

TWAS: CAPACITY BUILDING IN DEVELOPING COUNTRIES

CDC Round Table, ICTP April 2016

TWAS's guiding principles

With science and engineering, countries can address challenges in agriculture, climate, health and energy.



Challenges for a new era

- Food security
- Water quality
- Energy security
- Biodiversity loss
- Infectious diseases
- Climate change



A troubling gap

- Globally, 81 nations fall into the category of S&T-lagging countries.
- 48 are classified as Least Developed Countries.

The role of TWAS

The day-to-day work of TWAS is focused in two critical areas:

- Improving research infrastructure
- Building a corps of PhD scholars

TWAS Research Grants

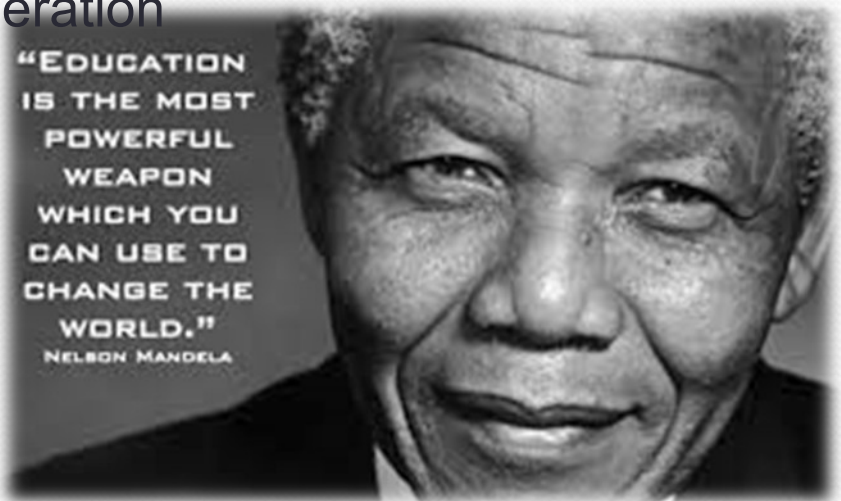


2,202 grants
awarded to
individuals and
research groups
(1986-2015)

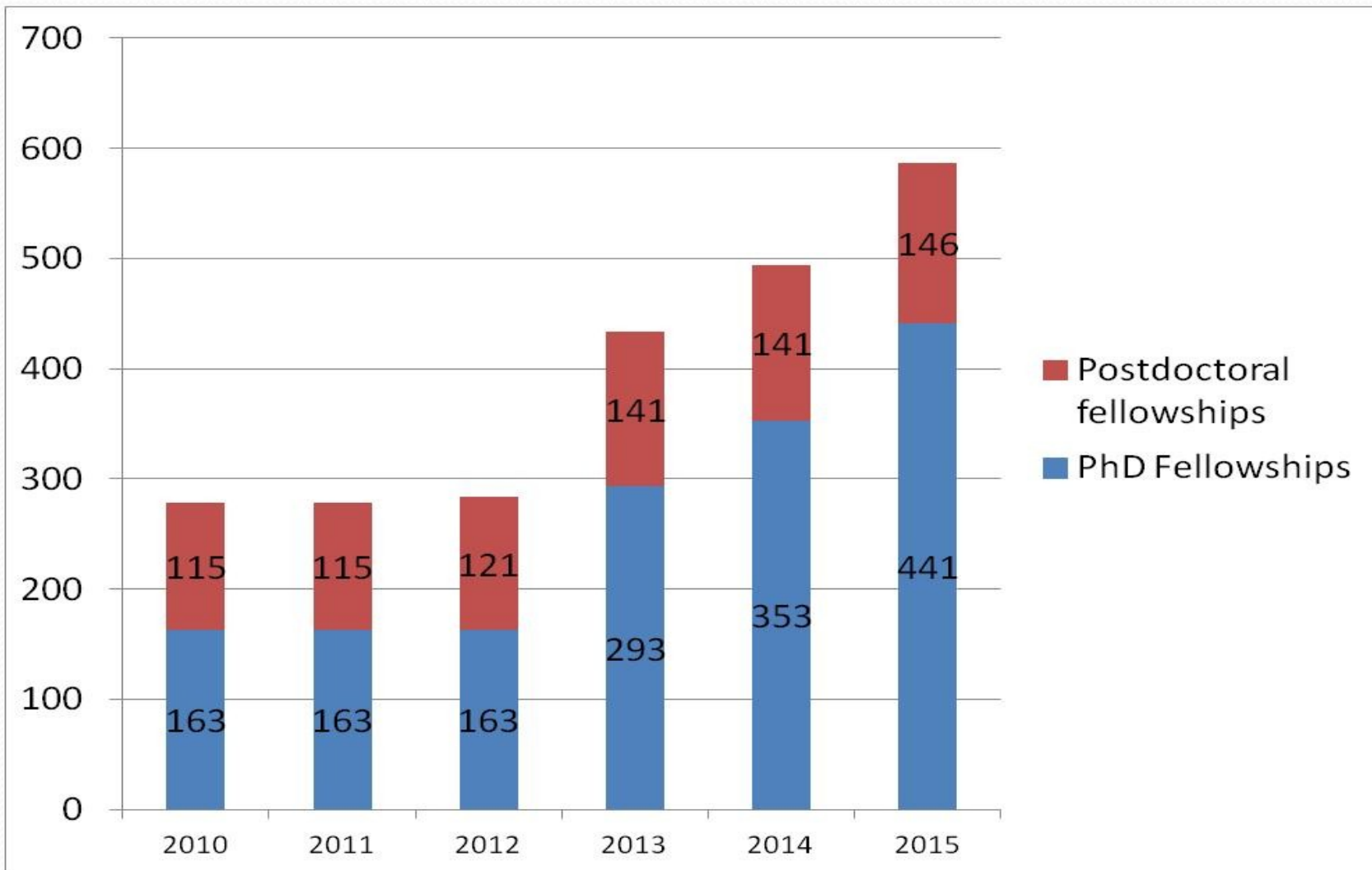
**TWAS' AIM: to train 1000 PhD students
by 2017**

