კრიტიკულ მდგომარეობათა და კატასტროფათა მედიცინა

Critical care & Catastrophe Medicine

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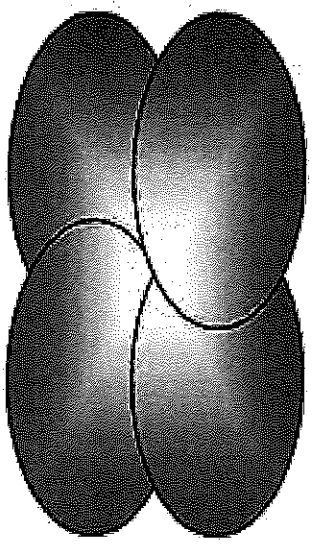

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საქართველოს კრიტიკული მედიცინის ინსტიტუტის, საქართველოს მედიცინის მეცნიერებათა აკადემიისა და საქართველოს კატასტროფათა და კრიტიკულ მდგომარეობათა მედიცინის ასოციაციის ოფიციალური ჟურნალი

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Peter F. McGrath

Introducing the InterAcademy Partnership

The InterAcademy Partnership (IAP)Trieste, Italy

The InterAcademy Partnership was formally established by the member academies of three global academy networks in Hermanus, South Africa, in March 2016.

It brings together under one umbrella IAP, the global network of science academies (now IAP for Science), the InterAcademy Council (IAC, now IAP for Research) and the InterAcademy Medical Panel (IAMP, now IAP for Health).

The new Partnership gives voice to more than 130 national, regional and global academies of science and medicine, and also works through four regional networks – in Europe, Africa, the Asia/Pacific, and the Americas.

Its four strategic priorities are:

- Provide evidence-based advice and perspectives on global issues;
- Build a scientifically literate global citizenry;
- Strengthen the global scientific enterprise; and
- Strengthen the global network of academies, including establishing new academies in countries where they do not currently exist.

IAP achieves these goals by supporting activities carried out by its regional networks as well as by individual or collaborating academies; by securing funds from donors for major projects in which member academies are invited to participate; and by linking with UN organizations.

Of particular relevance to ‘New Steps in Critical Care and Catastrophe Medicine’ is the engagement with the UNISDR and the mechanisms for integrating the use of science and technology for achieving the goals of the Sendai Framework for Disaster Risk Reduction 2015-2030.

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. By bringing together such academies, the InterAcademy Partnership (IAP) is able to harness the power, authority and credibility of its members and to access their combined scientific talent.

Origins and structure

The InterAcademy Partnership (IAP) was formally established in March 2016[1].

However, its origins date back to 1993 and the establishment of what was then known as the InterAcademy Panel.

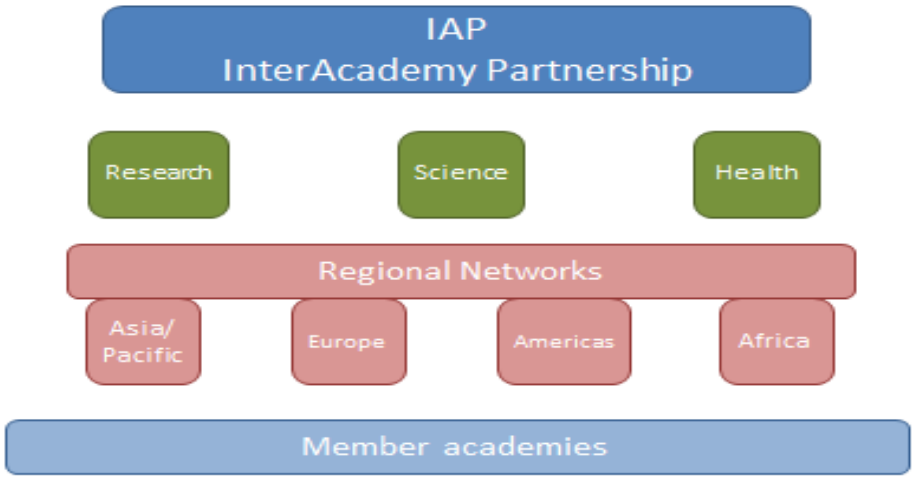
Several years ago, the InterAcademy Panel was renamed 'IAP - the global network of science academies' and now, with the formation of the InterAcademy Partnership, has become 'IAP for Science'[2]. Since 1993, it has harnessed the power of the world's scientific community to address global challenges and promote science-based sustainable development. IAP for Science brings together 111 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.

Two other global academy networks have spun off from these origins and were established with their own aims.

Established in 2000, the InterAcademy Medical Panel (IAMP), now IAP for Health[3], is a global network of 78 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.

