

THE INTERACADEMY PARTNERSHIP

Case for Support

I. The InterAcademy Partnership: Building a better world through science

Science generates solutions to the world's most urgent problems. Human society is impacting life on Earth and the environment in an unprecedented manner, creating new challenges and a greater dependence on science. By 2050, for example, the global population will have increased to some 9 billion people, compared with today's 7 billion. Advances are needed to address myriad global challenges such as improving material well-being for the world's poorest citizens, accelerating progress in meeting existing and emerging health threats, ensuring a sustainable supply of food and water, and developing sources of energy that allow for the stabilization and mitigation of climate change.

The work of the world's academies of science, medicine and engineering results in lives saved, better education, and more effective policy approaches to a range of issues. The newly launched InterAcademy Partnership (IAP) will enlarge the scale and scope of this work. IAP brings together established global networks of academies with the goal of maximizing the contributions of science toward understanding and solving the world's most challenging problems. IAP harnesses the expertise of the world's scientific, medical and engineering leaders to advance sound policies, promote excellence in science education, improve public health, and achieve other critical development goals. IAP's some 130 national members and regional networks have compiled an extensive track record of delivering evidence-based advice and performing other services for the global community.

II. Advancing IAP's strategic priorities: A strong global network is the key

The launch of the InterAcademy Partnership as an integrated global network is the next step in harnessing the power of science to address global challenges. Global challenges require global solutions, and successful



Young Physician Leaders Workshop Session 2013

implementation of global solutions requires ownership and appropriate efforts within individual countries. Just as each national academy represents an authoritative voice within its own policy context, the unified voice of academies can have a profound effect at the international level. The synergies that have been achieved between IAP and its members allow groundbreaking work by individual academies to contribute to global policy debates, and facilitate the dissemination and uptake of IAP work in countries around the world.

IAP's efforts to support the formation and growth of new academies, share best practices, foster regional networks, and undertake a variety of convening activities will enhance the impacts of IAP's products and allow it to develop innovative new approaches to address global challenges.

Strategic Priority 1: A Scientifically Literate Global Citizenry

There is enormous potential to build on the work of individual IAP academies and regional networks in upgrading science education around the world. Planned actions include:

- Working with regional networks and member academies, promote science and science education in all countries through national education programs, programs that reach out to the public, and Young Scientist programs.

- Develop web-based and printed resources that bring reliable information on science and policy issues to a global audience.
- **Expected Impacts: Expand the reach of science education efforts to all countries in the network, and to millions of young people.**

Strategic Priority 2: Provide Evidence-based Advice and Perspectives on Global Issues

Building on existing policy advisory capabilities and audiences, IAP will expand and diversify this aspect of its work. Planned actions include:

- Develop succinct statements on global issues with significant scientific content that recommend actions to policy makers and disseminate these for through the membership and the media to the world’s governing bodies.
- Develop in-depth policy reports and other products that synthesize the global knowledge base on pressing issues, and recommend new approaches and solutions to international organizations, individual countries, and other audiences.
- Develop new models for delivering policy advice to address global challenges that utilize regional meetings with stakeholders and the creation of new web-based tools.
- Foster ongoing dialogue, network activity, and cooperation among academies in areas of continued controversy and debate.
- **Expected Impacts: Increase the number and impacts of policy products, advance global consensus and catalyze action.**



Delivering the IPCC review report to the UN Secretary General 2010

Strategic Priority 3: Strengthen the Global Scientific Enterprise

Having grown rapidly over the past several decades in terms of size and influence, the global scientific enterprise itself needs to understand and adhere to high standards to maximize its contributions to society. Planned actions include:

- Develop products and convene stakeholders around key issues in order to ensure the progress and credibility of science, such as research integrity, reproducibility, and access to research data.
- Expand programs aimed at increasing the participation of women in science and research.
- Expand initiatives for national young academies and young scientists.
- **Expected Impacts: Reach a majority of the world’s research institutions and universities that educate most of the world’s scientists with high quality educational materials.**

Strategic Priority 4: Strengthen the Global Network

IAP will expand its work with regional networks and individual academies to build capacity and increase effectiveness and impact. Planned actions include:

- Expand training programs that help member academies in developing and delivering policy advice, communicating with the public, and in other aspects of their missions to serve society, especially those members in low-income countries and with limited resources.
- Expand efforts to help scientists launch new academies in countries where they are currently lacking, with the support of the regional networks.
- **Expected Impacts: Increase the number of academies and double the number of academies capable of undertaking significant policy activities.**

III. A track record of accomplishments and positive impacts

Here are some examples of high-impact work from IAP, its networks, and individual member academies:

- The release of the Academy of Science of South Africa report *HIV/AIDS, TB and Nutrition* in 2007 represented a **bold example of independent Academy advice that ran counter to government thinking** during a critical period over the previous few years. **The ASSAf report contributed towards a change in attitudes on the use of antiretroviral drugs in treating HIV/AIDS.** By 2012, South Africa had reached over 80% of those eligible for antiretroviral treatment, **resulting in a dramatic decline in deaths due to HIV/AIDS and many thousands of lives saved.**
- With its 2010 report *Climate Change Assessments*, IAP for Research developed a **governance and management roadmap to ensure the continued effectiveness and credibility of the Intergovernmental Panel on Climate Change**, arguably the world's most important multi-stakeholder scientific organization.
- **IAP for Science has assisted in the creation of around 20 new academies, most of them in Africa.**
- Since 2011, **IAP for Health has organized an annual Young Physician Leaders Program**, which brings together about **20 physicians under 40 years of age for intensive leadership training.** The goal is to foster leadership qualities among young physicians who are dealing with global health issues.
- **IAP for Science's 2009 Statement on Ocean Acidification alerted policy makers around the world to the potential dangers of ocean acidification.** The statement was inspired by a report by the Royal Society of London, and illustrates how IAP can take the work of individual academies and enhance its influence in a global context.
- IANAS/IAP America's 2013 report *Diagnosis of Water in the Americas* provides a **comprehensive description of water resources in the Americas, and has been downloaded over 300,000 times.**
- **IAP for Science has fostered the emergence of regional networks of academies in Africa and the Americas** as well as a network for Academies in countries of the Organization of Islamic Conference (OIC).
- ***Antimicrobial Resistance: A Call for Action***, a joint statement of IAP for Health and IAP for Science released in November 2013, has raised awareness about the serious threat to global health posed by antimicrobial resistant infections.
- The joint IAP for Science – IAC for Research study ***Responsible Conduct in the Global Research Enterprise: A Policy Report***, provides clarity and advice in **forging an international consensus on responsible conduct.** The report was presented and distributed at the **2013 3rd World Conference on Research Integrity and the 2013 Global Research Council meeting.**
- **IAP for Science has promoted inquiry-based science education (IBSE)**, mainly in primary schools, via activities implemented by many member academies and regional networks in both developed and developing countries;
- IAP for Science sponsored a young scientists program which **led to the creation of the Global Young Academy (GYA)**, an organization that that now has **200 members from 58 countries, has secured core financial**

support, and is increasingly active in releasing its own statements in interactions with high-level bodies such as the UN Science Advisory Board and the European Union's Joint Research Council.

- The 2014 publication *Climate Change: Evidence and Causes* is a joint effort of the Royal Society of London and the U.S. National Academy of Sciences. The publication has received significant media coverage, and **served as a key input to discussions at the 2nd World Summit of Legislators**, held in Mexico in June 2014, and the Summit's concluding resolution.

IV. How IAP and its member academies serve global society

Academies represent the scientific, medical and engineering leadership of individual countries and of the entire world. They are typically independent, self-perpetuating national institutions that recognize excellence and achievement. Academies are merit-based, with members selected from among the leading scientific, medical and engineering minds within a country. IAP is able to harness the power and authority of these academies and access their combined scientific talent.



InterAcademy Partnership Steering Committee, Berlin, 2014

In addition to their honorific role, academies are vital civil society institutions that have the credibility to inform the public and policy makers about looming problems and potential solutions. Academies have a mission to serve their societies by fostering the growth and understanding of science and technology and their utilization for public benefit. Academies bring scientific perspectives to bear on national and international issues.

Academies contribute important values and approaches to governance, education and social equity. The value of science goes beyond the generation and application of discoveries. Countries and societies are improving their governance and economic prospects by embracing scientific values such as honesty, openness, reliability and accountability. In an increasingly complex world, there is an urgent need to improve the science literacy of the general public and of decision-makers at every level.

Academies are expanding the scope of international cooperation. Over the past several decades, academies around the world have become more active and effective in pursuing their mission of service to society. They have built a record of addressing global issues by bringing together leading minds from different countries to lend their diverse experiences and perspectives to the problem solving process.

V. The InterAcademy Partnership: The global voice of science and medicine

What is IAP?

