

TWAS:

Advancing science in the South

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

G7 Science Conference
Accademia Nazionale dei Lincei
Rome, Italy
18 April 2017

Foundation

- 1983: Foundation meeting in Trieste
(*42 Founding Members, 10 NLs*)
- 1984: \$1.5M from Italian foreign minister
Giulio Andreotti
(*Policy for science*)
- 1985: Launching by UN Secretary
General Javier Perez de Cuellar
(*Science for policy and diplomacy*)



Five TWAS Regional Offices



The Regional Offices nominate scientists for membership and prizes, select Young Affiliates, and organize conferences for young scientists

Strategic Objectives (*SP 5: 2017-2021*)

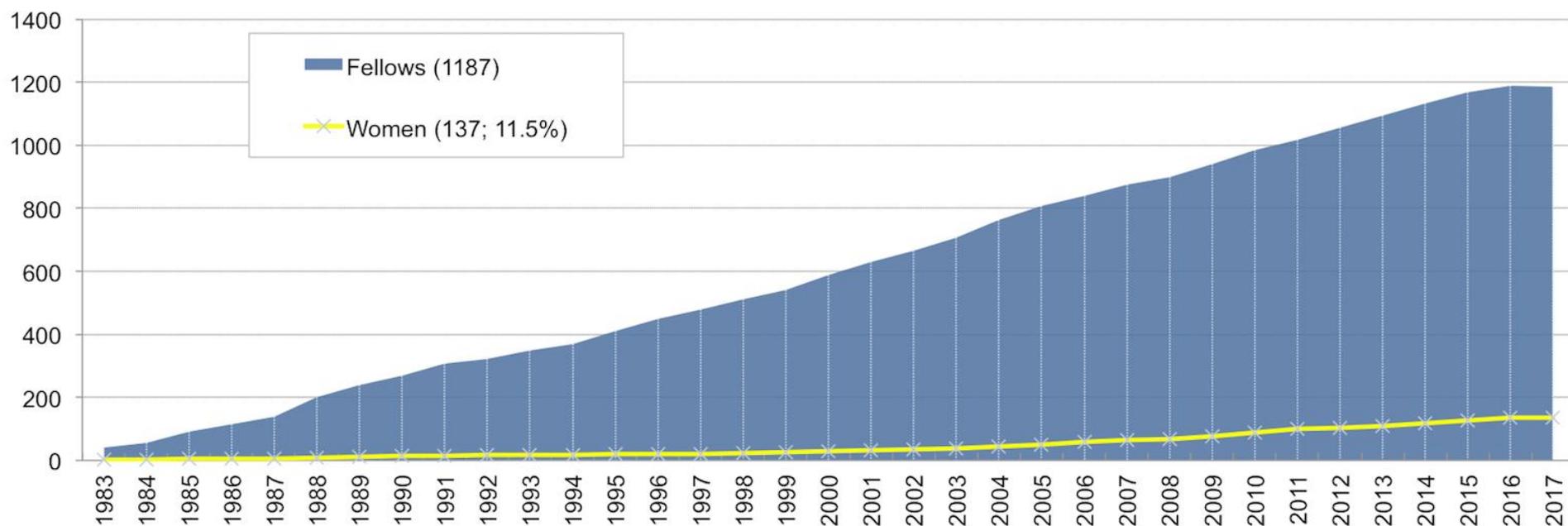
- Recognizing and rewarding outstanding scientists
- Supporting young scientists and research groups
- Promoting South-South collaboration in education and research
- Fostering North-South cooperation and international partnership
- Enhancing science-policy-diplomacy links for achieving SDGs

Strategic Objective 1

Recognizing and Rewarding Excellence in Science

- Election into TWAS Membership
- Awarding Prizes and Medals

Evolution of Membership



Over the past four years,
25% of new TWAS Fellows have been women

TWAS - Lenovo Science Prize

- TWAS-Lenovo Prize is the premier honor given to scientists in the developing world.