[1] http://www.interacademies.net/2952/PressReleases/29843.aspx
[2] http://www.interacademies.net/
[3] http://www.iamp-online.org/

The InterAcademy Council, now known as IAP for Research[4], was also established in 2000. Its membership comprises a sub-set of IAP for Science member academies. Since its inception, it 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, sustainable energy, and African agriculture. IAP for Research also presented a review of the processes used by the UN's Intergovernmental Panel on Climate Change (IPCC), and set out a broad vision of scientific responsibility in the global research enterprise.



IAP is headed by a Steering Committee made up of the six co-chairs of the three partner organizations. Two of these six persons are designated Presidents and act as the figureheads of the umbrella organization – one representing developed countries and one representing developing countries. Currently (as of August 2016), they are Robbert Dijkgraaf of IAP for Research and Mohamed Hassan of IAP for Science. Members of the IAP Steering Committee are nominated by their respective member academies and elected through an inclusive democratic process during the general assemblies of the three component organizations that make up IAP.
The organizational structure of IAP is completed by the four regional networks[5]:

[4] www.interacademycouncil.net/
[5] http://www.interacademies.net/Activities/Projects/18090.aspx

- **Association of Academies and Societies of Sciences in Asia (AASSA)** – 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.
- **European Academies Science Advisory Council (EASAC)** – This network is formed by the national science academies of the European Union Member States (plus Norway and Switzerland), enabling them to provide a collective voice of European science when presenting independent science advice to European policy-makers. It produces policy reports and statements responding to the needs and interests of the European Union.
- **Inter-American Network of Academies of Science (IANAS)** – This network includes academies from North, Central and South America as well as the Caribbean. It has performed influential work in a number of areas, such as water, energy, climate change, women for science, science education and capacity building.
- **Network of African Science Academies (NASAC)** – 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.

The leadership of the new umbrella organization also includes representatives of these four regional networks who join the six-member Steering Committee to make up a 10-member Board.

Strategic priorities

As an integrated global network, the InterAcademy Partnership aims to harness the power of science to address global challenges. IAP aims to achieve this via four strategic priorities:

Strategic Priority 1: Provide Evidence-based Advice and Perspectives on Global Issues

IAP will build on and expand its existing policy advisory capabilities by:

- Developing succinct statements on global issues with significant scientific content that recommend actions to policy makers and

disseminating these through its membership, the media and other outlets to the world's governing bodies.

- Developing in-depth policy reports and other products that synthesize the global knowledge base on pressing issues, and, through these, recommend new approaches and solutions to international organizations, individual countries, and other audiences.
- Providing a platform for experts to develop and deliver policy advice that addresses global challenges utilizing regional meetings with stakeholders and the creation of new web-based tools.
- Fostering ongoing dialogue, network activity, and cooperation among academies in areas of continued controversy and debate.

Strategic Priority 2: A Scientifically Literate Global Citizenry

There is enormous potential to build on the work of the IAP Science Education Programme, established in 2003 and headed by a Global Council[6], individual member academies and IAP regional networks to upgrade science education around the world. Planned actions include:

- Promoting science and science education in all countries through programmes addressing national education, especially through inquiry-based science education (IBSE).
- Taking actions to bring science to the public, aiming to increase people's ability to understand scientific concepts and to think rationally (science literacy).
- Develop web-based and printed resources that bring reliable information on science and policy issues to a global audience.

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:

- Developing products and convening stakeholders around key issues in order to ensure research integrity, reproducibility, access to research data and other areas that affect the progress and credibility of science.
- Expanding initiatives, including in collaboration with the Global Young Academy, to support the careers of young scientists and for the establishment of national young academies.

[6] http://www.interacademies.net/ProjectsAndActivities/Projects/12250/18276.aspx

- Expanding programmes aimed at increasing the participation of women in science and research.

These latter two activities aim at increasing the diversity of expertise and viewpoints in national, regional and global decision-making.

Strategic Priority 4: Strengthen the Global Network

Working with regional networks, individual academies and other science organizations, IAP will build capacity to increase the effectiveness and impact of academies and the global scientific enterprise. Planned actions include:

- Expanding training programmes to help member academies develop and deliver 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.
- Expanding efforts, with the support of the regional networks, to help launch new academies in countries where they are currently lacking and to increase the capacity of weak/newly-founded academies. To date, IAP has assisted in the creation of some 20 new academies, most of them in Africa.
- Supporting its regional networks to develop locally-relevant science-based policy advice and recommendations.

Track record

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.

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 more than 130 members allow groundbreaking work by individual academies to contribute to global policy debates, as well as facilitating the dissemination and uptake of IAP reports and recommendations in countries around the world.

