expressing great concern that a willingness to coordinate action and share resources that was found in tackling previous pandemics such as HIV, SARS and avian influenza has not emerged to the same extent yet for COVID-19. It is time to change the tide," said IAP President Volker ter Meulen.

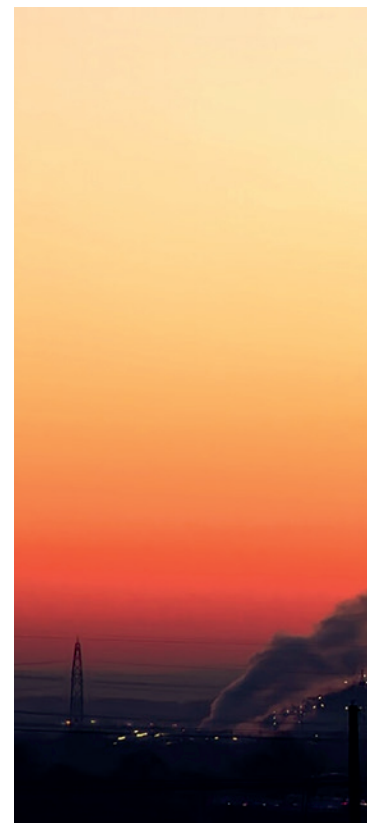
Furthermore, IAP launched the IAP COVID-19 Expert Group, a group charged with responding

to inquiries routed through academies related to the ongoing COVID-19 pandemic across a broad range of health, social, environmental and other direct and indirect consequences.

The IAP COVID-19 Expert Group brings together a wealth of multi-disciplinary expertise nominated by academies, and makes this expertise available to all member countries. Through it, IAP aims to facilitate the sharing of ideas, information and recommendations among countries and regions to support the evidence-based response to and recovery from the pandemic. Three co-chairs lead the group with an additional 20 members from around the world that make up a core Advisory Panel. Another 55 leading scientists are included in the Expert Group and may be called on for additional technical and geographically-specific support. During 2020, the Expert Group responded to queries from the Dominican Republic and Cuba, and contributed to other IAP initiatives.

Climate Change and Health

Led by the German National Academy of Sciences, Leopoldina, and funded by the German Federal Ministry of Education and Research (BMBF),



This Global Call from IAP emphasised that effort on the global scale is essential to mitigate the spread of coronavirus in all territories.

COORDINATION IN THE COMMUNICATION OF VALIDATED INFORMATION WORLDWIDE, BY INTER-GOVERNMENTAL ORGANISATIONS AND OTHERS IS ESSENTIAL

Communiqué on COVID-19, InterAcademy Partnership (IAP)

Download it here: tinyurl.com/IAP-COVID-19

Photo Credit: Alissa Eckert, MS; Dan Higgins, MAMS

#COVID19

iap SCIENCE HEALTH POLICY
The inter-academy partnership



Major climate change effects encompass heat-related morbidity and mortality, infectious diseases, food and nutrition insecurity, disaster-associated injury and death, and impacts on mental health.

IAP has launched an inter-regional project focused on climate change adaptation, and mitigation strategies that bring health co-benefits.

There are many pathways, direct and indirect, to mediate the effects of climate change on human health. There is also significant variation within and between regions and amongst different population groups. While there is increasing political awareness of the issues and a rapidly accumulating evidence base, there has been less focus on solutions: how to develop resilience, adapt at health systems and ensure health co-benefits of climate change mitigation.

The major IAP 'Climate Change and Health' (CCH) project, aiming to inform policy-makers and other stakeholders, is progressing in parallel with the regional academy networks in Africa (NASAC), Asia (AASSA) and the Americas (IANAS) building on previous work done in Europe (EASAC).

To develop their reports, each IAP regional network has formed a regional expert group of scientists, policy-makers and practitioners nominated by IAP member academies and have held workshops to draw together broader scientific and health expertise to sharpen the regional focus of each report. The design of the project encourages inclusivity and transdisciplinary research for a systems-based approach to tack-

ling climate change with benefits for equity and health as well as the environment.

In 2020, planned workflows were adjusted to take into account the effects of the pandemic. AASSA managed to hold an in-person working group meeting in February in Kuala Lumpur, Malaysia, hosted by the Malaysian Academy of Sciences. IANAS and NASAC, however, had to replace their physical working group meetings with online conferences which took place in March and May respectively. Regular online meetings between the regional leads has helped to share awareness on progress in tackling priority topics, identify emerging opportunities and challenges, and support quality assurance and capacity building objectives.

The three networks are now drafting their respective reports which will focus on climate change adaptation and mitigation strategies that bring health co-benefits for their regions, with particular focus on vulnerable groups and which will also include case studies. These reports, together with the report by EASAC, will form the basis of an IAP global synthesis report to be produced during in the course of 2021/2022. Taken together, the four regional reports and the global synthesis will provide examples of good practice, show how the evidence currently available can inform policy at local, regional and global levels, and identify knowledge gaps to fill

with new research. Project recommendations will also take account of the COVID-19 concurrent crisis and the need to do more to attain the Sustainable Development Goals (SDGs).

Finally, on 26 October, to discuss preliminary findings of the project with an international audience, IAP hosted an online session on Climate Change and Health at the World Health Summit. The session was chaired by IAP President Volker ter Meulen, moderated by the project co-chair Andrew Haines, and featured IANAS's Jeremy McNeill, EASAC's Robin Fears, AASSA's Khairul Abdullah and NASAC's Caradee Wright.

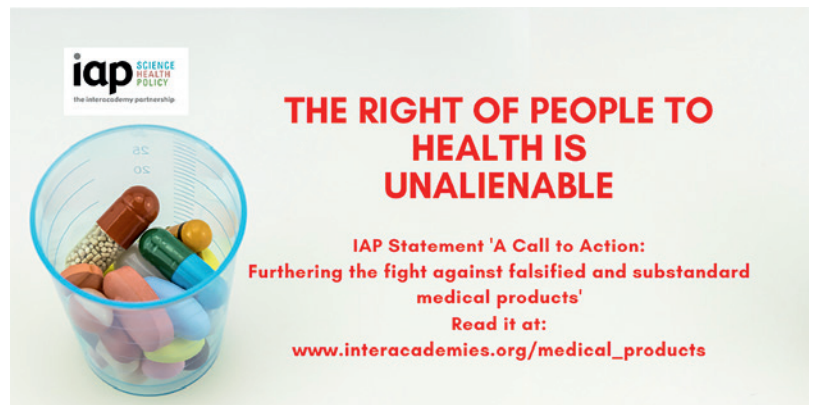
The session put in the spotlight regional perspectives on this issue and discussion with the audience helped ensure that a wide range of inputs are being captured by the project, also providing national, regional and global perspectives in preparation for the United Nations Framework Convention on Climate Change (UNFCCC) forthcoming COP 26.

The Sustainable Health Equity Movement (SHEM)

On 21 April 2020, IAP was one of a number of signatories to an Open Letter to H.E. Mr. António Guterres, Secretary-General of the United Nations (UN). The letter called for a comprehensive, global ethical response to the pandemic, based on the principle of equity to support for the most vulnerable populations worldwide, in addition to voicing strong support for the actions of the UN and WHO's leadership in combating the COVID-19 pandemic.

As a follow-up to this letter, on 2 July, IAP President Volker ter Meulen spoke alongside the WHO Director-General Tedros Adhanom Ghebreyesus and others at the launch of the Global Sustainable Health Equity Movement (SHEM), a consortium that emerged from the signatories to the original letter. Michelle Bachelet, the UN High Commissioner for Human Rights, also provided a supportive video message for this launch event.

The SHEM movement grew out of the concerns of more than 160 global, regional and national entities, representing around 20 million professionals and more than 500 advocates for the right to health, including former heads of state and former ministers of health. The Interim Steering Committee for the movement included the letter drafting and coordination team, IAP, the World Federation of Public Health Associations (WFPHA), the Latin American Alliance of Global Health (ALASAG), the



World Federation of Critical Care Nurses (WFC-CN), the World Medical Association (WMA), and the International Association of National Public Health Institutes (IANPHI).

As the global fight against the SARS-CoV-2 virus continues, it is clear that the virus is affecting different sectors of society in different ways: very often it is the poor, disenfranchised and minority populations that are affected disproportionately. While universal healthcare, along with other policy responses such as temporary financial support, have sought to address these issues, the underlying social determinants of health often remain – and will continue to do so unless specific action is taken.

In this regard, WHO – in collaboration with the SHEM initiative – sought submissions of case studies that illustrate attempts to reduce inequities caused by COVID-19. IAP played a key role in developing and disseminating this call, collecting submissions and organising the review process. The best and most impactful studies from around the world will be published in a special collection.

IAP also offered SHEM interim support in terms of communication activities and administrative issues.

For additional information on SHEM, visit www.sustainablehealthequity.org

Fighting falsified and substandard medical products

Falsified and substandard medical products – products such as vaccines, medical devices and veterinary products that are ‘fake’ or of poor quality – are an increasing global scourge that threaten life, health and security.

Under the umbrella of IAP, medical, scientific and engineering academies from around the world urged political decision-makers at all levels, in concert with regional and international organisations, to work with medical product

Falsified and substandard medicines have been a long-standing concern, yet no comprehensive, well-resourced and sustained international campaign has been organized and waged.



regulatory authorities, national and international law enforcement agencies, manufacturers, importers, distributors, health professionals and patients to solve this urgent issue.

The IAP Statement 'A Call to Action: Furthering the fight against falsified and substandard medical products' supports the call for a comprehensive, well-resourced, international effort to address this devastating problem. The Statement was officially launched at the EuroScience Open Forum (ESOF), the biennial, pan-European, science conference dedicated to scientific research and innovation, that in 2020 took place in Trieste, Italy, on 2-6 September (see page 10).

It is difficult to give precise numbers, but it appears that in many low-income countries a large proportion of the medical products available are falsified or substandard. Estimates of

20-30% in some African and Asian countries seem realistic. Some estimates for particular products are even higher, including an extremely worrisome 30-50% for anti-malarial drugs in south-east Asia. Of note, some 50% of all reports of substandard and falsified medicines received by the WHO Global Alert system are from sub-Saharan Africa, and 80% of these are for essential medicines like anti-malarials and antibiotics.

High-income countries are also impacted. For example, in the United States, several instances of falsified drugs are detected each year. The US Food and Drug Administration (FDA) has launched its own alert system, publishing these cases to warn the public. In Europe, a link has been established between unregulated distribution chains and the number of falsifications detected. Some 50% of the products proposed for sale on the internet are believed to be false.

"The right of people to health is unalienable: manufacturing, carrying, stocking and selling falsified and substandard medical products, including drugs, vaccines, medical devices, and other medical products are crimes. Due to their severe consequences on public health and individual healthcare, these crimes must be prosecuted and punished to the fullest extent possible," said Yves Juillet, member of the French National Academy of Medicine, who co-chaired the working group responsible for preparing the statement.

Social media-friendly image released with the IAP Statement 'A Call to Action: Furthering the fight against falsified and substandard medical products'.

iap SCIENCE HEALTH POLICY
the interacademy partnership

BUYING PRESCRIPTION MEDICINES ONLINE? DO IT ONLY THROUGH CERTIFIED INTERNET PHARMACIES

IAP Statement 'A Call to Action: Furthering the fight against falsified and substandard medical products'

Read it at:
www.interacademies.org/medical_products



Urban Health and Wellbeing

Cities are now the dominant human habitat and for the foreseeable future most population growth will be in urban areas. By 2050 over 68% of the world’s population will live in cities. While urbanisation has contributed to overall declines in poverty, ongoing and emerging challenges put the health and well-being of people in cities at risk. Therefore, a better understanding of the linkages, dynamics and complexities of urban environments is needed.

