InterAcademy Council

2008 ANNUAL REPORT OF THE IAC EXECUTIVE DIRECTOR

In 2008 the InterAcademy Council began a process of renewal and organization for undertaking a more ambitious array of projects in the years ahead. The IAC reconstituted the membership of the IAC Board for 2009-2013, revised Bylaws, and adopted an agreement with the InterAcademy Panel (IAP) for a wide ranging set of cooperative goals. Building upon past accomplishments, the challenges in 2009 are to identify which critical global issues the IAC should address going forward; to secure the required human and financial resources for mobilizing the world's best scientists, engineers, and medical experts; and to engage more fully government and industrial decisionmakers, the scientific and technological community, and the general public.

ELECTION OF IAC BOARD FOR 2009-2013

The IAC Bylaws required the present IAC Board to elect a new Board for 2009-2013. The Bylaws require the new Board to consist of 5 new members and 10 members that currently serve on the present Board. In addition to these fifteen academies, Board membership will also include ex-officio voting membership from representatives of the InterAcademy Panel (IAP), InterAcademy Medical Panel (IAMP), and International Council of Academies of Engineering and Technological Sciences (CAETS). Official Observers include representatives of the International Council for Science (ICSU) and the IAC host academy, the Royal Netherlands Academy of Arts and Sciences (KNAW).

Following the January 2008 IAC Board meeting, the IAC and IAP Co-chairs appointed an IAC Board Election Commitee consisting of the IAC and IAP Co-Chairs, plus four additional persons. The IAC Board Election Committee consisted of Bruce Alberts, Lu Yongxiang, Howard Alper, Chen Zhu, Eduardo Krieger, Goverdhan Mehta, Robbert Dijkgraaf, and Martin Rees.

In accordance with prescribed IAC Rule of Procedure, the IAP was requested to communicate with all IAP academies to ascertain which IAP academies wished to serve on the IAC Board. As a second step, IAP then submitted the list of nominated academies to its members requesting them to indicate their preference for fifteen academies to serve on the Board for 2009-2013. The results of this polling were tabulated, providing a general ranking of preferred academies by the IAP membership. This information was important input for decisionmaking by the Election Committee; however, the Committee was not restricted by the results of this polling in making its decisions. Among the criteria for Committee consideration were the following:
- Balance between developing and industrialized countries;

- Balance between the various regions of the world;
- Participation in other international science organizations; and
- Capacity to actively support the work of IAC

As a result of these inputs and deliberations, the Election committee proposed the following list of 15 academies as members of the IAC Board for 2009-2013:

1. Academy of Sciences for the Developing World (TWAS)
2. African Academy of Sciences
3. Argentina National Academy of Exact, Physical and Natural Sciences
4. Australian Academy of Sciences
5. Brazilian Academy of Sciences
6. Chinese Academy of Sciences
7. Académie des Sciences, France
8. German Academy of Sciences Leopoldina
9. Indian National Science Academy
10. Indonesian Academy of Sciences
11. Science Council of Japan
12. Turkish Academy of Sciences
13. Academy of Sciences of South Africa
14. The Royal Society, United Kingdom
15. United States National Academy of Sciences

The new Board members are as follows:

1. Australian Academy of Sciences
2. Argentina National Academy of Exact, Physical and Natural Sciences
3. German Academy of Sciences Leopoldina
4. Indonesian Academy of Sciences
5. Academy of Sciences of South Africa

In September 2008, the IAC Board members agreed to this slate of academies with a required two-thirds majority vote. The new Board will convene at its first meeting on 23 March 2009.

IAP-IAC COOPERATION

In January 2008, the InterAcademy Council Board and InterAcademy Panel (IAP) Executive Committee agreed upon a Memorandum of Understanding, which specified a cooperative agenda between the two organizations.