Training PhD-level scientists:

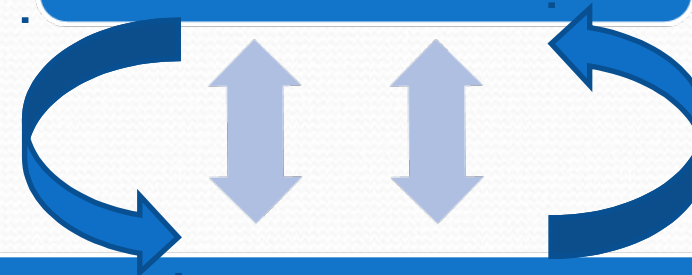
- Researchers and university-level educators
- Future leaders for science policy, business and international cooperation



Rapidly growing opportunities



TWAS today



Hundreds of fellowship opportunities in 10 developing countries with over 1000 host institutions, many of which national Centres of Excellence

INDIA

PAKISTAN

BRAZIL

SOUTH AFRICA

KENYA

CHINA

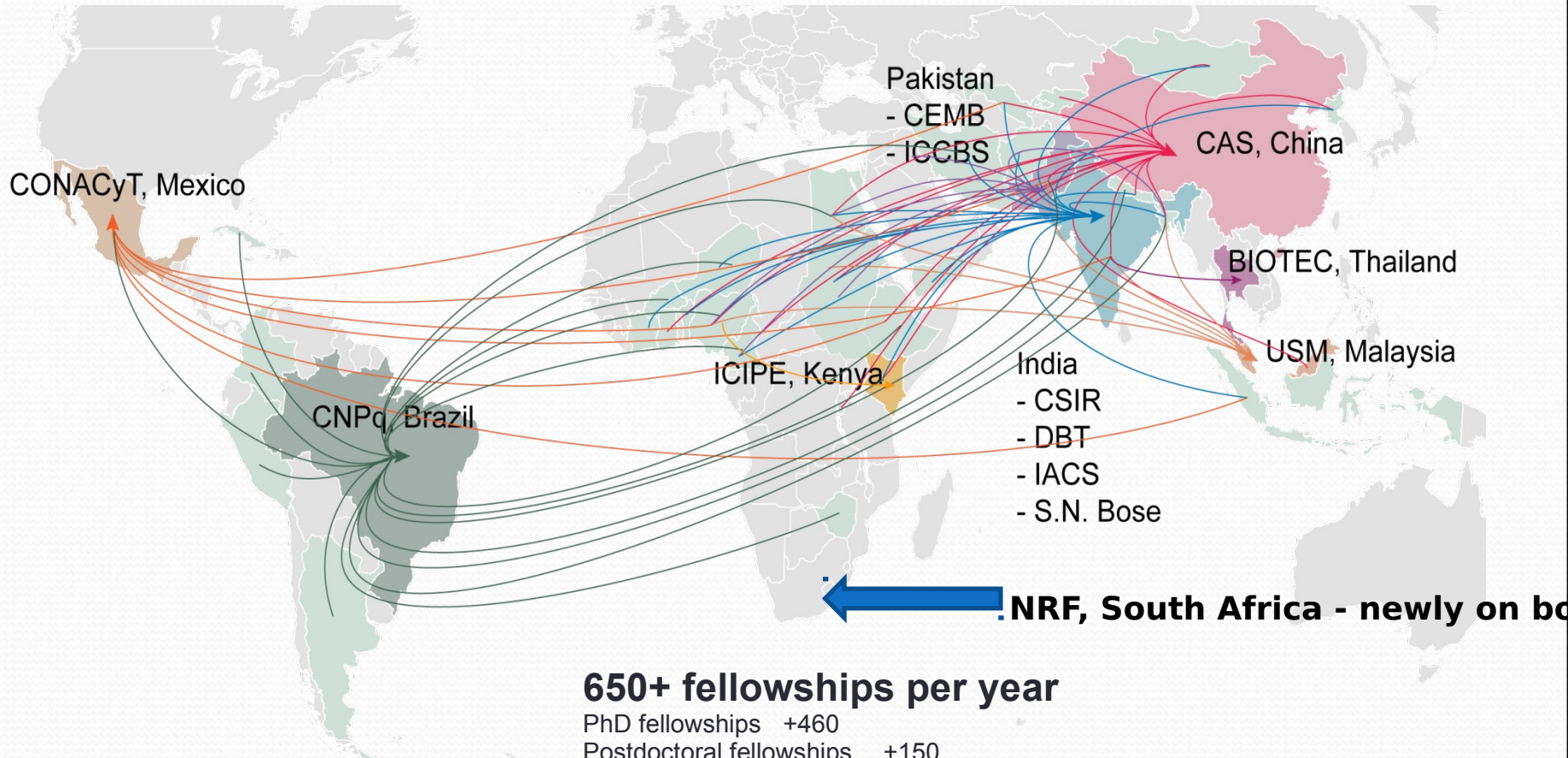
MEXICO

MALAYSIA

IRAN

THAILAND

TWAS Fellowships Worldwide



650+ fellowships per year





PhD fellowships +460

Postdoctoral fellowships +150

Visiting researchers/professors + 45

17 Programme Partners

Worldwide

 <p>Conselho Nacional de Desenvolvimento Científico e Tecnológico</p>	<p>BRASIL: CNPq - National Council of Scientific and Technological Development</p>		<p>MALAYSIA: UPM - Universiti Putra Malaysia</p>
	<p>CHINA: CAS - Chinese Academy of Sciences</p>		<p>KENYA: <i>icipe</i> - International Centre for Insect Physiology and Ecology</p>
	<p>INDIA: CSIR - Council of Scientific & Industrial Research</p>		<p>MEXICO: CONACYT- National Council on Science and Technology</p>
	<p>INDIA: DBT - Department of Biotechnology</p>		<p>PAKISTAN: CEMB - National Centre of Excellence in Molecular Biology</p>
	<p>INDIA: IACS - Indian Association for the Cultivation of Science</p>		<p>PAKISTAN: ICCBS - International Centre for Chemical and Biological Sciences</p>
	<p>INDIA: S.N. Bose National Centre for Basic Science</p>		<p>PAKISTAN: CIIT - COMSATS Institute of Information Technology</p>