To address these issues, IAP continues its engagement with the International Science Council (ISC) and the International Society for Urban Health (ISUH) in an Urban Health & Wellbeing programme that proposes a new conceptual framework for considering the multi-factorial nature of both the determinants and the manifestations of health and well-being in urban populations.

In 2020, IAP President Depei Liu was appointed as IAP representative to the Steering Committee of the Urban Health and Wellbeing programme, and three IAP-nominated experts were appointed to the programme’s Scientific Committee: IAP Young Physician Leaders alumnus Suraj Bhattarai (Nepal Academy of Science & Technology), Akinyinka Omigbodun (Department of Obstetrics & Gynaecology, University College Hospital, Ibadan, Nigeria), and Paulo Saldiva (Brazilian National Academy of Medicine).

As explained by Franz Gatzweiler, Executive Director of ISC’s Global Science Programme on a Systems Approach to Urban Health and Wellbeing, in one the IAP Urban Health videos available on the IAP YouTube channel, “As the global health emergency triggered by the COVID-19 pandemic has made it clear, urban health is systemically relevant and critically linked to social, economic and ecological systems in all countries of the world.” ■

Urban environments are important determinants of human health.

Science Education and Science Literacy

One of IAP’s major priorities is to help build a scientifically literate global society. The IAP Science Education Programme (SEP), launched in 2003, implements projects to reform and develop science education on a global scale, especially in primary and secondary schools, with a pedagogy based on inquiry based science education (IBSE) – or “learning by doing”.

The Global Council of experts of IAP’s Science Education Programme (SEP), chaired by Wafa Skalli (Morocco), defines and implements annual activities of the SEP on global and regional scales.

In 2020, the Council’s priority focused on promoting the idea of establishing ‘Centres for Science and Technology’ in Africa. Such centres would provide space for hands-on science exhibits as well as multimedia displays and workshop spaces for teacher training and the engagement of schoolchildren. While they are commonplace in many countries, they are few and far between in Africa, with 33 of the 41 located in South Africa.

As explained by Skalli, “While science museums and science centres play an essential role in promoting science literacy and a ‘culture of science’, the emphasis that governments place on science museums and science centres around

the world varies quite dramatically, and this has resulted in quite an unbalanced distribution of them.”

A working group of expert members from academies was constituted with the objective of guiding the creation of five such centres, ideally within the next three to four years.

Piloting the Fusion of Civilisations Education Curriculum in Pakistan

In 2020, the IAP SEP published ‘One Belt One Road (OBOR): Fusion of Civilisations Education Curriculum’. Its aim is to help school children across many Asian and African countries understand the contributions that their cultures and civilisations have provided to scientific thinking.

The curriculum highlights the different aspects of ancient scientific discoveries along the Belt and Road countries by employing an IBSE approach that not only aims at promoting science education, but also focused on water resources, the Land and Maritime Silk Roads, and architecture.

In January 2020, the students of IBA Public School Sukkur in Pakistan tested parts of the curriculum by engaging in hands-on activities. An interactive session allowed students to explore fundamental concepts and find common themes, formulate questions, and analyse both the need for and development process of a water storage tank.

This activity was part of a 5-day capacity building workshop on IBSE organised under the framework of Belt and Road International Science Education Coordinating Committee (BRISSECC). The workshop took place on 20-

What does the InterAcademy Partnership (IAP) mean by Inquiry-Based Science Education (IBSE) for students? It can be expressed in terms of the process and outcomes of learning about the world around them.



24 January 2020 in Sukkur, Pakistan, and was jointly organised by the ECO Science Foundation (ECOSF), which is represented on the IAP SEP Global Council, and Sukkur IBA University, and was supported by Children and Youth Science Centre (CYSC) of China Association for Science and Technology (CAST).

Food! and COVID-19! teaching guides

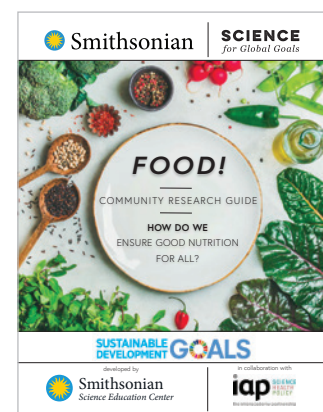
Also represented on the IAP SEP Global Council is the Smithsonian Science Education Center (SSEC). Together with IAP, which supplies role-model scientists and expert reviewers, SSEC released the second in its series of ‘Science for Global Goals’ community research guides, this one on ‘Food! How do we ensure good nutrition for all?’

As with the first in the series, ‘Mosquito! How can we ensure health for all from mosquito-borne diseases’, the guide is broken down into easy-to-follow modules with information and advice for teachers on how to implement the IBSE activities. ‘Food!’ itself is divided into seven sections that guide the teachers and students through the ideas of balanced nutrition, access and storage, cooking and preparation, as well as food security. The final section focuses on a

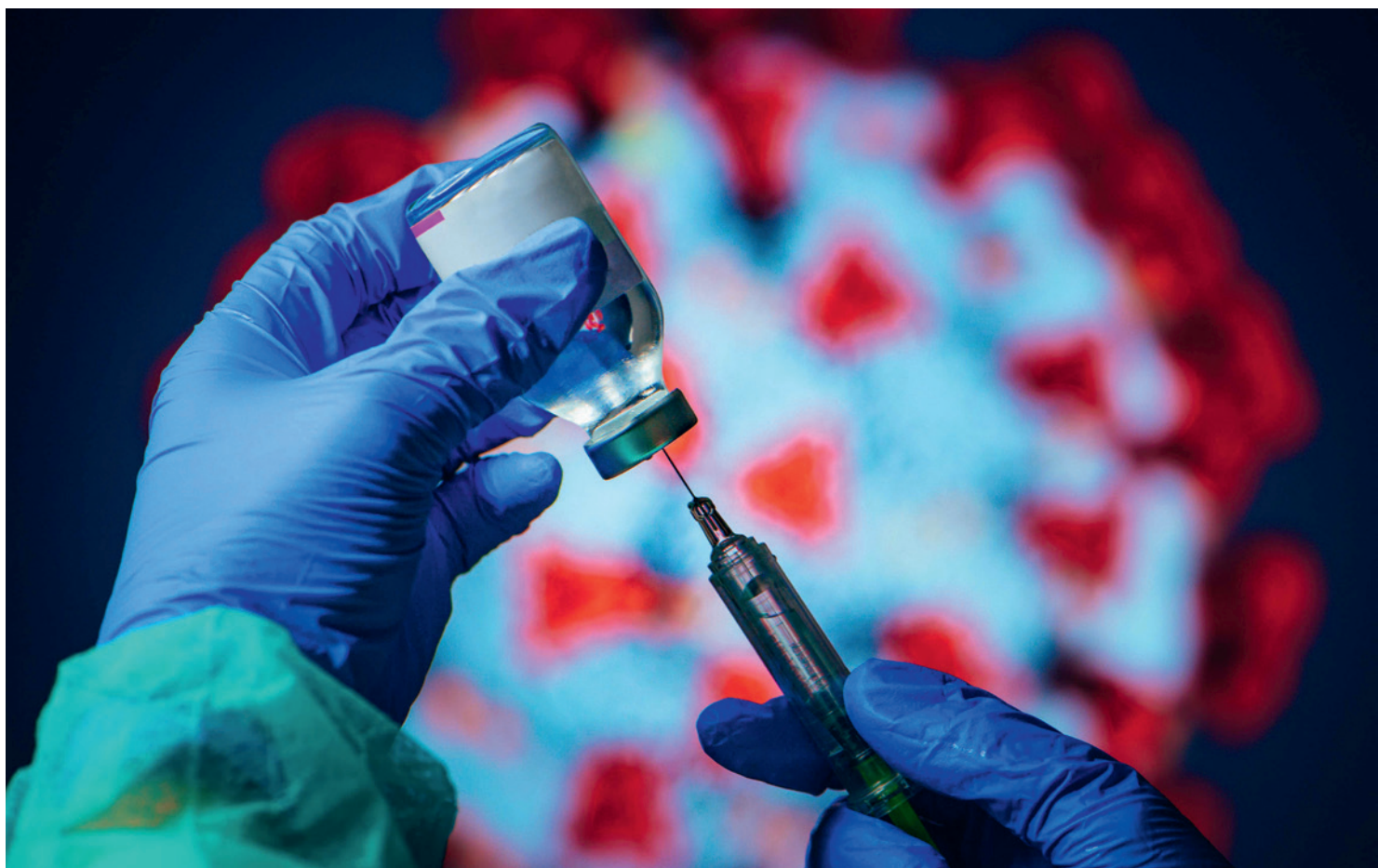
research project that encourages teams of students to develop a local Community Action Plan that lays out the actions the team thinks people in their own community need to take, as well as a communications plan on how to share the information with local community members.

In response to the global pandemic, the SSEC, in collaboration with WHO and IAP also developed ‘COVID-19! How can I protect myself and others?’, a rapid-response guide for youth ages 8–17. This guide aims to help young people understand the science and social science of COVID-19 as well as help them take actions to keep themselves, their families and communities safe.

Through a set of seven cohesive student-led tasks, participants engage in the activities to answer questions previously defined by their peers. The questions explore the impact of COVID-19 on the world, how to practice hand and respiratory hygiene and physical distancing, and how to research more information about COVID-19. The final task teaches youth how they can take action on the new scientific knowledge they learn to improve their health and the health of others. The guide also includes updated research, activities, quotes from sci-



These Smithsonian Science for Global Goals community research guides use the United Nations Sustainable Development Goals (SDGs) as a framework to focus on sustainable actions that are defined and implemented by students.



entists and frontline public health officials, and physical and emotional safety tips on COVID-19 while integrating concepts of IBSE with social and emotional learning and civic engagement.

“It is so important for children, wherever they are in the world, to develop their scientific understanding and rational thinking,” said IAP President Volker ter Meulen on the release of the curriculum, adding that “only by being able to make rational decisions based on the best science and evidence can any of us adjust our behaviour to keep ourselves and our families safe from infections such as COVID-19.”

“In 2005, shortly before flying to Thailand for a holiday with her parents, a 10-year-old had

“Then, they received a grant to break every lesson down into short videos, using the ‘Discover, Understand, Act’ framework from the module, and distributed it through WhatsApp so that their network of educators could share the material with students in their own communities, and parents and families,” explained Carol O’Donnell, SSEC director and member of the IAP SEP Global Council.

Guillermo Fernandez, member of the INNOVEC board, highlighted the importance of the COVID-19 module as a wonderful example of how science education can be relevant to manage one of the worst human problems in decades.

The guide was also put in the spotlight by IAP Coordinator Peter McGrath, who joined the ‘Scientific Prevention and Control against COVID-19’ session of the 2020 World Conference on Science Literacy and presented on ‘A COVID-19 curriculum for African schools: how a teaching resource can help fighting the pandemic’.