Among the successes of IAP and its three component networks are:

- Since 2011, IAP for Health has organized an annual Young Physician Leaders (YPL_ programme[7]. Each year, about 20 physicians under 40 years of age are provided with intensive leadership training. The goal is to foster leadership qualities and a network of peers among young physicians – there are currently more than 100 alumni – who are dealing with global health issues. In May 2016, a group of some 50 alumni of the programme also attended the World Health Assembly[8], gaining experience of international debate and decision-making processes, and in several cases linking with their national delegations.
- IAP for Science's 2009 Statement on Ocean Acidification[9] alerted policy makers around the world to the potential dangers of ocean acidification. The statement was inspired by a report by the UK's Royal Society, and illustrates how IAP can take the work of individual academies and enhance its influence in a global context.
- 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 Cooperation (OIC).
- The 2012 publication *Responsible Conduct in the Global Research Enterprise: A Policy Report*[10], 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 has since published *Doing Global Science: A Guide to Responsible Conduct in the Global Research Enterprise* (2016)[11].
- *Antimicrobial Resistance: A Call for Action*[12], 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 the growing number of antimicrobial resistant infections and declining efficacy of current antimicrobial drugs.
- IANAS's 2013 report *Diagnosis of Water in the Americas*[13] provides a comprehensive description of water resources in the Americas, and has been downloaded over 300,000 times. IANAS has followed up on this

[7] http://www.iamp-online.org/node/7
[8] http://www.iamp-online.org/ypl-reunion-2016-reporting
[9] http://www.interacademies.net/10878/13951.aspx
[10] http://www.interacademycouncil.net/24026/GlobalReport.aspx
[11] http://www.interacademycouncil.net/24026/29429.aspx
[12] http://www.interacademies.net/10878/call_for_action.aspx
[13] http://www.interacademies.net/Publications/24955.aspx

report with a second well-received publication, *Urban Water Challenges in the Americas*[14].

- IAP for Science has promoted inquiry-based science education (IBSE)[6], mainly in primary schools, via activities implemented by many member academies and regional networks in both developed and developing countries, training teachers to develop pupils' abilities to think critically.
- IAP for Science sponsored a young scientists programme which led to the creation of **the Global Young Academy (GYA)[15]. This organization now has 200 members from some 60 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*[16] is a joint effort of the Royal Society of London and the US National Academy of Sciences. The publication 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.
- Likewise, the 2015 report by EASAC, IAP's regional network for Europe, on *Ecosystem Services, Agriculture and Neonicotinoids*[17], was discussed in the European Commission, European parliament and other parliamentary proceedings across Europe, helping to shape EU and member state legislation.

Ongoing projects

Among the projects that IAP and its constituent networks are currently undertaking are:

- Food Nutrition and Security and Agriculture (FNSA)[18] – led by the German National Academy of Sciences, Leopoldina, and funded largely by the German Federal Ministry of Education and Research (BMBF). Regional reports are currently being prepared by IAP's four regional networks. These will eventually come together in a global synthesis report.

[14] http://www.interacademies.net/Publications/26942.aspx
[15] http://www.interacademies.net/Academies/11796/Observers/18866.aspx

[16] http://www.interacademies.net/Publications/24835.aspx
[17] http://www.interacademies.net/Publications/27069.aspx
[18] http://www.interacademies.org/

- Improving Scientific Input to Global Policymaking[19] – This three-year project, sponsored by the Carnegie Corporation of New York (CCNY), is framed around the global science community's contribution to achieving the UN's Sustainable Development Goals (SDGs).
- Harnessing Science, Engineering and Medicine to address Africa's Challenges[20] – Another three-year project sponsored by CCNY. It aims to assist Africa's efforts to deliver on the SDGs, the priorities of the Science, Technology & Innovation Strategy for Africa (STISA 2024) and the NASAC Strategic Plan.
- IAP for Health's Young Physician Leaders programme[7] – led by IAP for Heath in association with the World Heath Summit. Each year some 20 young physicians are provided with leadership training, networking opportunities, and are linked in to a growing network of alumni.
- IAP Science Education Programme (SEP)[6] – led by a Global Council chaired by Dato Lee Yee Cheong of Malaysia, IAP's SEP promotes inquiry-based science education, especially in primary schools, and science literacy among the wider public. The most recent IAP SEP biennial conference took place on 14-15 April 2016 in Santiago, Chile, focusing on 'Improving the Learning of Biology and Related Sciences at the Pre-University Level'. More than 200 people attended
- Biosecurity Working Group (BWG)[21] – Led by the Polish Academy of Sciences and featuring representatives from Australia, China, Cuba, Egypt, India, Nigeria, Pakistan, Russia, the UK and USA, IAP's BWG is engaging with UN organizations such as the Biological and Toxin Weapons Convention and the Organization for the Prohibition of Chemical Weapons (OPCW)[22], bringing to their attention challenges and developments in different regions of the world, as well as assisting in disseminating information to the regions, e.g. by supporting the organization of outreach workshops. Such efforts rely heavily on IAP products such as statements (e.g. on synthetic biology) and books on responsible research and research integrity.