For the near term, IAC and IAP agreed to the following:

1. IAP and IAC will consult each other in the development of strategic plans and actions and they will collaborate in all relevant programmatic activities;

2. The IAP Executive Committee and the IAC Board will meet at least once a year in joint session to discuss all issues of common concern;
3. IAP and IAC will organize, in cooperation with member Academies, joint regional workshops on the implementation of IAC reports;
4. IAP and IAC will participate with joint delegations in international fora, such as the World Economic Forum in Davos and the STS Forum in Kyoto, as well as in international organizations, such as ICSU;
5. The Co-Chairs of IAP and the Co-Chairs of IAC will keep each other informed of all developments that may be of common interest;
6. The Secretariats of IAP and IAC will cooperate with a view to ensuring the effective implementation of the actions outlined above;
7. IAP and IAC will consult with CAETS and IAMP with a view to including these two organizations in the above actions whenever relevant;

For the near term future, IAC and IAP agreed to the following:

1. IAP and IAC will develop procedures and a mechanism to issue, on a regular basis, common reports on the state of global science and global science policies;
2. IAP and IAC will undertake joint fundraising efforts and establish a common foundation to receive and manage any funds so generated;
3. IAP and IAC will develop a joint logo and other visual materials to convey the message that they have common beliefs, purposes and actions;
4. IAP and IAC will explore the creation of a common Secretariat headed by a single Executive Director;
5. IAP and IAC will consult with CAETS and IAMP with a view to including these two organizations in the above initiatives whenever relevant;

For the longer term, IAC and IAP agreed to the following:

1. If it is decided to have a common Secretariat, IAP and IAC will explore the merging of both organizations into a single new organization;
2. In exploring such a possible merger, IAP and IAC will consult with CAETS and IAMP to determine whether or not they wish to join; and
3. In exploring such a possible merger, IAP and IAC will consult with ICSU on cooperative mechanisms to maximize impact on decision-makers worldwide.

IAC PROGRAMS

A. Follow-up to IAC Energy Report

On 22 October, 2007, the InterAcademy Council released *Lighting the Way: Toward a Sustainable Energy Future*. This report was commissioned by the Governments of Brazil and China. During 2008, copies of the report have been distributed to relevant international organizations, as well as to all scientific, engineering, and medical academies throughout the

world for dissemination to academic, governmental, and industrial leaders in their nations. The IAC is providing copies of the report to the general public as requested. The full text of the report is available online in HTML and PDF formats for reading or downloading at www.interacademycouncil.net.

As a crucial next step following the release of *Lighting the Way,* a series of regional workshops of scientists and technologists began during 2008 by multinational associations of scientific and technological academies in the Americas, Europe, Africa, Asia, and the Middle East. The purpose of these conferences are (1) to develop a common agenda among scientific organizations for ongoing engagement in issues related to the needed transitions to sustainable energy resources and utilization and (2) to promote an action agenda by individual scientific organizations for engaging their own memberships and governments in efforts for achieving a sustainable energy future.

IANAS Workshop. On the invitation of the IAP and the IAC, the Interamerican Network of Academies of Sciences (IANAS), in partnership with the National Academy of Exact, Physical and Natural Sciences of Argentina and the Argentinean Ministry of Science, Technology and Productive Innovation, organized the IANAS Workshop "Toward a Sustainable Energy Future", which was held at the headquarters of the Argentinean Center of Engineers, in Buenos Aires, on 30-31 October 2008. The main objectives of this workshop were to present to key stakeholders in Latin America and the Caribbean region the conclusions and recommendations of the IAC Report "Lighting the Way: Toward a Sustainable Energy Future", to review the energy-related issues and challenges for the Americas, and discuss the strategies and mechanisms needed for regional implementation of the actions needed to effect a transition to a more sustainable way of life. The workshop brought together 130 high-level experts from 15 different countries, covering North America, Central America, South America and the Caribbean region. The Special Advisor on Sustainable Energy to the IAC Co-Chairs, Dato Lee Yee-Cheong from Malaysia was also present. The participants were from academia, multilateral organizations, government, the private sector and non-governmental organizations. The workshop concluded with the following recommendations:

- IANAS should work with the S&T community of South America and the Caribbean Region through the Academies (and/or other representative institutions in countries that do not have Academies of Science) to provide the best available evidence-based advice to Government regarding energy policy;

- Energy efficiency, from generation to final use, and the development and deployment of renewable and low-carbon energy sources must be the core aims of all future energy policy;

- A technology roadmap of renewable energy technologies must become a key part of the development strategies in all countries of the region;

- A vigorous capacity building program, addressing all levels of education, from primary school to advanced professional science and engineering focused on energy is urgently needed; this program should start immediately;

- It is essential to engage citizens of each country in this transition. An energy information and consciousness-raising program is urgently needed.

- Multilateral agencies, such as the OAS and organisms, such as the IADB and World Bank must intensify their focus on energy policies, technologies and practices.

AASA Workshop. As part of the AASA' "Sustainable Development in Asia" project, "The AASA Workshop on Sustainable Energy Development" was held on 17-18 November in Beijing, China. The events were organized by AASA and CAS, hosted by Institute of Electrical Engineering of CAS and sponsored by InterAcademy Panel (IAP) and InterAcademy Council (IAC). Participants included 30 representatives of ten academies: Bangaldesh, Iran, Korea, Malaysia, Philippines, Sri Lanka, Thailands, Turkey, and China. Two observers were Dr. Yee-Cheong Lee, Secretary General of the Federation of Asian Scientific Academies and Societies (FASAS) and Special Advisor on Sustainable Energy to the IAC Co-Chairs; and Prof. H. K. Gupta, Raja Ramanna Fellow of National Geophysical Research Institute, India. Participants shared information about the energy situation in their own country and address the common challenge in Asia. Recommendations were also made on how to prepare a consultative report on sustainable energy development in Asia. Among the topics of the proposed advisory report would be the following:

- Official statistics such as annual primary energy consumption, production, primary energy resources and structure, import and exports, and forecasts for next 20-40 years.

- General energy situations in Asian countries.

- Recommendations for energy supply and consumption, in accordance with social and economic development needs and environmental and climate change limits.

- Promotion of South-South cooperation in energy R&D.

B. Disease Surveillance Project

The InterAcademy Council, in partnership with the InterAcademy Medical Panel, agreed at it January 2008 meeting to undertake an independent, evidence-based policy study to make recommendations for further development of global surveillance capabilities for addressing emerging zoonotic diseases, such as avian influenza and SARS. Such a study would include the appropriate roles for present and future participants; coordination and reporting mechanisms; the required human, scientific and technological capacities; and the related costs to improve the world's disease surveillance capability.

During 1-2 May 2008, an Organizing Group met in Paris at the Académie Nationale de Médecine to discuss a prospectus for an IAC-IAMP policy study on the topic of "Improving Global Surveillance of Emerging Infectious Diseases." Participants included the following: Guy de Thé (IAMP Co-Chair, Pasteur Institute), Anthony Mbewu (IAMP Co-Chair, Medical Council of South Africa), Ximena Aguilera (Pan American Health Organization), Andrea Ammon (European Centre for Disease Prevention and Control), David R. Challoner (former IAMP Co-Chair, University of Florida), Yves Charpak (Pasteur Institute), Fu Gao (Chinese Academy of Sciences), Jörg Hacker (Robert Koch-Institute, Berlin), David Heymann (World Health Organization), Patrick W. Kelley (U.S. Institute of Medicine), Mark S. Smolinski (Google.Org), John P. Campbell (IAC). The meeting was chaired by Dr. David Challoner.

The Organizing Group addressed the following topics:

- Scope and content of the proposed policy study
- Suggested study report chapters
- Topics of study-associated workshops
- Topics for suggested commissioned papers
- Needed expertise of the study panel

The Organizing Group suggests that the study panel should focus its primary attention on how to improve the disease surveillance system within the next five years. Given the current disease surveillance system, where should we go? What structural/organizational changes are necessary? What resources are required? What scientific/technological contributions are needed?