This event was organised by the China Association for Science and Technology (CAST) and supported by the United Nations Educational, Scientific and Cultural Organization (UNESCO), ISC, the World Federation of Engineering Organizations (WFEO), and The World Academy of Sciences (TWAS). ■

Primer webinar para el análisis del

PROYECTO PARA LA IMPLEMENTACIÓN DEL MÓDULO DIDÁCTICO:

¡COVID-19! ¿Cómo puedo protegerme a mí mismo y a los demás?

Viernes 7 de agosto 2020

Organizan:

INNOVEC

FRESNILLO

Smithsonian SCIENCE

¡COVID-19!

¿Cómo puedo protegerme a mí mismo y a los demás?

Smithsonian Science Education Center iap

‘COVID-19! How Can I Protect Myself and Others’ has made its way to students in Mexico.

studied tsunamis with her geography teacher. As she watched the waves begin to recede, she was able to warn her family and other people that the beach was about to be struck by a tsunami, saving them. Her story shows that young people can use their knowledge to protect themselves and others, and that’s exactly what we hope this new publication will achieve,” added Wafa Skalli, Chair of the IAP SEP Global Council.

A group of nine IAP Young Physician Leaders (YPL, see page 23) alumni – Omary Mussa Chillo, Amarjargal Dagvadorj, Yangmu Huang, Dipendra Khatiwada, Jaifred Lopez, Atiya Mosam, Julio Muñoz, Nathaniel Orillaza and Trisha Peel – served as technical reviewers of this publication along with other experts and medical doctors. Like all IAP resources for teachers, the guide is free to download, and is now available in more than 20 languages.

During 2020, team members of INNOVEC (*Innovación en la Enseñanza de la Ciencia*), Mexico, supported SSEC staff to provide a Spanish language webinar for teachers and students in Latin America and the US to support the implementation of this hands-on activity guide with young people in their own communities.

Supporting Young Scientists, Young Physicians and Refugee and Displaced Scientists

IAP has a long-standing track record of action in support of young medical doctors and scientists, and is part of a new initiative that advocates for and will contribute to a coordinated response to support scientists who are displaced by war, violence and other crises.

In November 2019, IAP joined forces with the Global Young Academy (GYA) and the Hungarian Academy of Sciences to co-host the latest in a series of IAP-GYA Science Leadership Workshops at the World Science Forum (WSF) in Budapest, Hungary.

More than 40 excellent young scientists from around the world convened in Budapest not only to address questions of ethics in science, but also to learn skills and creative approaches towards problem-solving. A spin-off of their contributions during the workshop was an ad hoc collaboration to write and produce the ‘S.O.S. Booklet for Global Young Scholars’, which was

subsequently published by IAP and the GYA. IAP Young Physician Leader (YPL; see page 45) alumna Biljana Gjoneska, a research associate at the Macedonian Academy of Sciences and Arts, was one of the core group that guided the production of the booklet

In the framework of the booklet “the current obstacles in ethics and science are faced as challenges, while the focus is primarily on the solutions rather than the problems,” explained Gjoneska, concluding that the document will thus “serve as a strong testament to the power of youth and action, encouragement and education”.



The first meeting of the IAP Young Physician Leaders Alumni Steering Committee.

The first IAP YPL Global Ward Round took place on Zoom.

IAP YOUNG PHYSICIAN LEADERS (YPL)

GLOBAL GRAND ROUND ON COVID-19

26 JUNE 2020, 11:00-13:00 (GMT)




PRESENTATIONS: ATIYA MOSAM (SOUTH AFRICA), RAYMOND FRANCIS SARMIENTO AND JAIFRED LOPEZ (PHILIPPINES), AMARJARGAL DAGVADORJ (MONGOLIA), GUILIO STEFANINI (ITALY), SIHAM CHAFAI (MOROCCO), PARAMDEEP SINGH (INDIA), FONTHIP WATCHARAPORN (THAILAND), SURAJ BHATTARAI (NEPAL), AND MARY ASHINYO (GHANA).

Join at tinyurl.com/IAPYPLCOVID



“We hope that the booklet will inspire many forthcoming generations of scientists and instigate positive societal changes,” she added.

Young Physician Leaders

The global pandemic that struck our societies in 2020 meant that the annual Young Physician Leaders (YPL) leadership training workshop session at the World Health Summit in Berlin was postponed to 2021. Likewise, a planned 10th-year alumni reunion at the World Health Assembly in Geneva was postponed. Instead, the YPL programme provided an online peer-support network for its alumni – many of whom have been on the frontline against COVID-19 throughout the pandemic.

To date, the IAP YPL network of alumni includes more than 200 leading medical professionals, under the age of 40, who were nominated by their national academies or members of the M8 Alliance of Academic Health Centres, Universities and National Academies. Their details can be found in the dedicated YPL Directory on the IAP website.

The YPL section on the IAP website, together with a dedicated newsletter for alumni, highlight many of their achievements, from Zaamin B. Hussain’s (UK) inclusion in the Top Young Entrepreneurs of the 2020 Forbes Under 30 List, to the recognition by the *Académie de Stanislas* of Héléne Rossinot (France) for her book *Aidants, ces invisibles* (‘Caregivers: the invisibles’), Edsel Salvana’s (the Philippines) election as a TED2020 Senior Fellow, and Fabien Vincent’s (Australia) award of a National Health & Medical Research Council Investigator Grant by the Australian Government.

On 26 June 2020, YPL alumni hosted a Global

Ward Round. The engagement centered around country responses to COVID-19 and presentations were made by YPLs from Ghana, Italy, India, Mongolia, Morocco, Nepal, Philippines, South Africa and Thailand. Participants included fellow IAP alumni as well as other interested participants from Africa, the Americas, Asia, and Europe. Participants found the inputs from presenters very useful and were interested to see how various country responses played out. There was a great sense of sharing, learning, camaraderie and connection, which these health workers found especially important in these trying times.

“This [event] raised much interest in continued alumni engagement on both clinical as well as leadership and professional development activities,” explained IAP YPL alumna Atiya Mosam. “As a result, an alumni committee was formed consisting of alumni who have all volunteered their time and energy to establishing a sustainable committee with activities to bolster engagement, learning and networking across the various YPL cohorts.”

The current committee consists of the following members: Atiya Mosam (South Africa, 2019 cohort) as chair, Mary Ashinyo (Ghana, 2016), Suraj Bhattarai (Nepal, 2016), Omary Chillo (Tanzania, 2017), Biljana Gjoneska (Macedonia, 2011), Dipendra Khatiwada (Nepal, 2018), Jaifred Lopez (Philippines, 2019), Juan Carlos Nuñez-Enriquez (Mexico, 2016) and Taophee Rabi (Nigeria, 2012). The committee members meet on a monthly basis to discuss how best to foster cooperation among alumni, increase recognition of the programme, as well as how to transfer knowledge and experience to other aspiring physician leaders.



Science In Exile

The world is currently witnessing the highest numbers of forcibly displaced people on record. According to the United Nations High Commissioner for Refugees (UNHCR), by the end of 2020, 82.4 million persons worldwide had been forcibly displaced.

These displacements are a result of persecution, conflict, violence, human rights violations and environmental degradation, including caused by climate change. Among these record numbers of displaced people are scientists, researchers, engineers, medical professionals and other highly-trained individuals with technical qualifications – as well as those undergoing PhD studies. Countries such as Iraq and Syria, which once had well established science institutes and systems, have seen their science infrastructure largely dismantled by conflict and violence. Two-thirds of the displaced migrants come from just five countries, including some that have invested little in their national science systems, such as Afghanistan and South Sudan. In these instances, the loss of any trained expertise and teaching experience from a limited pool can be particular damaging.

In the light of these challenges, a project on refugee and displaced scientists was established by The World Academy of Sciences (TWAS) in partnership with IAP and the International Science Council (ISC) under the umbrella of Science International. The project aims to develop a cohesive and coordinated response that will assist scientists who are either at-risk or have

been forced to leave their home countries due to a crisis of one form or another.

In 2020, the project worked towards forming a network and building an advocacy campaign to bring together scientists, policy-makers and organizations to address the needs of refugee and displaced scientists.

The involvement of refugees and displaced scientists is central to the project's success, according to Erin Buisse, the project's lead consultant. The first workshop of the initiative took place virtually in October 2020, with speakers and discussants from a number of concerned stakeholder organizations in an effort to identify the priorities and objectives of a cohesive strategy and plan to move forwards. The workshop also included the voices of refugee and displaced scientists, who have also been integrated into a series of working groups to further develop aspects of the strategy.

The strategic framework that has been developed proposes as the main objectives of the project: to collect, develop, and share information and knowledge to inform policy, practice, and parties of interest; to raise global awareness and advocate for improved measures to protect and support displaced and refugee scientists; and to strengthen capacity and coordination. ■

A frame from the TWAS documentary *Science In Exile*, a film that explores the story of four researchers who were forced to suspend their work and flee conflict.

Biosecurity and Responsible Research

The IAP Biosecurity Working Group comprises a group of international experts who tackle emerging issues in biosecurity and promote responsible research practices by convening international workshops, publishing reports, and liaising with key stakeholder communities, including the United Nations' Biological and Toxic Weapons Convention (BWC) and its member states.

A new IAP Biosecurity Working Group (BWG) was established in late 2020 following a process of nomination of suitable experts by member academies. Current BWG members are from Argentina, Brazil, China, Egypt, Georgia, Germany, Ghana, Italy, Pakistan, Philippines, Russia, South Africa, Trinidad & Tobago, the United Kingdom and the United States.

Epidemic preparedness and response

In early 2020 IAP, the UK Academy of Medical Sciences (UKAMS) and the UK Medical Research Council, published 'Interdisciplinary research in epidemic preparedness and response', a workshop report on a topic of high relevance as the world was watching the outbreak of the novel coronavirus unfold.

The report highlights the main issues tackled during a workshop hosted by the three partner

organisations in October 2019 in London, UK. The project was led by a steering committee co-chaired by Jimmy Whitworth FMedSci, London School of Hygiene and Tropical Medicine, appointed by UKAMS, and Rajae El Aouad, Hassan II Academy of Sciences and Technology, Morocco, appointed by IAP. Among other members of the steering committee was Bach Tran, an IAP Young Physician Leaders alumnus.

"The current coronavirus epidemic clearly demonstrates that this publication is very timely. Across four key phases – 'prepare', 'prevent', 'respond' and 'recover' for any potential epidemics, multi- and interdisciplinary cooperation research should be facilitated to meet needs," said Depei Liu, IAP President.

"The recommendations towards multidisciplinary research presented in the report point a way to a safer future for us all," he added.

IAP on DS+

IAP's work on bio-threats was also highlighted by Friends of Europe's Debating Security Plus (DS+), a virtual meeting forum that permits a global whole-of-society consultation and gathers a broad range of ideas to discuss some of the world's most pressing security challenges.

One of the issues DS+ dealt with is 'Hybrid warfare and biological agents – Biothreats and bioterrorism'. Contributing to the discussions, IAP Coordinator Peter McGrath provided an overview of IAP's work in biosecurity.

According to the DS+ report, IAP is "at the forefront of operationalising the promises of the BWC and preventing an unintentional escalation."

Infectious disease outbreaks are seemingly inevitable. However, their impact can be mitigated through better preparedness and more effective responses.





