Science Initiative Group Institute for Advanced Study

THE INSTITUTE for ADVANCED STUDY

and the

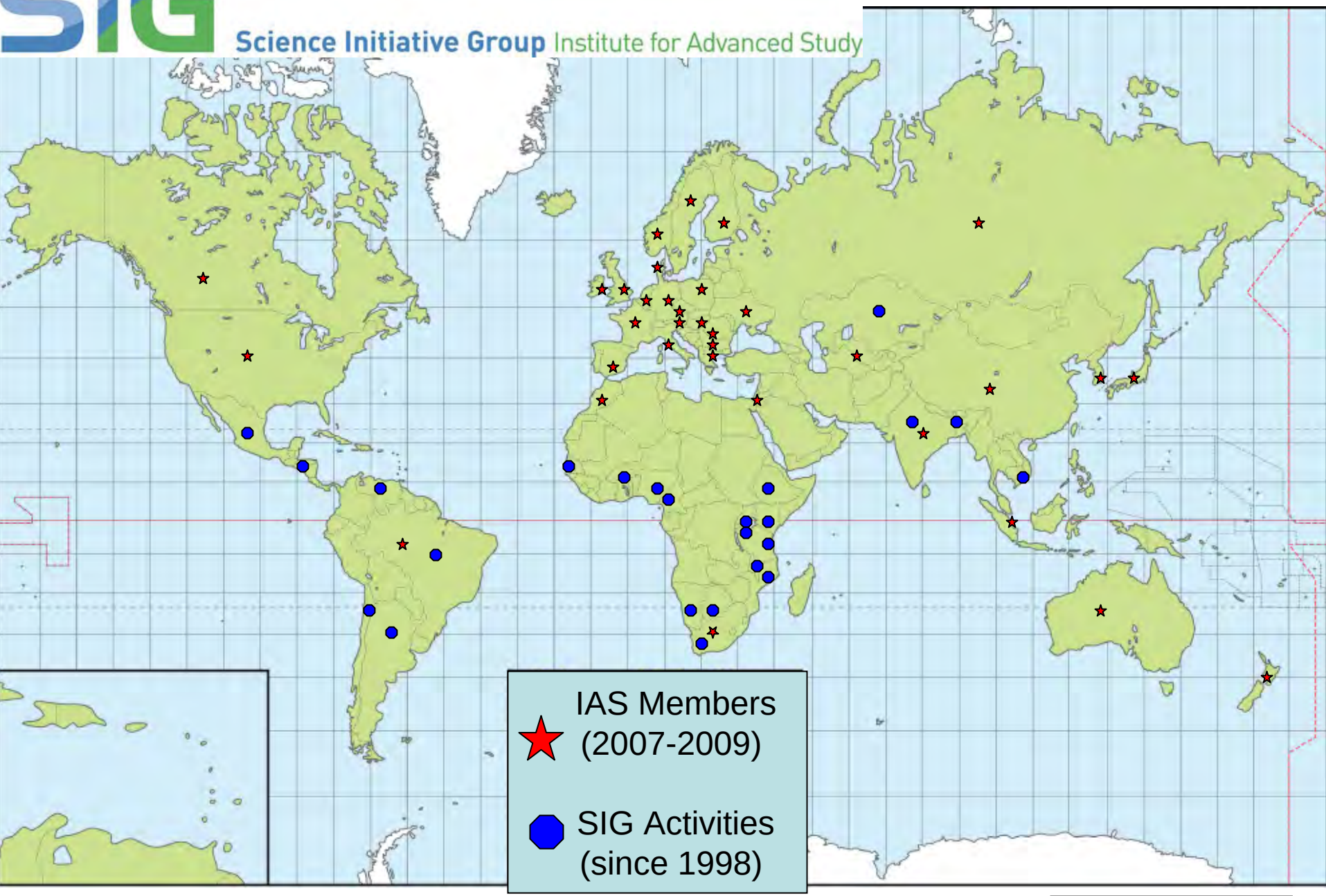
GLOBALIZATION *of* SCIENCE

PHILLIP A. GRIFFITHS
ARLEN K. HASTINGS

IAS FRIENDS' FORUM
DECEMBER 3, 2008

www.ias.edu/sig

SIG Science Initiative Group Institute for Advanced Study

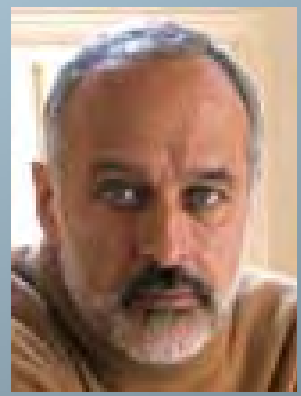


www.ias.edu/sig

It all started with James D. Wolfensohn:
Chairman, IAS Board of Trustees,1986-2007
President, The World Bank, 1995-2005