Overarching suggestions from the Organizing Group include the following:

- The Organizing Group strongly recommended that the study view improved disease surveillance as part of the larger goal of global health capacity-building. For improved disease surveillance, effective national health policies and capacities are essential.

- A “safety net” of global networks in needed assist national efforts and to take international action when necessary.
- The measurable goal of improved disease surveillance should be more rapid response.
- The study panel report recommendations should address actions encompassing both short-term and long-term implementation.
- Corporate support and involvement is essential.
- The definition of emerging infectious diseases should be expanded to include new drug-resistant organisms.
- Recommendations for new global networks should be seen as in the interest of all nations, not just the industrialized nations. IAC can play an effective role in this.
- Report text boxes are needed to describe different outbreaks and how handled, with lessons learned.

The Organizing Group recommended that the study panel members address the following questions:

- What is the necessary infrastructure for surveillance? How can different levels interact more effectively: local, national, international levels?
- What tools are needed for better surveillance?
- Who should have access to information? How open should the information system be? Open to whom?
- How can be a global public health agenda be agreed upon and organized; who is to be involved and how is it to be financed?
- How to best handle intellectual property issues regarding pathogens.
- What are emerging new data sources?
- How to improve knowledge of animal-human interactions?
- How can the international community better support national health capacities?
- How to link current initiatives more effectively?
- What tools are needed for better surveillance?
- How to improve public health career incentives?
- How to create better coordination between private and public laboratories.

The Organizing Group identified topics for workshops to be held in Asia, Africa, Europe, and the Americas.

Asia Workshop

- Gap analyses
- Clarification of what has to be “plugged”
- Animal-human interactions
- Innovative surveillance systems, such as the Mekong Delta project of Rockefeller Foundation)
- Lessons learned from Pacific Islands Surveillance System or USDOD in Bangkok.

- Influenza as a special focus (reviewing obstacles to containing in influenza)
- Better linking epidemiology with virology and bacteriology.
- New technologies: communications, laboratory methods for remote use, etc.
- Review of the regional office of WHO.

African Workshop.

- Analysis of blood from hunted animals; screening from blood donors.
- Bioinformatics
- Vector research
- Need for better coordination between Anglophone and Francophone countries in Africa

European Workshop

- Improving sharing of data across countries and institutions.
- Greater coordination and data sharing among veterinary and human health experts.

Americas Workshop

- Ecological considerations – such as climate change in the Amazon
- Dengue Fever
- Water-borne diseases

Given the complex set of issues to be addressed by the study panel, the Organizing Group recommends that study panel members be selected so as to encompass the following areas of expertise: Infectious diseases (vector, transmission expertise); Veterinary medicine: public health, domestic and international expertise, wildlife; Public health laboratory expertise – lab networks and diagnostics; Informatics; Bio-informatics; Governmental-ministerial experience; General global public policy experience; Virology; Bacteriology; Epidemiology; Genetics; Ecology; Economics; Behavioral sciences; Anthropology/sociology; and International legal expertise: treaties, intellectual property.

C. Women for Science

As a follow-up in 2008 to the IAC report *Women for Science*, it is proposed that a series of workshops be convened and sponsored by partner organizations. The purpose of these workshops will be (1) to develop a common agenda among academies for promoting the full participation of women in scientific and technological fields, and (2) to develop an action agenda for individual academies to contribute to this effort. Participants will include representatives of academies of sciences, engineering, and medicine.

D. Global Water Challenges

The InterAcademy Panel has sponsored a program of activities devoted to issues related to water resources. The Brazilian Academy of Sciences serves as lead academy for this IAP Water Research and Management Program. This program has sponsored workshops in several countries focusing on regional water challenges. Major topics include science-based solutions

for mitigating major sources of pollution in streams, rivers, and lakes; and improving access to safe drinking water. In support of the IAP Water Research and Management Program, in 2009 the IAC Board will sponsor an Organizing Group to plan a series of in-depth science-based advisory studies on policies for addressing critical needs related to water resources. This IAC study program could include such topics as drinking water resources, agricultural water resources, water recycling, and impact mitigation of a potential rise in sea level.