Arctic warming and microbial threats

The US National Academies of Sciences, Engineering and Medicine (NASEM) together with the European Academies' Science Advisory Council (EASAC) and IAP convened a workshop that brought together an interdisciplinary, international group of researchers and public health officials. In November 2019 they met in Herrenhausen, Germany, to explore what is known and what critical knowledge gaps remain regarding existing and possible future risks of harmful infectious agents emerging from thawing permafrost and ice in the Arctic region.

May 2020 saw the publication of the workshop report 'Arctic warming and microbial threats: Perspectives from IAP and EASAC following an international academies' workshop'.

"The issues raised in the recent workshop, and described in the IAP-EASAC Perspective, are vitally important for the Arctic, and to the rest of the world in consequence of changes in the Arctic," explained Robin Fears, Director of EASAC's Biosciences Programme.

Despite the focus on the Arctic, the priorities identified are of great importance for all when tackling infectious disease, whatever its environmental origin.

"This global relevance has become abundantly clear in the months elapsed since the workshop: the COVID-19 pandemic has challenged us all and vastly accentuates the scope of what will continue to be needed to prepare for and respond to pathogens," Fears added.

In an uncertain world, future infectious disease threats are unknown but inevitable. The impacts of COVID-19 on individuals, families, communities, health services and economies are all the more distressing because, in many respects, these challenges were predictable.

One other consistent message that is at the core of IAP's goals, is the responsibility of the scientific community to advise policy-makers and other opinion leaders on the importance of using robust scientific evidence to inform policy options.

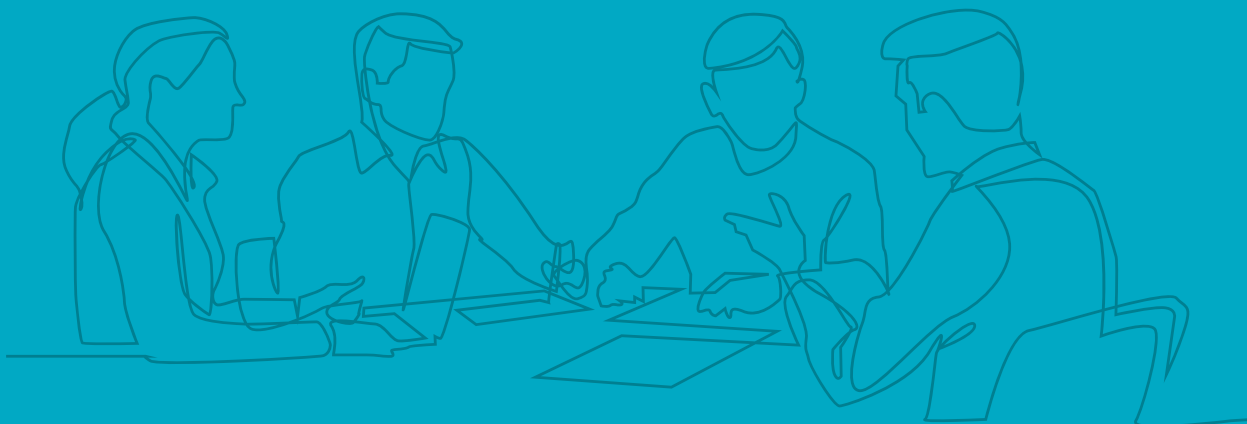
"This is not enough," added Fears, noting that even if the scientific community has long been aware that scientific collaboration is essential, we need to do more to explain that coordination in policy-making between sectors and countries is equally important.

"We must redouble our efforts to urge decision-makers to act on public health in a spirit of global solidarity and in pursuit of equity and sustainability," he concluded. ■

Climate change is warming the Arctic and harmful infectious agents are emerging from thawing ice and permafrost.

Regional Activities

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Regional Networks

The Association of Academies and Societies of Sciences in Asia (AASSA), the European Academies' Science Advisory Council (EASAC), the Network of African Science Academies (NASAC), and the Inter-American Network of Academies of Sciences (IANAS) are the four regional affiliated networks of IAP and are responsible for managing and implementing many IAP-funded projects.

These groupings allow IAP to ensure that its global reports and statements are inclusive and have truly global relevance. At the same time, working within each regional network, academies are able to focus on science policy issues considered to be particularly important in their parts of the world.

2020 was a challenging year for the IAP regional networks: as the world grappled with the global COVID-19 pandemic, they re-evaluated their work plans, re-scheduled or cancelled several activities, and dealt with the repercussions of restrictions on travel restrictions and the shift to online meetings.

Still, they adapted to using video conferencing technologies and continued to ensure the voice of science was heard by all stakeholders, including policy-makers at local, national and international level.

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

In May 2020, the Association of Academies and Societies of Sciences in Asia (AASSA) Special Committee for Women in Science and Engineering (WISE), in partnership with the Australian Academy of Science (AAS), proposed to establish a database of women in science, technology, engineering, and mathematics (STEM) that would include profiles of women scientists from AASSA member countries. The work would expand on the current STEM Women database (www.stemwomen.org.au) established by AAS to promote gender equity in STEM by profiling women scientists from Australia. Since its launch, the Australian STEM database has grown to host over 3,200 profiles and more than 33,000 searches have been performed.

The aim of expanding the database is to make the profiles of women scientists from AASSA member countries available, which experience from AAS has shown provides unique benefits including, but not limited to, invitations to speak at conferences, participate in committees and on boards, receive award nominations, media opportunities, and to act as a mentor to others.

This project will allow STEM Women profiles to be created by women in the AASSA region, including young researchers, members of young academies and the Global Young Academy, among others. It will also create a unique webpage for each AASSA member country, and host online the IAP-AASSA publication 'Profiles of women scientists in Asia: their inspirational stories', which was a project of the AASSA-WISE Committee.



STEM Women Asia will provide an online directory of women in Asia and Oceania working in science, technology, engineering and mathematics (STEM).



aassa
THE ASSOCIATION OF ACADEMIES
AND SOCIETIES OF SCIENCES IN
Asia

- Valerie Plainemaison, European Federation of Waste Management and Environmental Services (FEAD)
- Michael Norton, EASAC Environment Programme
- Annemiek Verrips, EASAC Expert Group

Moderator: Tracey Elliott, EASAC Strategy Advisor

Wednesday, 11 March 2020



The launch of the EASAC report 'Plastic in the Circular Economy' in Brussels, Belgium.

European Academies' Science Advisory Council (EASAC)

The launch of the EASAC report 'Plastic in the Circular Economy' that took place in early March in Brussels, was practically the last public presentation in the capital of Belgium before it entered several months of shut down due to COVID-19.

Despite obstacles created by the pandemic, EASAC's output in 2020 has been substantial, including the first Commentary produced jointly by EASAC's three core Programmes: 'How can science help to guide the European Union's green recovery after COVID-19?', published in May 2020.

Other key outputs include commentaries on 'The regulation of genome-edited plants in the European Union' and on 'Hydrogen and synthetic fuels', the report 'Challenges and potential in regenerative medicine' and the perspective 'Towards a sustainable future: transformative change and post-COVID-19 priorities'.

Furthermore, 'Understanding and Responding to Global Health Security Risks from Microbial Threats in the Arctic' - the joint proceedings of an earlier workshop with IAP and the National Academies of Sciences, Engineering, and Medicine (NASEM) - were published in 2020. EASAC also submitted the briefing 'Climate change and

its impact on food and nutrition security' to the European Parliament.

Through the dissemination of these outputs, EASAC made substantial contributions to important policy debates. One important dissemination channel was again the publication of study findings in the peer-reviewed scientific literature. In 2020, there were nine articles in high-impact journals, such as *The Lancet* and *Nature*, that stemmed directly from EASAC's science policy publications.

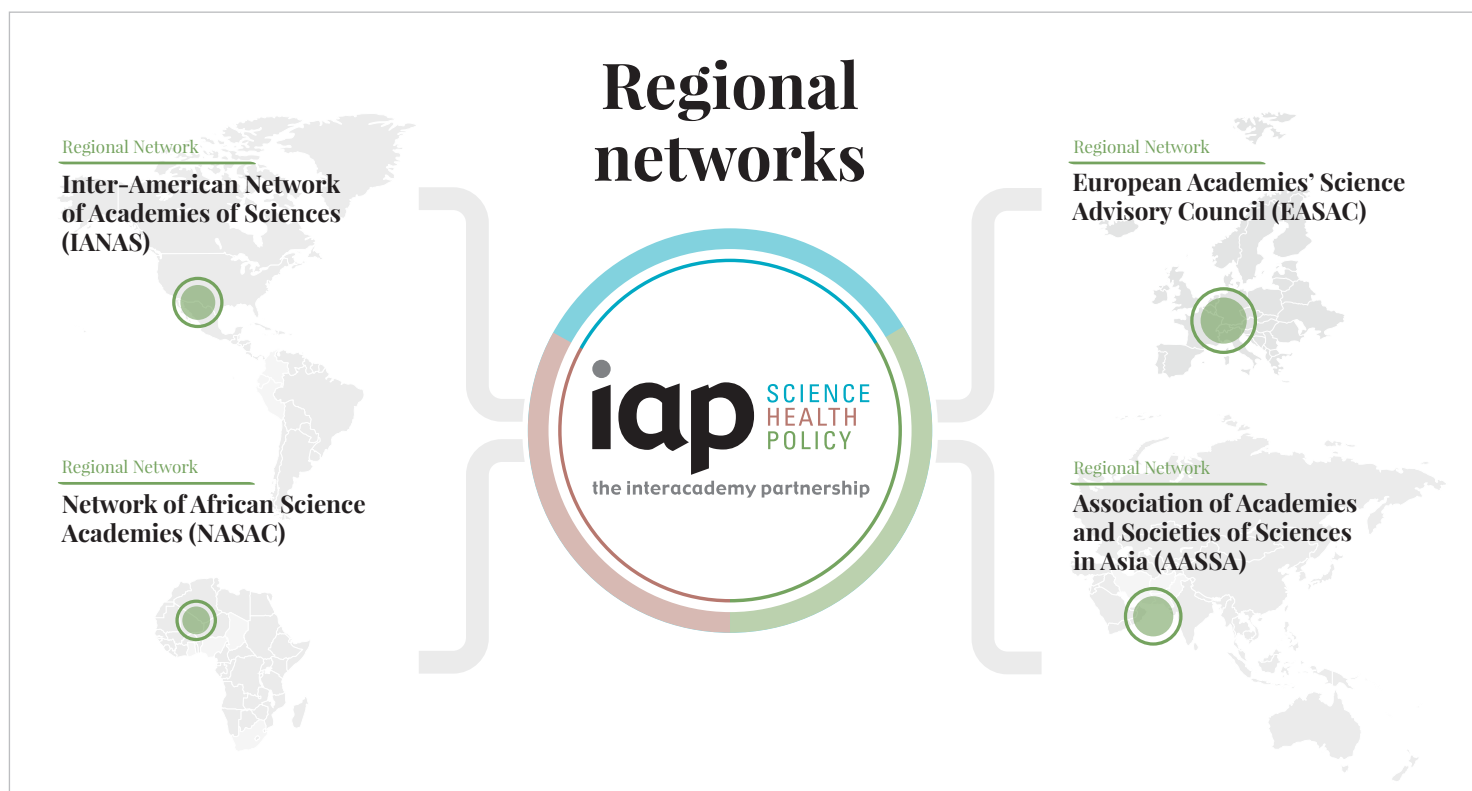
EASAC also updated the findings of and followed-up several of its earlier studies, most notably on forest bioenergy, food and nutrition security and agriculture, and climate change and health (see pages 44-47).