and

Claudio (Teitelboim) Bunster:
Member, IAS, 1978-80 & 1989
Science Advisor to



President Eduardo Frei, Chile,
1994-2000

www.ias.edu/sig

Origins of the MSI: Chile 1998

GOBIERNO DE CHILE
MINISTERIO DE PLANIFICACION
integra y protege

INICIATIVA CIENTIFICA MILENIO
ICM

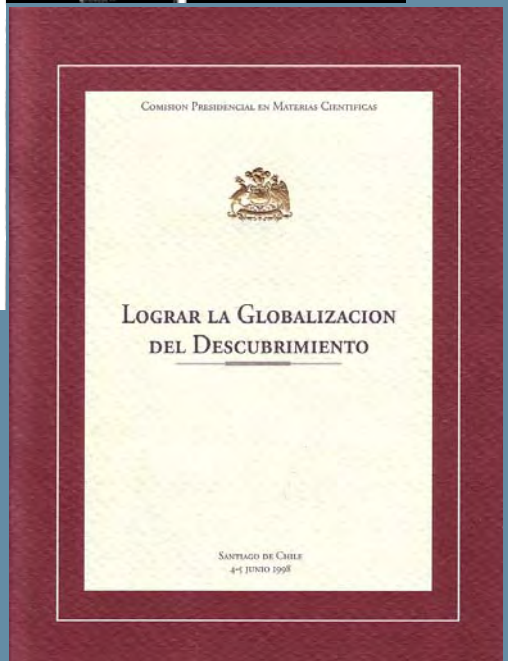
A 10 VIDA SOCIAL

Ciencia y Tecnología para el Futuro de Chile

EL 4 y 5 de junio se realizó la cumbre de científicos convocada por el Presidente Frei para evaluar y determinar las acciones que nuestro país deberá emprender en los conocimientos científicos, tecnológicos y educacionales.

A la Comisión Presidencial en materias científicas se unió un panel de expertos internacionales que se propusieron pensar cómo lograr la globalización del descubrimiento, es decir, proponer que la ciencia esté al servicio de los chilenos y de las relaciones de nuestro país con el mundo. En el marco de esta convocatoria, que contó con el patrocinio del Banco Mundial y del Instituto de Estudios Avanzados de Princeton, el Presidente Frei ofreció una comida en el patio de Las Camelias del Palacio de la Moneda para saludar a los científicos, académicos, empresarios y diplomáticos interesados en esta reunión de alto nivel.

www.mideplan.cl/milenio



EL MERCURIO
Santiago de Chile, lunes 8 de junio de 1998 $ 300

INTERES CIENTIFICO EN PASCUA.— *Retornaron anoche a Santiago especialistas de Estados Unidos, del Reino Unido, Corea, Alemania y Chile, luego de un viaje de conocimiento a Isla de Pascua como corolario de un seminario efectuado en la capital, en que examinaron los desafíos científicos y tecnológicos del próximo siglo. Los expertos abogaron por un mayor acercamiento entre la ciencia y la industria moderna para beneficio del país. La fotografía fue captada en el volcán Rano Raraku, donde los hombres de ciencia observan un deteriorado moai, antes del regreso al continente.*

Funding

CARNEGIE CORPORATION OF NEW YORK 1911

the David & Lucile Packard FOUNDATION

THE ANDREW W. MELLON FOUNDATION

The World Bank

THE ROCKEFELLER FOUNDATION

NATIONAL ACADEMY OF SCIENCES
THE NATIONAL ACADEMIES

UNDP

SIG Board established June 1999. Current membership:

← Phillip Griffiths*, Institute for Advanced Study, USA (chair)

Mohamed Hassan, TWAS & African Academy of Sciences, Trieste, Italy →

← J. Tomas Hexner*, Development Consultant, USA

Chung W. Kim*, Korea Institute for Advanced Study →

← Jacob Palis*, Instituto Nacional de Matemática Pura e Aplicada (IMPA), Rio de Janeiro, Brazil

← CNR Rao*, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore, India

Harold Varmus, Memorial Sloan Kettering Cancer Center, USA →

Staff:

Arlen Hastings* →

and sometimes

← Lori Piranian

← Alan Anderson

Kiera Carlisle →

*Founding Members

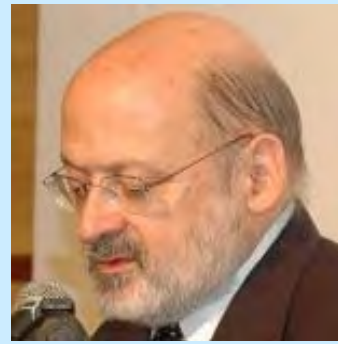
Institutos do Milênio

Uma nova era para a pesquisa e o desenvolvimento do Brasil

Brazil MSI

→National Institutes of Science & Technology

F. H. Cardoso

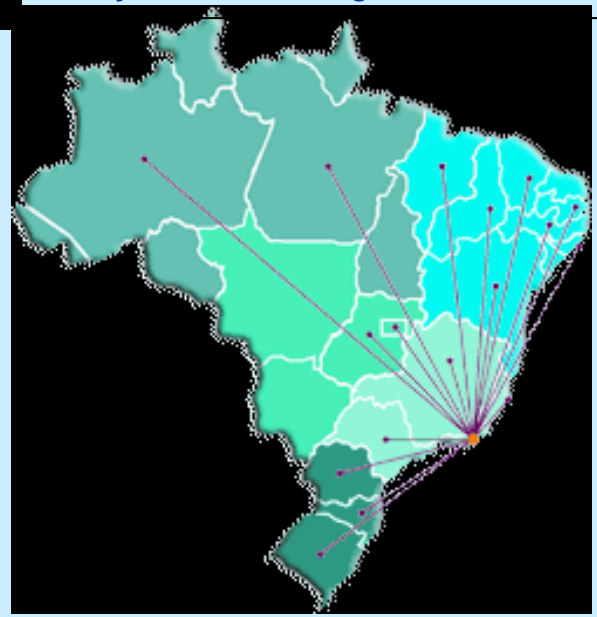


R. Sardenberg

CNPq

IM-AGIMB

Instituto do Milênio
Avanço Global e Integrado da Matemática Brasileira



Instituto do Milênio RECOS

Uso e Apropriação de Recursos Costeiros

Milênio

www.cnpq.br/programas/milenio

African Mathematics Millennium Science Initiative

www.ammsi.org

- A network of mathematics research, training and promotion throughout sub-Saharan Africa
- Fellowships, scholarships, conferences

AMMSI Regional Coordinators:

Wandera Ogana
U of Nairobi,
Kenya
(East Africa)
Program Coordinator

Bitjong Ndombol
U of Yaoundé,
Cameroon
(Central Africa)

Edward Lungu
U of Botswana
(Southern Africa)

Samuel Ilori
U of Ibadan,
Nigeria
(Western Africa –
Anglophone)

Hamidou Toure
U of Ouagadougou,
Burkina Faso
(Western Africa –
Francophone)

Uganda MSI

Y. Museveni

Kampala, 2002

www.uncst.go.ug

Lessons Learned: Essentials for Success

Mexico

Committed science administration that endures changes in government.

Vietnam

Involvement & support of government entity responsible for budget & planning.

Central America

Respected scientist/administrator to drive the process.

The Rise of RISE: 2006-2007

Idea: new ways to support higher education in Africa

➔ **Carnegie planning grant to SIG/IAS, April 2007**

➔ **Planning workshop, Nairobi, June 2007**

Consultations, July-November 2007: Botswana, Ethiopia, Kenya, Nigeria, Rwanda, Senegal, Tanzania, Uganda; also AAS, AAU, IFS, NAS, PHEA, TWAS, World Bank, U.S. university partners

G. Ogunmola
Nigeria

W. Ogana/ P.Masila
Kenya

J. Olang/ T. Egwang
Kenya/Uganda

B. Abegaz
Botswana/
Ethiopia

A. Johnson
Carnegie Corp

S. Lwakabamba
Rwanda

T. Givens
UT-Austin

W. Soboyejo
Princeton U

Senegal/
Kenya/UK/
Netherlands

RISE Timeline, 2007-2008

9/07 - $3.5 million grant from Carnegie Corporation for three networks

12/07 - Request for Concept Proposals

1/08 - Selection Committee appointed:

Lishan Adam
Ethiopia

John Ball
UK

Anthony Cheetham
UK/US

Cheryl de la Rey
South Africa

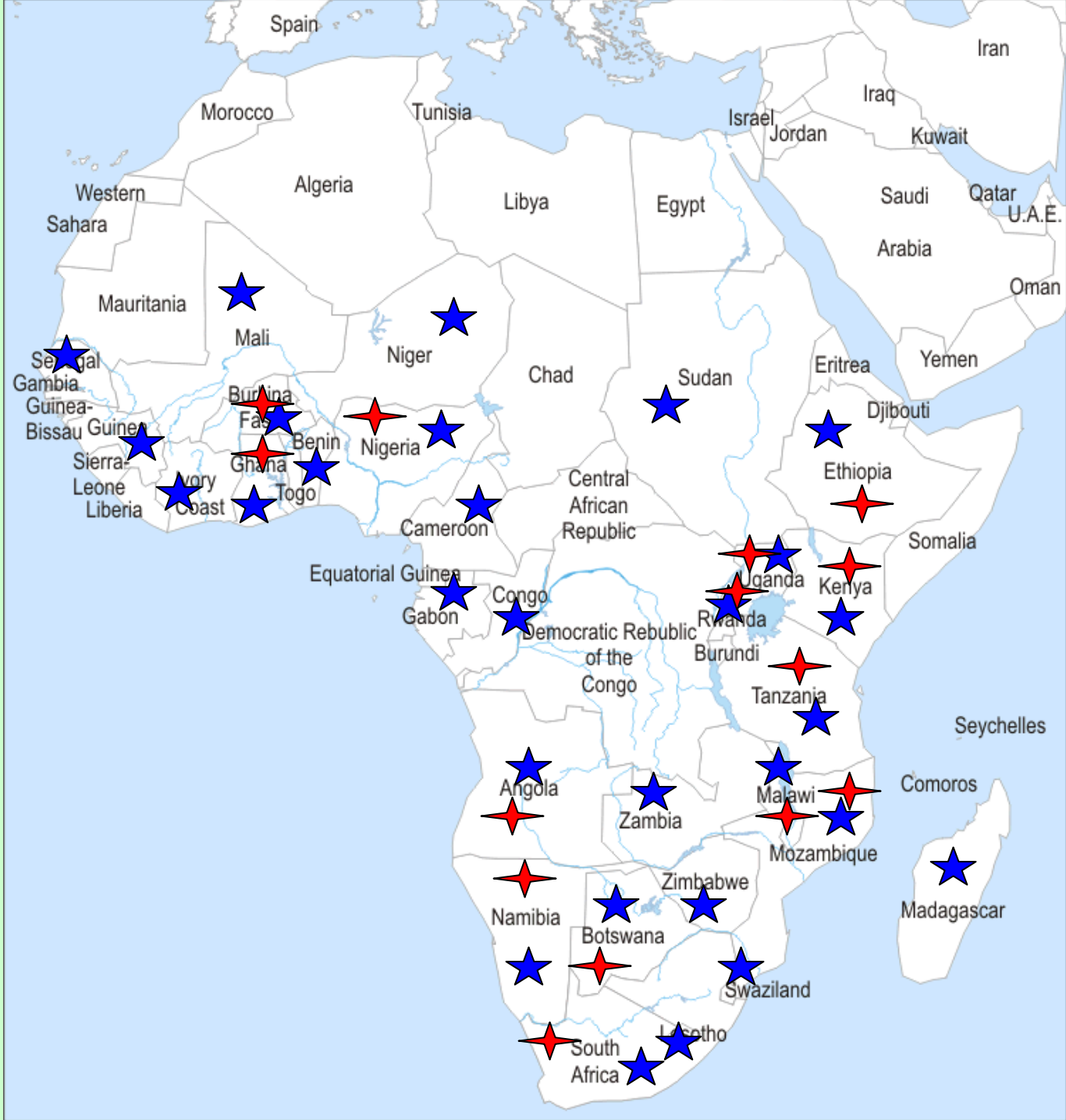
Nighisty Ghezae
Eritrea/Sweden

Narciso Matos
Mozambique

3/08 - Concept Proposal deadline

48 concept proposals involving 29 countries

12 finalists involving 14 countries



RISE Timeline, continued

- **7/08 - Partnership with African Academy of Sciences**
- **7/08 - Three networks announced**
- **9/08 - $1.6 million grant from Carnegie for two additional networks**
- **10/08 - Inaugural meeting of RISE network representatives, Nairobi ⬇**

RISE Networks

AMSEN
(SA, Botswana, Kenya, Namibia, Nigeria)