	<p>INDIA: S.N. Bose National Centre for Basic Science</p>		<p>PAKISTAN: NCP - National Centre for Physics</p>
	<p>IRAN: IROST - Iranian Research organization for Science and Technology</p>		<p>SOUTH AFRICA: NRF - National Research Foundation</p>
	<p>MALAYSIA: USM - Universiti Sains Malaysia</p>		<p>THAILAND: BIOTEC - National Centre for Genetic Engineering and Biotechnology</p>



twas

*f*IMU
Friends of the IMU

NEW FELLOWSHIP PROGRAMME IN MATHEMATICS

TWAS and IMU, with the assistance of the Friends of the IMU (FIMU) is currently launching a fellowship programme to support postgraduate studies, in developing countries, leading to a PhD degree in the mathematical sciences..

Thanks to a generous donation by the winners of the Breakthrough Prizes in Mathematics – Ian Agol, Simon Donaldson, Maxim Kontsevich, Jacob Lurie, Terence Tao and Richard Taylor – *The IMU Breakout Graduate Fellowships* will offer a limited number of grants for excellent students from developing countries

The first call of the new program *IMU Breakout Graduate Fellowship* will be open from the 15th April to the 15th June 2016.

Professional mathematicians are invited to nominate highly motivated and mathematically talented students from developing countries who plan to complete a doctoral degree in a developing country, including their own home country. Nominees must have a consistently good academic record and must be seriously interested in pursuing a career of research and teaching in mathematics.