Aware of the important role of academies in serving society during the COVID-19 crisis, EASAC also started a series of webinars on science communication in the context of the pandemic.

European Academies

ea sac

Science Advisory Council



Looking back, 2020 not only demonstrated to both policy-makers and civil society across Europe that science plays a vital role in rigorous policy-making, but also the interest in the important role of science academies in providing independent and evidence-based advice.

Inter-American Network of Academies of Sciences (IANAS)

In 2020, IANAS carried out many activities related to the COVID-19 crisis. The virtual 'IANAS videoconference on COVID-19' was held on 1 June with close to 60 attendees, where experts from different countries in the Americas shared information and data on how they were dealing with the pandemic. A recording of the videoconference is available on the IANAS website.

IANAS also launched a 'Statement on COVID-19', supported by 19 IANAS member academies, which was sent to the United Nations.

Furthermore, on 20–21 August the event 'Nicaragua International Seminar on COVID-19' was organised by Jorge Huete Pérez and held in collaboration with the Nicaraguan Academy of Sciences. During the two-day event, approximately 20 scientists from Nicaragua and from IANAS member academies shared their experiences and recommendations on the management of the COVID-19 pandemic.

During 2020, three Executive Committee (EC) meetings were held to discuss IANAS's activi-

ties, budget, and the launch of the new website.

The first EC meeting was held in Rio de Janeiro, Brazil, on 2–3 February. Among the activities discussed were the ongoing IAP 'Climate Change and Health' project (see page 15) and IANAS involvement in the 'International Year of Basic Science for Development'. Furthermore, the Brazilian Academy of Medicine was approved as an Observing Member of IANAS, becoming the first academy of medicine integrated into the regional network.

The second EC meeting, held virtually on 6 August, coincided with the launch of the new IANAS website.

During the final EC meeting of the year, held on 10 November, discussed a joint proposal from the Latin American Academy of Sciences (ACAL) and the US National Academy of Sciences, Engineering and Medicine (NASEM). With the possibility of financial support for a programme to support early career researchers and graduate students in the Americas, there were discussions on how best to provide access to current cutting-edge science for graduate students and



young researchers in Latin American countries, as well as increase the scientific dialogue and cooperation in the region.

Members of the IANAS Energy Programme working group combined virtual and face-to-face meetings as the first steps in developing the IANAS initiative 'Rethinking Cities'. The outcome of these meetings is being used to develop an ongoing project examining future models of urban development.

During 2020, the Women for Science (Wfs) Programme Focal Points interviewed and wrote up articles on women with a scientific background who have become prominent in other fields. The resulting monograph is being prepared for publication; it will be sent to the member academies for distribution and will also be disseminated online via the IANAS website.

The Science Education Programme is being reactivated following a proposal from the National Academy of Sciences of Argentina. As a first step, a group of experts on STEM (science, engineering, technology and mathematics) education systems in the Americas met virtually four times between September and December. The discussions and exchanges resulted in the decision to prepare a guide for improving the current state of STEM education in the Americas, which is currently in the process of being published.

Finally, the Water Programme Focal Points produced a number of position papers that were published throughout 2020: 'Urban Water Man-

agement: Brazil-EU Cooperation', 'Urban Water Management Policy Brief', 'Monitoring Wastewater for Assessing Community Health in Cities: Perspectives and a proposal', 'The Challenges of Managing the Urban Waters of the Americas', 'Water Resources of Nicaragua and COVID-19: Between panic and apathy?' and 'Eutrophication: A growing problem in the Americas and the Caribbean'.

Network of African Science Academies (NASAC)

In June, the NASAC Board, chaired by NASAC President Norbert Hounkonnou from the *Académie Nationale des Sciences, Arts et Lettres du Bénin* (ANSALB), held its first meeting since its election in November 2019. They met online to review progress and financial reports of all NASAC's initiatives and discussed the effects of the pandemic on the regional network's activities.

Members of the Board also agreed that NASAC would host a webinar on academies' responses to the pandemic in Africa, which was held on 22 July, and then develop a statement on COVID-19. Another major decision of the Board was for the NASAC secretariat to serve as a liaison office for national young academies in Africa.

The webinar, 'Response of Science Academies to the COVID-19 Pandemic', organised in collaboration with IAP, was attended by some 60 members and staff of academies as well as representatives of national young academies. Experiences from different countries were shared and coping mechanisms for dealing with and overcoming various disruptions were discussed. After the event, NASAC published a full webinar report.

NASAC has entered into partnership with the UN Technology Bank with the aim of establishing science academies in Least Developed Countries in Africa where they do not yet exist. Under the Academy Development Initiative, the NASAC secretariat held seven virtual meetings with scientists in seven countries: Angola Central African Republic (CAR), Chad, Democratic Republic of Congo (DRC), Lesotho, Malawi, and Sierra Leone, with the aim of supporting them to establish national academies. These virtual meetings allowed the invited scientists to consider the framework for establishing an academy as a legal entity and to consider its statutes, membership and initial leadership.

On 14-15 January 2020, NASAC held a meeting in Nairobi, Kenya, examining its Science Education Programme and Sustainable Development

One of the virtual events organised by IANAS in 2020.



The Academy of Sciences of Nicaragua and the InterAmerican Network of Academies of Sciences invites you to

International virtual Seminar on COVID-19 in Nicaragua

Managua, August 20 & 21, 2020
9:00 - 11:00 AM

Online access by Zoom

This event will be held in English
Please confirm your participation to ACN Secretariat
academiaciencianicaragua@gmail.com
+505 85907010



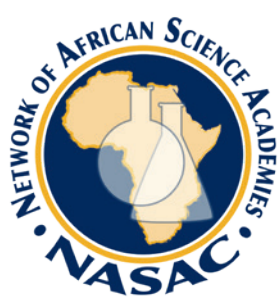


The NASAC Science Education Programme and Sustainable Development Goals (SEP & SDGs) meeting in Nairobi, Kenya.

Goals (SEP & SDGs). The aim of the meeting was to revamp the Science Education Working Group and discuss the future science education activities that NASAC will implement. Participants also agreed that NASAC should conduct a survey on the state of science education in Africa.

Since November 2018, NASAC has been part of a consortium of 35 organizations implementing the Long-term Europe-Africa Partnership for Food and Nutrition Security and Sustainable Agriculture (LEAP4FNSSA) project. In 2020, NASAC constituted and convened a team of experts that will lead the project’s Scientific Sorting House mechanism on FNSSA. The six experts were drawn from Africa and Europe through NASAC and EASAC respectively. On 13 August, NASAC convened the first virtual workshop of experts, an event that allowed them to deepen their knowledge of the LEAP4FNSSA Project and the African Union-European Union (AU-EU) Partnership. The invited experts also gained a better understanding of the programme and innovation management cycle (PIMC) metagovernance model, the theory of change and impact pathways (TCIP) and the scientific sorting house concept.

On 18 September, NASAC and the Organization of Educational Cooperation (OEC) held a virtu-



al meeting on ways and means of encouraging policymakers to embrace the Universal Declaration of Balanced and Inclusive Education. It was attended by the OEC’s Secretary General Elect, Manssour Bin Mussallam, and NASAC’s President and Executive Director. On the agenda were discussions on the role of science academies in addressing techno-digital and ur-

ban-rural divides, democratising knowledge and informing policy. Finally, the 16th meeting of the NASAC General Assembly was held virtually on 19 November. Representatives of more than 20 member academies participated in the meeting to review the 2020 activities and financial report and to discuss priorities for 2021. The main point of discussion was how best NASAC could address and enhance its sustainability in the longer-term – a critical reflection considering that 2021 marks NASAC’s 20th anniversary. ■

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Members of the InterAcademy Partnership

1. Afghanistan Academy of Sciences
2. Albanian Academy of Sciences
3. Algerian Academy of Sciences and Technology
4. *Academia Nacional de Ciencias Exactas, Fisicas y Naturales de la Republica Argentina*
5. *Academia Nacional de Ciencias, Cordoba, Argentina*
6. *Academia Nacional de Medicina de Buenos Aires, Argentina*
7. National Academy of Sciences of Armenia
8. Academy of Medical Sciences of Armenia
9. Australian Academy of Science
10. Austrian Academy of Sciences
11. Bangladesh Academy of Sciences
12. National Academy of Sciences of Belarus
13. Royal Academies for Science and the Arts of Belgium
14. Belgian Royal Academy of Medicine
15. Benin National Academy of Sciences and Arts
16. *Academia Nacional de Ciencias de Bolivia*
17. *Academia Boliviana de Medicina*
18. Academy of Sciences and Arts of Bosnia and Herzegovina
19. Brazilian Academy of Sciences
20. *Academia Nacional de Medicina, Brazil*
21. Bulgarian Academy of Sciences
22. National Academy of Sciences of Burkina Faso
23. Cameroon Academy of Sciences
24. Royal Society of Canada
25. Canadian Academy of Health Sciences
26. *Academia Chilena de Ciencias*
27. *Academia Chilena de Medicina*
28. Chinese Academy of Sciences
29. Chinese Academy of Engineering
30. *Academia Sinica, Taiwan, China*
31. Colombian Academy of Exact, Physical & Natural Sciences
32. *Academia Nacional de Medicina de Colombia*
33. Croatian Academy of Arts and Sciences
34. Croatian Academy of Medical Sciences
35. Cuban Academy of Sciences
36. Czech Academy of Sciences
37. Royal Danish Academy of Sciences and Letters
38. *Academia de Ciencias de la Republica Dominicana*
39. Academy of Sciences of Ecuador
40. Academy of Scientific Research and Technology, Egypt
41. Estonian Academy of Sciences
42. Ethiopian Academy of Sciences
43. Council of Finnish Academies
44. *Académie des Sciences, Institut de France*
45. *Académie Nationale de Médecine, France*
46. *Académie des Technologies, France*
47. Georgian National Academy of Sciences
48. Georgian Academy of Medical Sciences
49. Union of German Academies of Sciences and Humanities
50. German National Academy of Sciences, *Leopoldina*
51. Ghana Academy of Arts and Sciences
52. Academy of Athens, Greece
53. *Academia de Ciencias Medicas, Fisicas y Naturales de Guatemala*
54. National Academy of Sciences of Honduras
55. Hungarian Academy of Sciences
56. Indian National Science Academy
57. National Academy of Medical Sciences, India
58. Indonesian Academy of Sciences
59. Academy of Sciences of the Islamic Republic of Iran
60. Iranian Academy of Medical Sciences
61. Royal Irish Academy
62. Israel Academy of Sciences and Humanities
63. *Accademia Nazionale dei Lincei, Italy*
64. *Accademia Nazionale di Medicina, Italy*
65. Science Council of Japan
66. Royal Scientific Society, Jordan
67. National Academy of Sciences of the Republic of Kazakhstan
68. Kenya National Academy of Sciences
69. Korean Academy of Science and Technology
70. National Academy of Medicine of Korea
71. National Academy of Sciences, Republic of Korea
72. Kosova Academy of Sciences and Arts