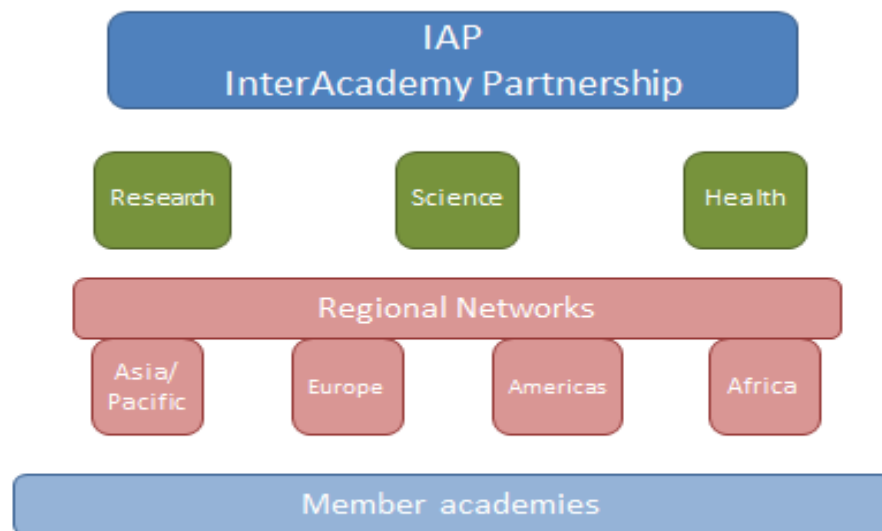
IAP is a new umbrella organization derived by merging three established inter-academy networks. As such it is governed by the leaders of these networks, now called IAP for Science, IAP for Research, and IAP for Health. The leadership of the new umbrella organization also includes representatives of four regional networks – in Africa, the

Asia/Pacific region, Europe and the Americas. IAP currently has 130 member academies, which together reach governments representing 95% of the world's population.

IAP's constituent organizations and their activities

- **IAP for Science** – Since 1993, IAP for Science, previously known as the InterAcademy Panel, has harnessed the power found in the world's scientific community to address global challenges and create a more successful world. IAP Science brings together 107 member academies to advise the global public and decision-makers on the scientific aspects of critical global issues, such as sustainable development, climate change, biotechnology and global health. It also works to improve science education and scientific literacy in member countries.
- **IAP for Research** – Since 2000, IAP for Research, known up to now as the InterAcademy Council, has mobilized the best scientists and engineers worldwide to provide high quality in-depth advice to the United Nations and the broader global community on critical issues such as the importance of building scientific and technological capacity worldwide, a sustainable energy future, African agriculture, reviewing of the processes of the UN's Intergovernmental Panel on Climate Change (IPCC), and, most recently, a broad vision of scientific responsibility in the global research enterprise.
- **IAP for Health** – Established in 2000, IAP for Health, known up to now as the InterAcademy Medical Panel, is a global network of more than 70 medical academies and medical sections of academies of science and engineering. It is committed to improving health world-wide, for example by strengthening the capacity of academies to provide evidence-based advice to governments on health and science policy, and by supporting projects by member academies to strengthen health research and higher education in their countries.

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IAP's regional networks

Strong regional networks of academies have emerged in the Americas, Europe, Africa, and Asia.

- **Inter-American Network of Academies of Science (IAP Americas)** – This network includes academies from North America, Central America and the Caribbean, and South America. It has performed influential work in a number of areas, such as water, energy, climate change, women for science, science education and capacity building.
- **European Academies Science Advisory Council (IAP Europe)** – This network is formed by the national science academies of the European Union Member States to enable them to collaborate with each other in providing independent science advice to European policy-makers. It thus provides a means for the collective voice of European science to be heard. It produces policy reports and statements responding to the needs and interests of the European Union.
- **Association of Academies and Societies of Sciences in Asia (IAP Asia)** – This network’s membership reflects the vast geographical scale and cultural diversity of Asia and the Pacific. It provides advice on issues related to science and technology, research and development, and the application of technology for socio-economic development, and has recently undertaken a series of regional workshops on scientific literacy and global change.
- **Network of African Science Academies (IAP Africa)** – This network has grown significantly in recent years, as more African countries have established academies. It is focused on assisting African academies to reach and influence decision-makers in Africa and around the world, and to build science and technology capacity in all African countries.

VI. InterAcademy Partnership Steering Committee

Professor Robbert Dijkgraaf
President, InterAcademy Partnership
Co-Chair, IAP for Research

Robbert Dijkgraaf has been Director and Leon Levy Professor of the Institute for Advanced Study since 2012. A mathematical physicist, he has made significant contributions to string theory and the advancement of science education. His research focuses on the interface between mathematics and particle physics. Past President (2008–12) of the Royal Netherlands Academy of Arts and Sciences, Dijkgraaf is a distinguished public policy adviser and passionate advocate for science and the arts. Many of his activities—which have included frequent appearances on Dutch television, a monthly newspaper column in NRC Handelsblad, several books for general audiences, and the launch of the science education website Proefjes.nl—are at the interface between science and society.