For a nomination to be eligible, the country of citizenship of the student, the country of residency and the country where the study will take place must be contained in the list of Developing Countries as defined by IMU for the period 2016-2019. *For complete information see the IMU website (<http://www.mathunion.org/cdc/>) or the TWAS website (<http://twas.org/>).*

March/April each year: Open call for proposals

↓
Applicants must select best
host institution and obtain
preliminary acceptance
letter from chosen host
institution

↓
Deadline ranges according to
programme:
From mid June to mid
September

↓
Selection process

↓
Award process:
December - January

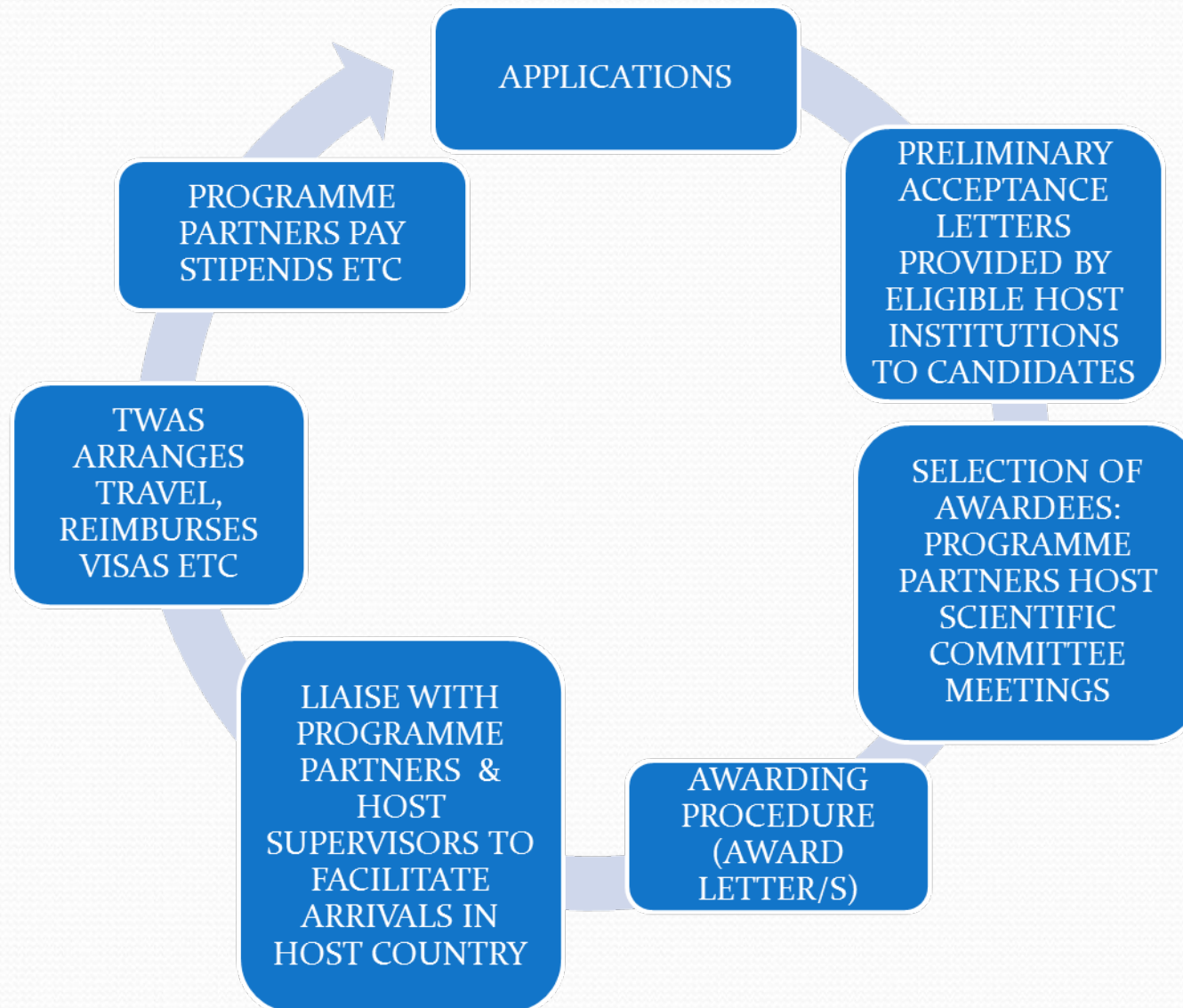
Exception!

CAS-TWAS
President's
fellowship
programme
opens call in
November and
closes in March
each year



→ Awardees arrive
in the host
country in early
or mid year
(following year of

HOW IT WORKS...