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| <p>73. National Academy of Sciences of the Kyrgyz Republic</p> <p>74. Latvian Academy of Sciences</p> <p>75. Lebanese Academy of Sciences</p> <p>76. Lithuanian Academy of Sciences</p> <p>77. Macedonian Academy of Sciences and Arts</p> <p>78. Madagascar's National Academy of Arts, Letters and Sciences</p> <p>79. Academy of Sciences Malaysia</p> <p>80. Mauritius Academy of Science and Technology</p> <p>81. Mexican Academy of Sciences</p> <p>82. National Academy of Medicine of Mexico</p> <p>83. Academy of Sciences of Moldova</p> <p>84. Mongolian Academy of Sciences</p> <p>85. Montenegrin Academy of Sciences and Arts</p> <p>86. Hassan II Academy of Science and Technology, Morocco</p> <p>87. Academy of Science of Mozambique</p> <p>88. Nepal Academy of Science and Technology</p> <p>89. Royal Netherlands Academy of Arts and Sciences</p> <p>90. Royal Society of New Zealand - <i>Te Apārangi</i></p> <p>91. Nicaraguan Academy of Sciences</p> <p>92. Nigerian Academy of Science</p> <p>93. Norwegian Academy of Sciences and Letters</p> <p>94. Pakistan Academy of Sciences</p> <p>95. Palestine Academy for Science and Technology</p> <p>96. <i>Academia Nacional de Ciencias del Perú</i></p> <p>97. <i>Academia Nacional de Medicina del Perú</i></p> <p>98. National Academy of Science and Technology, Philippines</p> <p>99. Polish Academy of Sciences</p> <p>100. <i>Academia das Ciências de Lisboa, Portugal</i></p> <p>101. Romanian Academy</p> <p>102. Academy of Medical Sciences of Romania</p> <p>103. Russian Academy of Medical Sciences</p> <p>104. Russian Academy of Sciences</p> <p>105. Rwanda Academy of Sciences</p> <p>106. <i>Académie des Sciences et Techniques du Sénégal</i></p> <p>107. Serbian Academy of Sciences and Arts</p> <p>108. Singapore National Academy of Sciences</p> | <p>109. Slovak Academy of Sciences</p> <p>110. Slovenian Academy of Sciences and Arts</p> <p>111. Academy of Science of South Africa</p> <p>112. <i>Real Academia de Ciencias Exactas, Físicas y Naturales, Spain</i></p> <p>113. National Academy of Sciences, Sri Lanka</p> <p>114. Sudanese National Academy of Sciences</p> <p>115. Royal Swedish Academy of Sciences</p> <p>116. Swiss Academies of Arts and Sciences</p> <p>117. Academy of Sciences of the Republic of Tajikistan</p> <p>118. Tanzania Academy of Sciences</p> <p>119. Thai Academy of Science and Technology</p> <p>120. Tunisian Academy of Sciences, Letters and Arts <i>Beit al Hikma</i></p> <p>121. Turkish Academy of Sciences</p> <p>122. Uganda National Academy of Sciences</p> <p>123. National Academy of Sciences of Ukraine</p> <p>124. Academy of Medical Sciences, UK</p> <p>125. Royal Society, UK</p> <p>126. US National Academy of Sciences</p> <p>127. US National Academy of Medicine</p> <p>128. National Academy of Sciences of Uruguay</p> <p>129. Uzbekistan Academy of Sciences</p> <p>130. <i>Pontificia Academia Scientiarum, Vatican</i></p> <p>131. <i>Academia de Ciencias Físicas, Matemáticas y Naturales de Venezuela</i></p> <p>132. <i>Academia Nacional de Medicina de Venezuela</i></p> <p>133. Zambia Academy of Sciences</p> <p>134. Zimbabwe Academy of Sciences</p> <p>135. African Academy of Sciences</p> <p>136. Caribbean Academy of Sciences</p> <p>137. European Academy of Sciences and Arts</p> <p>138. Federation of European Academies of Medicine (FEAM)</p> <p>139. Global Young Academy</p> <p>140. Islamic World Academy of Sciences</p> <p>141. Latin American Academy of Sciences</p> <p>142. TWAS, The World Academy of Sciences</p> <p>143. World Academy of Art and Science</p> |
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IAP Financial Summary, 2020

The total amount of funds received (including interest) by IAP Science and IAP Health (via the Trieste secretariat) for activities in 2020 was USD 745,701. With USD 726,381 brought forward from the previous year, this meant an operating budget of USD 1,472,083.

The main contribution was from the Italian Ministry of Foreign Affairs (USD 726,267), with an additional contribution received from the International Science Council.

The total amount of funds received by IAP for Policy (via the Washington DC secretariat) in 2020 was USD 1,051,499. Income primarily came from a grant from the Gordon and Betty Moore Foundation, the US National Academies of Sciences, Engineering and Medicine (NASEM)

as host of the IAP Policy secretariat, and IAP (via the Trieste secretariat).

In addition, it is estimated that member academies and regional affiliated networks contributed a significant amount by providing in-kind support for the organization and hosting of (mostly online) conferences and workshops, the publication of reports, as well as the provision of staff time. They also succeeded to leverage additional funds from various other donors.

In 2020, special mention should be made of the *Accademia Nazionale dei Lincei* (Italy) for offering to host the annual IAP Joint Meeting. Unfortunately, due to COVID-19, the event was eventually transferred online.

IAP Science and IAP Health Financial Summary, 2020

INCOME¹ 2020 (in USD)

Balance brought forward 01.01.2020	726,381.40
1) Ministry of Foreign Affairs, Italy	726,267.50
2) International Science Council, France	4,280.00
3) Interest	15,154.00
TOTAL INCOME	1,472,082.90

EXPENDITURE

2020-2021 biennium (in USD)

	Approved budget	Revised budget	Expenditure 1.1.-31.12.2020
1) Scientific Projects			
1.1) New projects	140,000	187,000	4,950.00
1.1.1) <i>Competitive grants</i>	40,000	107,000	
1.1.2) <i>Support to Science Education Programme</i>	50,000	50,000	4,950.00
1.1.3) <i>Support to Global Young Academy</i>	50,000	30,000	
1.2) Regional Network programmes	520,000	529,393	204,393.00
1.3) Collaboration with IAP-Policy	80,000	80,000	48,000.00
1.4) Fundraising for new activities	62,172	62,172	1,811.16
Sub-total for (1)	802,172	858,565	259,154.16
2) Meetings and conferences			
2.1) Executive Committee meetings/ GA conference/ Travels	100,000	60,000	16,667.99
2.2) Conference for Young Scientists	25,000	25,000	
2.3) Young Physician Leaders	167,107	167,107	32,903.81
2.3.1) <i>World Health Summit workshop</i>	29,611	29,611	10,584.42
2.3.2) <i>World Health Assembly alumni mtg</i>	44,670	44,670	
2.3.3) <i>Web networking</i>	15,000	15,000	
2.3.4) <i>Communication costs</i>	69,999	69,999	22,319.39
2.3.5) <i>Staff cost</i>	7,827	7,827	
Sub-total for (2)	292,107	252,107	49,571.80
3) Publications	30,000	30,000	13,545.10
4) Operational Expenses			
4.1) Staff and Consultant costs	795,000	795,000	365,543.00
4.1.1) <i>General staff costs</i>	560,000	560,000	298,625.26
4.1.2) <i>Strengthening staff cost</i>	235,000	235,000	66,918.24
4.2) Staff travels	20,000	13,000	
4.3) Communications	10,000	10,000	2,095.89
4.4) Office and other supplies	10,000	10,000	5,885.09
4.5) ICTP services	50,000	50,000	25,000.00
Sub-total for (4)	885,000	878,000	398,524.48
Management costs	140,650	141,308	50,455.65
TOTAL EXPENDITURE	2,149,929	2,159,980	771,251.19

Savings on prior years' obligations	25,560.24
Excess (Shortfall) of income over expenditure	726,391.95

Reserve Fund²

Amount available at the beginning of period	177,301.51
Transfer from IAP account	0.00
End of service entitlements	0.00
Reserve Fund balance end of period	177,301.51

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

² The purpose of the Reserve Fund is to cover the end of service entitlements of IAP staff.

IAP Policy Financial Summary, 2020¹

The total amount of funds received by IAP for Policy in 2020 was USD \$1,051,499. Income came from the Gordon and Betty Moore Foundation for the 'Combatting Predatory Journals and Conferences' project, the US National

Academies of Sciences, Engineering and Medicine (NASEM) as host of the IAP Policy secretariat, IAP for Science's contribution for the costs of the InterAcademy Partnership website, and IAP-Policy indirect charges.

INCOME (in USD)	
Beginning Balance	103,941.00
US NASEM contribution	204,477.00
Projects and administration	847,022.00 ²
TOTAL INCOME	1,051,499.00
EXPENDITURES (in USD)	
Project expenses	229,730.00
Operational expenses	
1) Staff salaries	36,101.00
2) Website and public information	22,039.00
3) Non-project travel	0.00
4) Professional fees	37,188.00
5) Miscellaneous	2,431.00
6) Administration	75,647.00
TOTAL EXPENDITURE	403,136.00
Excess (shortfall) of income over expenditure	752,304.00

¹ Sources for report include: Marcum LLP and NASEM finance staff.

² Includes \$799,022 from the Gordon and Betty Moore Foundation for the two-year study, Combatting Predatory Academic Journals and Conferences' and \$48,000 from IAP for Science's contribution to joint operating costs for the secretariat.

Member Contributions

Member Contributions to IAP's Fundraising Campaign and Voluntary Membership Dues (2013–present)

- Australian Academy of Science
- Bangladesh Academy of Sciences
- Council of Finnish Academies
- Georgian National Academy of Sciences (GAS)
- Union of German Academies of Sciences and Humanities
- *Deutsche Akademie der Naturforscher Leopoldina*
- Academy of Athens, Greece
- Israel Academy of Sciences and Humanities
- Korean Academy of Science and Technology (KAST)
- National Academy of Science and Technology, Korea (NAST)
- Hassan II Academy of Science and Technology, Morocco
- Academy of Medical Sciences of Romania
- *Académie National des Sciences et Techniques du Senegal*
- Turkish Academy of Sciences (TÜBA)
- Uganda National Academy of Sciences (UNAS)
- Royal Society, UK
- US National Academy of Sciences (NAS)
- *Academia Nacional de Ciencias del Uruguay*

Project Support

IAP projects are also being implemented by various partners.

The German National Science Academy, Leopoldina, for example, manages funds from the German Federal Ministry of Education and Research for the IAP 'Climate Change and Health' project (see pages 14–16), as well as leading the project on 'Arctic Warming and Microbial Threats' (see page 26).