Professor Mohamed Hassan
President, InterAcademy Partnership
Co-Chair, IAP for Science

Mohamed H. A. Hassan is Chairman of the Council of the United Nations University (UNU). He also serves on a number of Boards of international organizations worldwide. After obtaining his PhD in Mathematics from the University of Oxford, Hassan returned to his native Sudan and later became Professor and Dean of the School of Mathematical Sciences, University of Khartoum. He has a long list of publications in theoretical plasma physics and



fusion energy, wind erosion, and dust and sand transport in dry lands. Hassan was the founding Executive Director of The World Academy of Science (TWAS), President of the African Academy of Sciences, President of the Network of Academies of Science in Africa (NASAC) and Chairman, Honorary Presidential Advisory Council for Science and Technology, Nigeria.

Professor Detlev Ganten
Steering Committee Member, InterAcademy Partnership
Co-Chair, IAP for Health

From 2004 to 2008 Detlev Ganten was Chief Executive Officer at the “Charité – Universitätsmedizin Berlin”, the joint medical faculty of the Free University and Humboldt University of Berlin. He is now the Chairman of the Foundation Board of the Charité Foundation. As a research scientist in the field of hypertension, Ganten elucidated fundamental mechanisms of the pathophysiology and molecular biology of high blood pressure. His area of research includes the hormonal regulation of blood pressure, especially the renin-angiotensin system, and the molecular genetics of cardiovascular diseases and evolutionary medicine.

He has held faculty and management positions at the University of Heidelberg, the Max Delbrück Center for Molecular Medicine (MDC) Berlin-Buch, and the Benjamin Franklin Medical Center of the Free University of Berlin.



Prof. Dr. Lai-Meng Looi
Steering Committee Member, InterAcademy Partnership
Co-Chair, IAP for Health

Lai-Meng Looi is Senior Professor of Pathology at the University of Malaya (UM) and Senior Consultant Histopathologist to its Medical Centre. Looi is a Foundation Fellow of the Academy of Sciences Malaysia (ASM) and Chief Censor of the Academy of Medicine Malaysia. She serves on the National committees for organ transplantation, stem cell research and legislation of human cloning. Professor Looi has a research interest in amyloidosis, kidney disease and tumour pathology, on which she has more than 170 peer-reviewed publications and delivered more than 300 invited lectures. She also devotes considerable time to workshops to promote scientific writing, research methodology and biomedical ethics among young researchers in the Asia-Pacific region.



Professor Daya Reddy
Steering Committee Member, InterAcademy Partnership
Co-Chair, IAP for Research

Daya Reddy holds the South African Research Chair in Computational Mechanics, in the Department of Mathematics and Applied Mathematics, at the University of Cape Town. He has been an academic staff member at UCT since 1979, and served as dean of the Faculty of Science over the period 1999 - 2005. His research is concerned with the mathematical analysis and computational solution of problems arising in the mechanics of solids and fluids. Reddy is a founding member of the Academy of Science of South Africa (ASSAf), and was elected ASSAf President in



October 2012. He is also a fellow of the South African Academy of Engineering, of the African Academy of Sciences, of The World Academy of Sciences (TWAS), and of the International Association of Computational Mechanics.

Professor Volker ter Meulen
Steering Committee Member, InterAcademy Partnership
Co-Chair, IAP for Science

Volker ter Meulen has spent most of his research and teaching career at Würzburg University, where he has twice served as Dean of the Faculty of Medicine. His work has focused on the molecular and pathogenic aspects of viral infections in humans and animals, in particular on infections of the central nervous system. Ter Meulen has served as a member of many national and international committees giving scientific advice to policy makers and society. From 2003 – 2010, he was President of the German National Academy of Sciences Leopoldina. Under his leadership, the Leopoldina strengthened its international commitments in different inter-academic councils and was appointed National Academy of Sciences in 2008. From 2007 – 2010, he served as president of the European Academies of Science Advisory Council (EASAC).



VI. What can interested organizations and individuals do to help?

IAP is currently engaged in a multi-year fundraising effort, and is seeking support to advance its strategic priority areas: (1) A scientifically literate global citizenry, (2) Provision of evidence-based advice and perspectives on global issues, (3) A stronger global scientific enterprise, and (4) A stronger global network of academies. This can come in the form of support for specific projects as well as core support. IAP currently receives funding from the Government of Italy and several member academies that supports secretariat functions and core activities.

IAP looks forward to discussing possible partnerships and options for advancing its strategic priorities with foundations, international organizations, governments and corporations around the world that share these values and goals. IAP's steering committee members can be reached through its secretariat, which can be contacted at the addresses below.

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