Building a better world through science

[19] http://www.interacademycouncil.net/23942/23943/29494.aspx
[20] http://www.interacademycouncil.net/23942/23943/29492.aspx
[21] http://www.iapbwg.pan.pl/
[22] http://www.interacademies.net/2952/30298.aspx

2015 was a landmark year for a series of international agreements that have science at their core. On 25 September, the United Nations launched a set of 17 Sustainable Development Goals (SDGs)[i] with targets for achievement by 2030; and at the so-called COP21 meeting in Paris in December, world leaders agreed on a deal to rein in carbon emissions to tackle climate change[ii]. In addition, in March, world leaders agreed on the Sendai Framework for Disaster Risk Reduction 2015-2030[iii] – a framework that has particular relevance for the theme of this conference, 'New Steps in Critical Care and Catastrophe Medicine'. Indeed, the unlike its predecessor, the *Hyogo Framework* for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters[iv], the Sendai Framework specifically includes special mechanisms for the application science and technology to achieve its goals.

The Sendai Framework's Priority 1, article 25 (g), for example, states: "Enhance the scientific and technical work on disaster risk reduction and its mobilization through the coordination of existing networks and scientific research institutions at all levels and all regions with the support of the United Nations Office for Disaster Risk Reduction (UNISDR) Scientific and Technical Advisory Group in order to: strengthen the evidence-base in support of the implementation of this framework; promote scientific research of disaster risk patterns, causes and effects; disseminate risk information with the best use of geospatial information technology; and promote and support the availability and application of science and technology to decision-making."

IAP participated in the UNISDR Scientific and Technical Advisory Group that helped develop the text of the Sendai Framework[v,vi], and is now working with them on its implementation. In particular, a representative from the Indian National Science Academy has been appointed to act as a focal point for IAP.

But how do governments, United Nations organizations and other actors integrate the best science into their implementation plans to achieve one or other of the SDGs or the targets set by the Sendai and Paris agreements?

The IAP Conference held in Hermanus, South Africa, in February 2016, hosted by the Academy of Science of South Africa (ASSAf), investigated these issues by focusing on the topic of 'Science Advice'[vii]. In particular, one session focused on 'Science advice in times of disasters/emergencies'.

The session focused both on natural disasters such as earthquakes and typhoons, as well as disease epidemics such as the recent Ebola outbreak in three West African countries. Among the key points to emerge was that

preparedness and early warning systems can go a long way to avoiding the worst effects of natural disasters on lives, property, infrastructure as well as irreplaceable cultural heritage. Communication is critical and it can be especially important to reach out to local government and to keep local people informed of how they should prepare and react by providing advice in their own language[viii]

As the world's climate warms up and our global population continues to expand, humanity will be faced with additional challenges in the coming years. Tackling these challenges will require a sound scientific knowledge of their basis, as well as efforts to inform policy-makers of their implications.

IAP's efforts to support the formation and growth of new academies, share best practices, foster regional networks, and convene experts and decision makers from around the world will enhance the impacts of IAP's products and allow it to develop innovative new approaches to continue to address global challenges.

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[i] https://sustainabledevelopment.un.org/sdgs
[ii] http://unfccc.int/paris_agreement/items/9485.php
[iii] http://www.unisdr.org/we/coordinate/sendai-framework
[iv] https://www.unisdr.org/we/coordinate/hfa
[v] http://www.interacademies.net/26939.aspx
[vi] http://www.interacademies.net/2952/29527.aspx
[vii] http://www.interacademies.net/ProjectsAndActivities/10880/IAPConf2016.aspx
[viii] http://www.interacademies.net/News/29857.aspx

პიტერ ფ. მაკ.გრატი
მსოფლიოს მეცნიერებათა აკადემიების საერთაშორისო თანამშრომლობა
IAP,ტრიესტი,იტალია

განხილულია მსოფლიოს მეცნიერებათა აკადემიების თანამშრომლობის პრობლემები.მოყვანილია გაერთიანებული ერების ორგანიზაციის განვითარების დეპარტამენტის ეგიდით მომუშავე მსოფლიოს მეცნიერებათა აკადემიების რეორგანიზაციის პროცესი "ქოლგა" ორგანიზაციის IAP სახით,რომელშიც გაერთიანდნენ სამეცნიერო,სამედიცინო და ტექნოლოგიური პროფილის აკადემიები.თავის მხრივ ეს უკანასკნელები გაერთიანებულია ევროპის,აზია-წყნარი ოკეანიის,აფრიკისა და ამერიკის რეგიონულ ორგანიზაციებში.

ეს აადვილებს ამ აკადემიების მუშაობის კოორდინაციას და უფრო ეფექტურს ხდის მათ ძალისხმევას მეცნიერული კვლევების ხარისხის ამაღლების მიზნით.