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

- Depei Liu, China (IAP President and co-chair IAP Health)
- Richard Catlow, UK (IAP President and co-chair IAP Policy)
- Margaret (Peggy) A. Hamburg, USA (co-chair IAP Health)
- Krishan Lal, India (co-chair IAP Science)
- Cherry Murray, USA (co-chair IAP Science)
- Masresha Fetene, Ethiopia (co-chair IAP Policy)

IAP Treasurer:

- Michael T. Clegg, USA

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)
- Christina Moberg, Sweden (European Academies' Science Advisory Council, EASAC)
- Helena Bonciani Nader, Brazil (Inter-American Network of Academies of Science, IANAS)
- Mahouton Hounkonnou, Benin (Network of African Science Academies, NASAC)

IAP Science Executive Committee

- Krishan Lal, India (co-chair)
 - Cherry Murray, USA (co-chair)
 - *Academia Chilena de Ciencias*, Juan A. Asenjo
 - *Académie des Sciences*, France, Olivier Pironneau
 - Academy of the Islamic Republic of Iran, Jafar Towfighi Darian
 - *Accademia Nazionale dei Lincei*, Italy, Gianfranco Pacchioni
 - African Academy of Sciences, Felix Dapare Dakora
 - Australian Academy of Science, Elaine Sadler
 - Ethiopian Academy of Science, Tsige Gebre-Mariam
 - German National Academy of Sciences, *Leopoldina*, Bärbel Friedrich
 - Korean Academy of Science and Technology, Min-Koo Han
 - Nigerian Academy of Science, Mosto Onuoha
 - Royal Scientific Society of Jordan, Wejdan Abu Alhija
- Ex-officio member:
- The World Academy of Sciences (TWAS), Mohamed H. A. Hassan

IAP Health Executive Committee

- Margaret (Peggy) A. Hamburg, USA (co-chair)
- Depei Liu, China (co-chair)
- *Academia Nacional de Medicina*, Argentina, Jorge Alberto Neira
- *Accademia Nazionale dei Lincei*, Italy, Guido Forni
- Academy of Sciences Malaysia, Lai-Meng Looi
- Brazilian Academy of Sciences, Helena Bonciani Nader
- Council of Finnish Academies, Jukka H. Meurman
- German National Academy of Sciences, *Leopoldina*, Wolfgang Holzgreve
- *Académie Nationale de Médecine*, France, Patrice Debré
- Hassan II Academy of Science & Technology, Morocco, Rajae El Aouad
- Nigerian Academy of Science, Sonny Folorunso Kuku

Ex-officio member:

- The World Academy of Sciences (TWAS), Mohamed H. A. Hassan

IAP Policy Board

- Richard Catlow, UK (co-chair)
- Masresha Fetene, Ethiopia (co-chair)
- African Academy of Sciences, Felix Dapare Dakora
- Australian Academy of Science, John Shine
- Brazilian Academy of Sciences, Luiz Davidovich
- Chinese Academy of Sciences, Tao Zhang
- *Académie des Sciences*, France, Pierre Corvol
- German National Academy of Sciences, *Leopoldina*, Gerald Haug
- Indian National Science Academy, Ajay K. Sood
- *Accademia Nazionale dei Lincei*, Italy, Giorgio Parisi
- Science Council of Japan, Juichi Yamagiwa
- Royal Scientific Society of Jordan, HRH Princess Sumaya bint El Hassan
- Mexican Academy of Sciences, Susana Estela Lizano Soberón
- Royal Netherlands Academy of Arts and Sciences, Wim Van Saarloos
- Nigerian Academy of Science, Mosto Onuoha
- National Academy of Sciences, Sri Lanka, Ranjith Mahindapala
- The World Academy of Sciences (TWAS), Mohamed H. A. Hassan

Ex-Officio Member:

- International Council of Academies of Engineering and Technological Sciences (CAETS), Ruth David

Observers:

- U.S. National Academy of Sciences, Marcia McNutt
- International Science Council (ISC), Heide Hackmann

Science Education Programme (SEP)

Global Council

- Wafa Skalli, Morocco (chair)
- Dato Lee Yee Cheong, Malaysia (immediate past chair)
- Carlos Bosch, Mexico
- Edgar González, Colombia
- Aphiya Hathayatham, Thailand
- Norbert Hounkonnou, Benin
- R. Indarjani, Indonesia
- Lena Kjellén, Sweden
- Lazzat Kussainova, Kazakhstan
- Carol O'Donnell, USA
- Daniel Rouan, France
- Manzoor H. Soomro, Pakistan

IAP Biosecurity Working Group

- Ann Arvin, USA (chair),
- Walter Sandow Alhassan, Ghana
- Neela Badrie, Trinidad and Tobago
- Lela Bakanidze, Georgia
- Flerida A. Cariño, Philippines
- Susana Goldstein Fink, Argentina
- Roderick Flower, UK
- Thomas Lengauer, Germany
- Arnaldo Lopes Colombo, Brazil
- Felix Moronta, Italy
- Sergey Victorovich Netesov, Russia
- Iqbal Parker, South Africa
- Bert Rima, UK
- Zabta Khan Shinwari, Pakistan
- Yuan Zhiming, China
- Menat Zanaty, Egypt
- Kavita Berger, USA (ex-officio)
- Katherine Bowman, USA (ex-officio)

Combatting Predatory Academic Journals and Conferences Working Group Members

- Abdullah Shams bin Tariq, Bangladesh (co-Chair)
- Susan Veldsman, South Africa (co-Chair)
- Asfawossen Asrat Kassaye, Ethiopia
- Enrico M. Bucci, Italy
- Ana Maria Cetto, Mexico
- Victorien Dougnon, Benin
- Stefan Eriksson, Sweden
- Lai-Meng Looi, Malaysia
- Shaher Momani, Jordan
- Diane Negra, Ireland
- Rabab Ahmed Rashwan, Egypt
- Marcos Regis da Silva, Uruguay

Meetings Supported in 2020

January

- Nairobi, Kenya, NASAC Science Education Programme and Sustainable Development Goals meeting, 14–15 January 2020
- Sukkur, Pakistan, ECO Science Foundation (ECOSF)–Sukkur IBA University IBSE workshop, 20–24 January 2020

February

- Rio de Janeiro, Brazil, IANAS Executive Committee meeting, 2–3 February 2020
- Davos, Switzerland, ‘Neonicotinoid insecticides: Use and effects in African agriculture’ session at the World Biodiversity Forum, 23–28 February 2020
- Kuala Lumpur, Malaysia, AASA Climate Change and Health meeting, 24–25 February 2020
- London, UK, EASAC Bureau meeting, 24–25 February 2020

March

- Brussels, Belgium, public launch of EASAC’s report on ‘Plastics and the Circular Economy’, 11 March 2020

May

- Online, EASAC Environment Steering Panel meeting, 4–5 May 2020
- Online, EASAC Bureau meeting, 28 May 2020
- Online, EASAC Energy Steering Panel meeting, 28 May 2020
- Online, NASAC Climate Change and Health meeting, 28–29 May 2020
- Online, EASAC Council meeting, 29 May 2020

June

- Online, IANAS videoconference on COVID-19, 1 June 2020
- Online, Meeting of the EASAC working group on ‘Decarbonisation of Buildings’, 8–9 June 2020
- Online, 12th Meeting of the NASAC Board, 10 June 2020
- Online, Meeting of the ALLEA–EASAC–FEAM working group on ‘International Transfer of Health Data’, 15 June 2020
- Online, first meeting of the working group on Combatting Predatory Academic Journals and Conferences, 16 June 2020

- Online, AASSA Climate Change and Health meeting, 17 June 2020
- Online, ‘Role of Academies: Addressing global social challenges’ session at the WAAS–UNOG ‘Global Leadership in the 21st Century. Strategies for Transformative Global Leadership’ conference, 18 June 2020
- Online, EASAC extraordinary meeting on ‘COVID-19 Learning’, 17 June 2020
- Online, second meeting of the working group on Combatting Predatory Academic Journals and Conferences, 25 June 2020
- Online, EASAC–FEAM webinar on ‘Regenerative Medicine’ for member academies, 25 June 2020
- Online, ‘IAP Young Physician Leaders COVID-19 Global Ward Round’, 26 June 2020

July

- Online, launch of the Global Sustainable Health Equity Movement (SHEM), 2 July 2020
- Online, WHO videoconference ‘Dual use life science research DUR/C Dialogue with Academies and Councils Videoconference’, 6 July 2020
- Online, AASSA webinar on ‘National academies’ response to COVID-19’, 10 July 2020
- Online, Meeting of the EASAC working group on ‘Decarbonisation of Buildings’, 20 July 2020
- Online, NASAC webinar on ‘Response of science academies to the COVID-19 pandemic’, 22 July 2020

August

- Online, IANAS Executive Committee meeting, 6 August 2020
- Online, first virtual workshop of the Scientific Sorting House Experts organised by NASAC, 13 August 2020
- Managua, Nicaragua, ACN–IANAS International virtual seminar on ‘COVID-19 in Nicaragua’, 20–21 August 2020
- Online, IANAS Climate Change and Health meeting, 27 August 2020

September

- Trieste, Italy, TWAS–IAP session on ‘Permanent Insecurity: A Science International strategy to support displaced and refugee scientists and science

students' at the EuroScience Open Forum (ESOF), 3 September 2020

- Trieste, Italy, press conference of the IAP Statement 'A Call to Action: Furthering the fight against falsified and substandard medical products' at the EuroScience Open Forum (ESOF), 3 September 2020
- Trieste, Italy, virtual meeting with Wafa Skalli, Chair of the IAP Science Education Programme (SEP), at the EuroScience Open Forum (ESOF), 5 September 2020
- Trieste, Italy, press conference of the 'IAP Communiqué on the Development and Distribution of Vaccines against COVID-19' at the EuroScience Open Forum (ESOF), 3 September 2020
- Online, EASAC-FEAM public webinar on 'Regenerative Medicine', 15 September 2020
- Online, NASAC-OEC webinar, 18 September 2020
- Online, third meeting of the working group on Combatting Predatory Academic Journals and Conferences, 24 September 2020
- Online, fourth meeting of the working group on Combatting Predatory Academic Journals and Conferences, 28 September 2020
- Online, fifth meeting of the working group on Combatting Predatory Academic Journals and Conferences, 30 September 2020
- Online, virtual EASAC- EPRS event on 'Plastics and the Circular Economy', 30 September 2020
- Online, EASAC strategy and team meeting, 30 September, 01 October 2020

October

- Online, EASAC Environment Steering Panel meeting, 2 October 2020
- Online, 13th Academy of Science Presidents' meeting, 5 October 2020
- Online, EASAC Energy Steering Panel meeting, 6 October 2020
- Online, TWAS-IAP-ISC 'Refugee and displaced scientists network and advocacy planning' workshop", 7 and 13-14 October 2020
- Online, AASSA Climate Change and Health meeting, 8 October 2020
- Online, ASSAf-NASAC 'Neonicotinoid insecticides: Use and effects in African agriculture. A review and

recommendations to policymakers' workshop, 18 October 2020

- Online, EASAC Biosciences Steering Panel meeting, 19 October 2020
- Online, 'Climate Change and Health' session at the World Health Summit, 26 October 2020
- Online, EASAC European Parliament webinar on 'Climate Change and Health', 28 October 2020

November

- Online, IANAS Executive Committee meeting, 10 November 2020
- Online, meeting of the EASAC Working Group on 'Decarbonisation of Buildings', 10-11 November 2020
- Online, EASAC Science Communication webinar, 18 November 2020
- Online, sixth meeting of the working group on Combatting Predatory Academic Journals and Conferences, 19 November 2020
- Online, 16th meeting of the NASAC General Assembly, 19 November 2020
- Online, EASAC Bureau meeting, 25 November 2020
- Online, EASAC Council meeting, 26 - 27 November 2020