WHAT IS COVERED BY TWAS FELLOWSHIP AGREEMENTS?

TWAS COVERS:

- Airfare to and from host country and/or any other travel arrangements
- Visa costs and related lump sums
- Administrative costs to run the programme
 - I. Receive and process applications
 - II. Selection committee
 - III. Award selected applicants
 - IV. Provide visa assistance and arrange travel

PROGRAMME PARTNERS COVER:

- Stipend in the host country
- Accommodation costs
- Lump sum for books and equipment etc.

Research costs are either covered or waived.

BUILDING CAREERS WITH TWAS SUPPORT



Emmanuel Iyayi Unuabonah from Nigeria



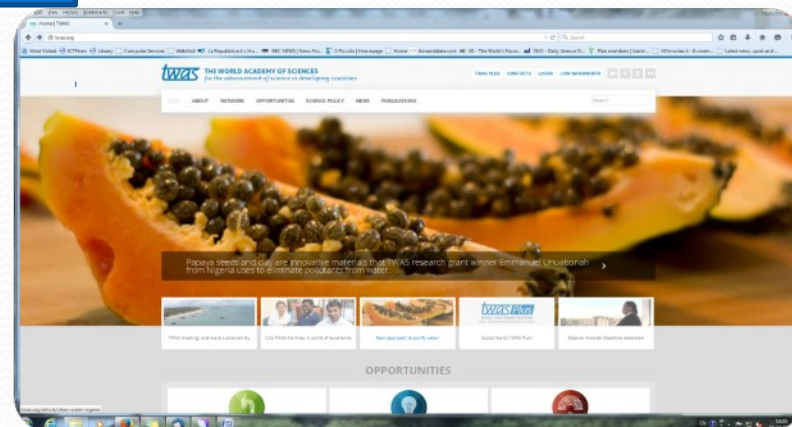
Awarded CAS PhD fellowship in China in 2005



Elected TWAS Young affiliate (2009 to 2013)



Awarded a TWAS Research Grant in 2012



Recently featured on the new TWAS website for research regarding the use of papaya seeds and clay to eliminate pollutants from water



A few words from our awardees

Ostend Tatuedom Kamgue from Cameroon awarded a PhD fellowship to ICCBS, Pakistan in 2011



18 – General comments or suggestions (including personal views) about the host institution you visited: ICCBS is one of the biggest world-class international research center with state-of-the-art equipments for optimum output. Excellent accomodation at the Guest House. The host, institute's staff and researchers are friendly, nice and approachable. The director/chief host always seek the good welfare and security of all foreign collaborators at all time. I hold no reserve in recommending ICCBS to all Fellow Scientists for research collaboration.



Bamidele Iromidayo Olu-Owolabi from Nigeria awarded a Visiting Scholar fellowship to USM, Malaysia in 2011

She says “The knowledge gained will be disseminated through presentation of series of seminars in the Department. I will also pass the skill on experimental work to the postgraduate students in their chemistry practical classes.”

Claire Mack Mugasa from Uganda awarded a Postdoctoral fellowship to icipe, Kenya in 2012



18 – General comments or suggestions (including personal views) about the icipe-TWAS Fellowship programme: The programme has fostered capacity building as well as building networks especially for me as the awardee. I have benefited scientifically from a range of scientists who I have interacted with at ICIPE. I have been introduced to the scientific fora of my supervisor for networking and future collaboration. This is very instrumental to me I grow into research scientist .

IN THE LAST 10 YEARS WE HAVE AWARDED OVER 1500 FELLOWSHIPS

PhD fellowships	1059 (of which 377 from Africa)
Postdoctoral fellowships	470 (of which 251 from Africa)
TOTAL (2004- 2014)	1529

Some awardee



TWAS's 'Seeds of Science' video

Seeds of Science focuses on TWAS Prize winners Zeyaur Khan and Segenet Kelemu - now first women Director General of icipe (right); one of the first CNPq PhD fellowship awardees from 2004, Vitalis Wafula Wekesa (below) and research grant awardee Peterson Guto.



They describe how they are transforming agriculture and farm productivity and developing ways to provide clean water to residents both in the Kenyan countryside and in the capital city of Nairobi.



Now on YouTube: TWAS's 'Seeds of Science'

It has been seen by top scientists and aspiring young researchers, high-level policymakers and diplomats. Now the inspiring TWAS documentary is available for everyone on YouTube.



THANK YOU

MERCI

Professor Romain Murenzi

The World Academy of Sciences (TWAS) - for the
advancement of science in developing countries

E-mail: edoffice@twas.org

GRAZIE

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