RISE-AFNNET
(Uganda, Kenya, Tanzania)

SABINA
(Malawi, Namibia, Tanzania, SA)

SA WATER
(SA, Botswana, Mozambique, Uganda)

WIO-RISE
(Tanzania, Mozambique, SA)

AMSEN: African Materials Science and Engineering Network

University of the Witwatersrand, South Africa
University of Namibia
University of Nairobi, Kenya
Federal University of Technology, Akure, Nigeria
University of Botswana

Increased skills in materials science and engineering are needed in southern Africa to develop and add value to the region's extensive mineral deposits. AMSEN will benefit from existing collaborations, including the DST/NRF Centre of Excellence in Strong Materials and the Wits-Namibia Engineering Curriculum Development Program in nanotechnology. To reduce the brain drain from academia to industry, AMSEN plans a retention strategy that includes allowing staff to consult for and be seconded to industry.

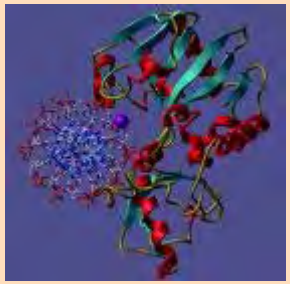
RISE-AFNNET:

African Natural Products Network

Makerere University, Uganda
University of Nairobi, Kenya
Sokoine University, Tanzania

RISE-AFNNET seeks to develop Africa's rich biodiversity into a natural products industry of social and economic significance. RISE-AFNNET will expand existing research programs and formalize educational activities in such natural products fields as engineering, biochemistry, environmental science, pharmacology, economic development, and nutrition. Students will be recruited to identify and work on natural products research projects in the context of poverty alleviation, gender equity, and Millennium Development Goals.

SABINA: Southern African Biochemistry and Informatics



University of Malawi
University of Namibia
University of Dar es Salaam, Tanzania
University of Pretoria, SA
University of the Witwatersrand, SA
Council for Scientific and Industrial Research, SA
Tea Research Foundation of Central Africa, Malawi

Because of the great biodiversity of southern Africa, increased capacity in natural products research has the potential to increase food security, public health, and value-added exports. SABINA will train scientists through research in the biochemistry and chemistry of natural products. Research will focus on increasing the understanding of useful plants or fungi through the study of screening assays, biosynthetic pathways, gene expression, modes of action, synthetic production, and genetic diversity.

Southern Africa Water Resources Network

Rhodes University, South Africa
Eduardo Mondlane University, Mozambique
University of Botswana
Makerere University, Uganda

The Southern Africa Water Resources Network builds on two existing networks – one that emphasizes research and another that promotes postgraduate education. It intends to address the most pressing water issues of the region, including rising use, declining quality, insufficient research and teaching capacity, inadequate observation networks, and the likelihood of increased variability of water supplies associated with future climates. Students will be encouraged to interact with one another to exchange research experience, develop a culture of multidisciplinary problem solving and participate in consultancy work.

WIO-RISE: Western Indian Ocean Regional Initiative

University of Dar es Salaam, Tanzania
Eduardo Mondlane University, Mozambique
University of Cape Town, South Africa

WIO-RISE will promote research and training in skills that strengthen sustainable development, utilization of coastal and marine resources, and protection of the coastal and marine environment. The network will take advantage of the long experience of UDSM's Institute of Marine Sciences and the affiliated Western Indian Ocean Marine Science Association based in Zanzibar. The School of Marine and Coastal Studies at Eduardo Mondlane University is strategically located near the Sofala Bank, a major fishery and aquaculture resource, and the University of Cape Town has the only department in southern African offering graduate training in physical oceanography, climate science, and atmospheric science.

Many of the challenges that science faces today – for instance, climate change, food and energy security, and the spread of infectious disease – are global in nature and require a global response. These factors make international collaboration in science more important than ever. Yet, successful collaboration depends on all parties having a certain level of scientific and technological capacity. That is a primary reason why scientific capacity must be built in developing countries. In fact, projects that fail to help build a strong scientific base – capable of serving society long after the project is complete – are not worth pursuing. Institutions in the North that are hoping to help their colleagues in the South should focus their efforts on training, international exchange and infrastructure development.

Martin Rees
IAS Trustee
A World of Science in the Developing World
October 2008

A world in which humanity is dedicated to solving common global problems together can only be realized when all countries have attained scientific proficiency.

-Mohamed H. A. Hassan
SIG Board Member
Science, 24 October 2008