December

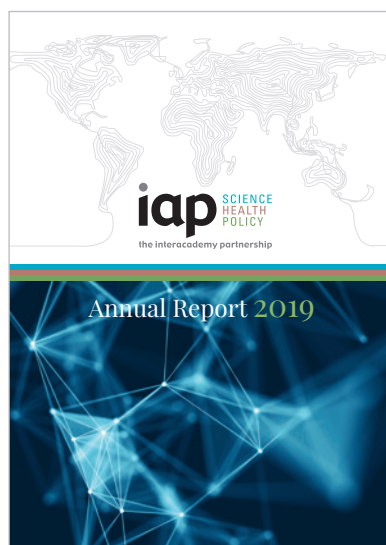
- Online, Meeting of the EASAC Working Group on 'Decarbonisation of Buildings', 7 December 2020
- Online, IANAS Water Programme focal points meeting, 8 December 2020
- Online, seventh meeting of the working group on Combatting Predatory Academic Journals and Conferences, 10 December 2020
- Online, IANAS Women for Science Programme focal points meeting, 15 December 2020
- Online, IAP 'Leadership for a renewed multilateralism' session at the UNOG-WAAS 'Global Leadership Conference', 16 December 2020
- Online, Establishing Science Academies in partnership with UN Technology Bank, 16 December 2020

Publications Supported by IAP in 2020

IAP Annual Report 2019

Published by: IAP

- www.interacademies.org/publication/iap-annual-report-2019



Achieving the Public Health Potential of COVID-19 Vaccines

Published by: IAP

- www.interacademies.org/publication/achieving-public-health-potential-covid-19-vaccines

Advancing the 2030 Agenda in African Cities through Knowledge Co-Production

Published by: International Science Council (ISC), Sida, NASAC, IAP

- www.interacademies.org/publication/advancing-2020-agenda-african-cities-through-knowledge-co-production

Assessing the Risks and Benefits of Advances in Science and Technology: Exploring the Potential of Qualitative Frameworks

Published by: IAP

- www.interacademies.org/publication/assessing-risks-and-benefits-advances-science-and-technology-exploring-potential-qualitative-frameworks

advances-science-and-technology-exploring-potential

IAP Communiqué on COVID-19

Published by: IAP

- www.interacademies.org/publication/iap-communication-covid-19

IAP Communiqué on the Development and Distribution of Vaccines against COVID-19

Published by: IAP

- www.interacademies.org/vaccines_covid

IAP input into the UNESCO Open Science Recommendation

Published by: IAP

- www.interacademies.org/publication/iap-input-unesco-open-science-recommendation



Chamado pela solidariedade global na pandemia de COVID-19 Parceria InterAcademias (IAP)

Published by: IAP

- www.interacademies.org/publication/chamado-pela-solidariedade-global-na-pandemia-de-covid-19-parceria-interacademias-iap

Communiqué on combatting structural racism and discrimination from the InterAcademy Partnership (IAP)

Published by: IAP

- www.interacademies.org/combatingracism

Communiqué on Global Green Recovery After COVID-19

Published by: IAP

- www.interacademies.org/greenrecovery

Communiqué on Global Green Recovery After COVID-19 – Japanese

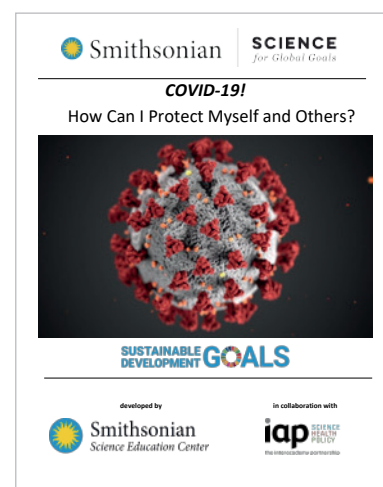
Published by: IAP

- www.interacademies.org/publication/communication-global-green-recovery-after-covid-19-japanese

COVID-19! How Can I Protect Myself and Others?

Published by: The Smithsonian Science Education Center (SSEC), IAP

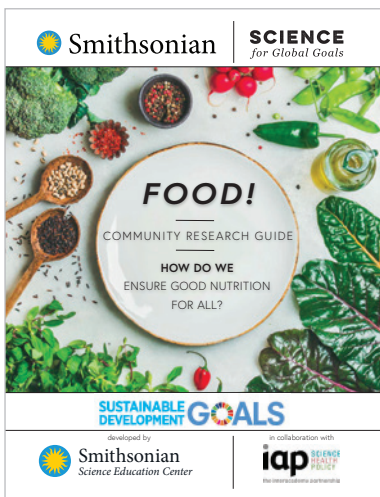
- www.interacademies.org/publication/covid-19-how-can-i-protect-myself-and-others



Food! Community Research Guide

Published by: The Smithsonian Science Education Center (SSEC), IAP

- www.interacademies.org/publication/food-community-research-guide



Llamado a la solidaridad global en la pandemia de COVID-19

Published by: IAP

- www.interacademies.org/publication/llamado-la-solidaridad-global-en-la-pandemia-de-covid-19

One Belt One Road Fusion of Civilisations Education Curriculum

Published by: IAP

- www.interacademies.org/publication/obe-belt-one-road-fusion-civilisations-education-curriculum

S.O.S. Booklet for Global Young Scholars

Published by: IAP and GYA

- www.interacademies.org/publication/sos-booklet-global-young-scholars

Arctic warming and microbial threats: Perspectives from IAP and EASAC following an international academies' workshop

Published by: IAP, EASAC

- www.interacademies.org/publication/arctic-warming-and-microbial-threats-perspectives-iap-and-easac-following-international



Addressing the social determinants of global mental health in the Sustainable Development Goals era

Published by: UK Academy of Medical Sciences, IAP

- www.interacademies.org/publication/addressing-social-determinants-global-mental-health-sustainable-development-goals-era



Interdisciplinary research in epidemic preparedness and response

Published by: UK Academy of Medical

Sciences, IAP, UK Medical Research Council

- www.interacademies.org/publication/interdisciplinary-research-epidemic-preparedness-and-response

Understanding and Responding to Global Health Security Risks from Microbial Threats in the Arctic

Published by: the National Academies of Sciences, Engineering, and Medicine (NASEM), IAP, EASAC

- www.interacademies.org/publication/understanding-and-responding-global-health-security-risks-microbial-threats-arctic

Challenges and potential in regenerative medicine

Published by: EASAC

- www.interacademies.org/publication/challenges-and-potential-regenerative-medicine



Designing inter-regional engagement to inform cohesive policy making

Published by: EASAC

- www.interacademies.org/publication/designing-inter-regional-engagement-inform-cohesive-policy-making

Eutrophication: A growing problem in the Americas and the Caribbean

Published by: IANAS

- www.interacademies.org/publication/eutrophication-growing-problem-americas-and-caribbean

How can science help to guide the European Union's green recovery after COVID-19?

Published by: EASAC

- www.interacademies.org/publication/how-can-science-help-guide-european-unions-green-recovery-after-covid-19



- www.interacademies.org/publication/nasac-statement-human-rights

Neonicotinoids in Africa

Published by: EASAC, Academy of Science of South Africa (ASSAf)

- www.interacademies.org/publication/neonicotinoids-africa

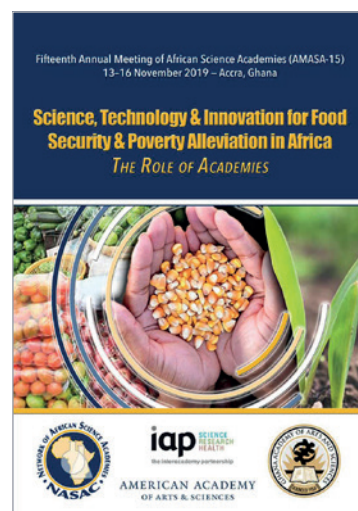
Packaging plastics in the circular economy

Published by: EASAC

- www.interacademies.org/publication/packaging-plastics-circular-economy



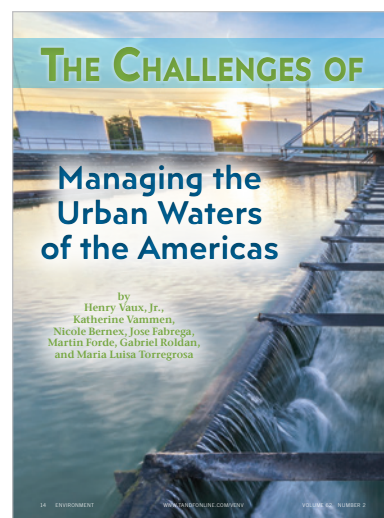
science-technology-innovation-food-security-poverty-alleviation-africa



The Challenges of Managing the Urban Waters of the Americas

Published by: IANAS

- www.interacademies.org/publication/challenges-managing-urban-waters-americas



Hydrogen and synthetic fuels

Published by: EASAC

- www.interacademies.org/publication/hydrogen-and-synthetic-fuels

IANAS statement on COVID-19

Published by: IANAS

- www.interacademies.org/publication/ianas-statement-covid-19

NASAC statement on Human Rights

Published by: NASAC

Post-pandemic recovery: use of scientific advice to achieve social equity, planetary health, and economic benefits

Published by: EASAC

- www.interacademies.org/publication/post-pandemic-recovery-use-scientific-advice-achieve-social-equity-planetary-health-and

Science, Technology & Innovation for Food Security & Poverty Alleviation in Africa

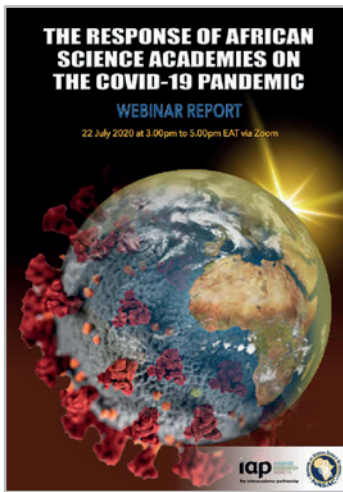
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- www.interacademies.org/publication/

The regulation of genome-edited plants in the European Union

Published by: EASAC

- www.interacademies.org/publication/regulation-genome-edited-plants-european-union



The response of African science academies on the COVID-19 pandemic

Published by: NASAC

- www.interacademies.org/publication/response-african-science-academies-covid-19-pandemic

Published by: EASAC

- www.interacademies.org/publication/towards-sustainable-future-transformative-change-and-post-covid-19-priorities

Water Quality in the Americas:

A survey

Published by: IANAS

- www.interacademies.org/publication/water-quality-americas-survey

Women for science census update:

2014 - 2019

Published by: IANAS

- www.interacademies.org/publication/women-science-census-update-2014-2019

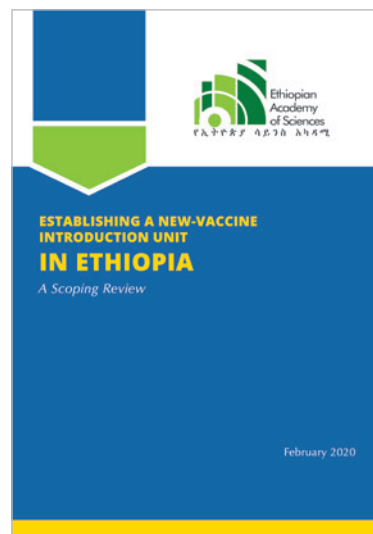
Establishing a New-Vaccine Introduction Unit in Ethiopia - a scoping review

Published by: Ethiopian Academy of Sciences (EAS)

- www.interacademies.org/publication/establishing-new-vaccine-introduction-unit-ethiopia-scoping-review



Towards a sustainable future: transformative change and post-COVID-19 priorities



Secretariat

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

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