

comment

A global corps of scientists to research a better future

A new programme will build bridges between US academia and universities in developing countries, to the benefit of all, write Kiera Carlisle and Arlen Hastings

African scientists are set to benefit from a fledgling programme aimed at promoting north-south research collaboration through year-long visits to centres of scientific excellence in developing nations by scientists from the US and other developed countries.

The Global Science Corps (GSC) was inspired by a visit to a research institute in Mali by Nobel laureate Dr Harold Varmus, who was impressed with the quality and originality of work being carried out by one of the world's poorest nations. The GSC aims to support and enhance the work of such centres of excellence, while affording unique opportunities for US scientists to engage in meaningful research in the developing world.

GSC host sites will be research facilities in universities, institutes, or other appropriate settings, with sufficient scientific personnel and infrastructure to provide a productive research experience for, and to gain from interaction with, a visiting scientist. While the GSC may include host institutions in any area of science, those providing access to resources not available

in the developed world (such as botanical specimens), or focusing on concerns specific to developing countries (such as tropical diseases) may hold special appeal for GSC fellows.

These fellows will range from postdoctoral scholars seeking novel research opportunities, to mid-level scientists wishing to reinvigorate their careers, to senior scientists at or near retirement. Fellowships will emphasise research and may include some lecturing and teaching. Year-long placements will be preceded by short visits, during which fellow and host will have the opportunity to design joint research programmes. During the fellowship year, fellows will engage with their hosts in collaborative research in areas of strategic importance to the host institute and country, and may provide instruction in new research techniques. In some cases, the programme will provide limited scientific equipment and supplies for the host institution.

The GSC will encourage and support long-term collaboration through electronic communication, possible

Not a drop to drink?

Kevin Pietersen explains what policymakers need to know to boost water sciences in Africa

The provision of safe water and adequate sanitation services to the rural and rapidly expanding urban populations of Africa is critical to reduce water-borne illnesses and deaths. Safe water is a prerequisite for both health and success in the fight against poverty and hunger. Water is also a vital resource for supporting economic development and sustaining the environment.

The recently published African Environment Outlook 2 report recognises that "natural phenomena such as rainfall patterns and climate change and variability, and human factors, such as population growth, competition over water, and pollution, increasingly threaten the sustainability of resources, and hence the livelihoods of many, particularly poor, people".

Achieving the developmental goals related to water in Africa will require investments in science and technology. However, such programmes need to be structured and should encompass a viable strategy to ensure relevance, continuity and sustainability. Furthermore, these

programmes should have systems to ensure that progress is measurable so that they may be refined to address future needs and perspectives. This type of initiative requires rigorous management and effective feedback loops to ensure that key goals and objectives are met. Stringent financial management will secure optimal return on investment and make progress noticeable.

SUCH A PHILOSOPHY is echoed by the African Ministerial Council on Science and Technology (Amcost), which decided that water sciences and technology should constitute one of the flagship programmes of the African Union (AU) Commission and the New Partnership for Africa's Development (Nepad). This innovative programme focuses on:

- Improving the conservation and utilisation of Africa's water resources.
- Improving water quantity and quality in both urban and rural households.

exchange visits, and the establishment of a GSC alumni network. Over time, it is hoped that collaborations will lead to innovations that can improve the economies, environment and public health of participating countries around the world.

WHILE THE GSC will be open to qualified host sites throughout the developing world, the initiative has found particular resonance in Africa. The United Nations Development Programme Special Unit for South-South Cooperation is supporting the development of a GSC component targeting African scientists who have left their countries of birth and others from advanced developing countries interested in working in Africa. In organised forums and informal communications, African scientists have expressed strong support for the GSC concept, and scientists in Africa and in the Diaspora are helping shape the programme.

Similarly, the response from scientists in the United States and Canada has been overwhelmingly positive, with many eager to spend a post-doctoral or sabbatical year in Africa. Several US universities have agreed to offer the GSC as a sabbatical opportunity for staff.

The administrative home for the GSC is provided by the Science Initiative Group (SIG), a small international team of scientists dedicated to building scientific capacity in the developing world. SIG also works in informal

partnership with the World Bank to manage the Millennium Science Initiative (MSI), which supports centres of scientific excellence in developing countries.

MSI centres will be among the host sites for the GSC, as will other centres of comparable scientific excellence.

The goal is to have in hand sufficient funds to place a pilot group of five to ten fellows in 2007, with growth after that as resources permit. Administrative partnerships have been formed with the Institute for International Education and the African Academy of Sciences that will allow the programme to be put into operation quickly once funding is in place. In the coming months, talented and enthusiastic scientists will

be recruited into GSC fellowships, while promising host sites in Africa and elsewhere will be identified and mutually productive matches made.

The world scientific community has already begun to recognise the potential benefits of a Global Science Corps and it is hoped that multilateral organisations, universities, foundations and philanthropists will share that enthusiasm.

Kiera Carlisle and Arlen K Hastings work with the Science Initiative Group that provides strategic direction, quality monitoring and scientific guidance for the Millennium Science Initiative. See www.globalsciencecorps.org

**“African scientists have expressed strong support for the GSC and are helping to shape the programme”
Carlisle, Hastings**

- Strengthening capacity for water resource management and reducing the impacts of water-related disaster.

- Widening the range of water technology, and improving access to potable water.

The solution to achieving these goals is to build an African network of centres of excellence to address, primarily, water research and development as well as capacity-building programmes. Capacity building should be a priority in such a programme so that sustainability can be virtually guaranteed. In this regard, a strong mentorship programme is a prerequisite for success. The capacity-building programme will ensure that the network grows exponentially.

With the backlog in Africa, such phenomenal growth is necessary!

THE INITIATIVE is being supported by the French government through the French Institute of Research for Development, and a multi-disciplinary task team of

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experts and policy makers has been established to steer the process.

The subject of water science is broad and comprehensive. Therefore, a collaborative dialogue between Amcost and the African Ministerial Council on Water (Amcow) is virtually obligatory. Topics and focus areas need to be identified and discussed. The eventual programme may be refined until the end is reached. The idea is to discuss financial and governance mechanisms of the network.

Ideally, the network should function proactively as a knowledge-based entity. Such a dynamic body requires thorough planning and discussion. The meeting is scheduled to take place on 21 November in Cairo, Egypt.

It is hoped that the inter-ministerial dialogue will create the necessary momentum to build the networks and, with the necessary financial support, implement key programmes and projects.

**“With Africa’s backlog in water research capacity, there needs to be exponential growth in mentoring networks”
Pietersen**