D. Role of African Universities in Innovation

The IAC, in partnership with African scientific academies, as agreed to undertake a short-term advisory project to develop a set of recommendations for strengthening the contributions of universities and other higher education institutions in Africa for innovation and national development. To accomplish this goal, it is proposed that a study panel be constituted by IAC to seek to ensure that the recommendations generated reflect readily the conditions and systems as they vary from country to country. The audience for this project would include the African Association of Universities (AAU), the New Partnership for Africa's Development (NEPAD)**,** the African Ministerial Council for Science and Technology (AMCOST), and the African Development Bank (AfDB). The recommendations would be of relevance to university administrators, staff/faculty, and research personnel; African government officials; academies of science and/or technology; international organizations such as UN organizations and the World Bank; and governmental and private financial contributors to international development.

THE IAC BOARD IN 2008

At the beginning of 2008, the IAC Board was composed as follows: *Co-Chairs*: **Bruce Alberts**, President Emeritus, U.S. National Academy of Sciences; **Lu Yongxiang**, President, Chinese Academy of Sciences; *Members*: **Howard Alper**, Co-Chair, InterAcademy Panel on International Issues**; Reza Davari Ardekani**, President, Academy of Sciences of the Islamic Republic of Iran; **Engin Bermek**, President, Turkish Academy of Sciences; **Achiel van Cauwenberghe**, Past President, International Council of Academies of Engineering and Technological Sciences (CAETS); **David Challoner,** Former Co-Chair, InterAcademy Medical Panel (IAMP); **Ralph Cicerone**, President, U.S. National Academy of Sciences; **Mohamed H.A. Hassan**, President, African Academy of Sciences; **Jules Hoffmann**, President, Académie des Sciences, France; **Ichiro Kanazawa**, President, Science Council of Japan; **Matthias Kleiner**, President, Deutsche Forschungsgemeinschaft; **Eduardo Moacyr Krieger**, Past President, Brazilian Academy of Sciences; **Servet Martinez Aguilera**, President, Chilean Academy of Sciences; **M. Vijayan**, President, Indian National Science Academy; **Jacob Palis**, President, Academy of Sciences for the Developing World (TWAS); **Martin Rees**, President, The Royal Society of London; **Salleh Mohd Nor**, Vice-President, Academy of Sciences of Malaysia; **S.E. Vizi**, President, Hungarian Academy of Sciences. *Observers*: **Frits van Oostrom**, President, Royal Netherlands Academy of Arts and Sciences; and **Goverdhan Mehta**, President, International Council for Science (ICSU.

THE IAC SECRETARIAT

The IAC Secretariat is hosted by the Royal Netherlands Academy of Arts and Sciences in Amsterdam. On 2 July 2008, the IAC Co-Chairs informed the President of the Netherlands Academy of Arts and Sciences (KNAW) that the IAC will continue to be located at the KNAW in Amsterdam under the current agreement between the IAC and the KNAW. The IAC Co -Chairs look forward to an even stronger partnership between the KNAW and the IAC in the next years. **John P. Campbell** continues to serve as IAC Executive Director. He assumed this position in May 2005 and re-located to Amsterdam from Washington, DC, where he had been a staff officer at the U.S. National Academies. **Paulo de Goes** serves as IAC Associate Director. **Albert Koers**, former IAC Executive Director, continues as IAC General Counsel. In September 2008, **Anne Muller** joined the IAC staff as Program Coordinator. During 2008, administration of the IAC Secretariat was assisted by **Henny Beers**. The IAC continues to employ consultants, serving as needed for professional staffing of studies and publication development.

John P. Campbell
IAC Executive Director
10 March 2009