- It carries a monetary award of **USD100,000**, provided by **Lenovo**, as well as a medal and a certificate highlighting the recipient's major contributions to science

2016: Zhao Dongyuan (China)
Chemistry



2015: Artur Avila (Brazil)
Mathematics



2014: Abdool Karim (south Africa)
Biology



**Strategic
Objective 2**

**Supporting young Scientists and
Research Groups**

- *Grants to young scientists*
- *Grants to research groups*

TWAS target countries

- Key TWAS programmes focus on **66** S&T-lagging countries, including
- **48** Least Developed Countries
- **52** Low-Income Countries
- **14** Lower Middle-Income Countries

TWAS Research Grants

About USD1.5 million per year to young scientists and research groups in Africa and S&T-lagging countries (\$ 15-30 K)

2,500 grants awarded (1986-2017)



***Virima Mudogo,
Department of Chemistry,
University of Kinshasa, Dem.
Rep. of Congo***

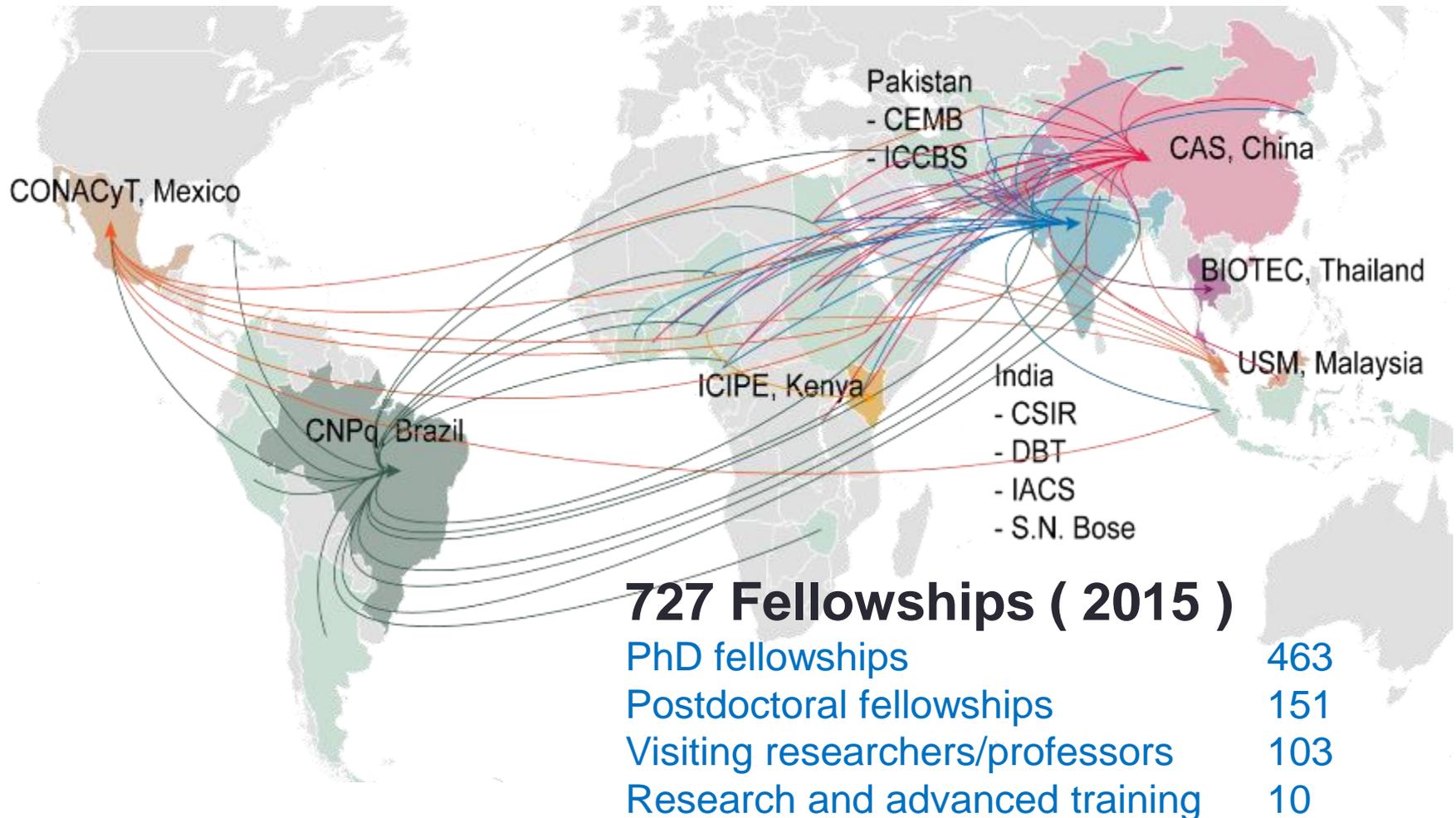
*Macromolecules extracted
from indigenous medicinal
plants with potential
antimalarial or anti-sickle cell
anaemia effects*

Strategic Objective 3

Through **South-South cooperation**, developing nations can build capacities, share experiences, build regional partnerships and initiatives, and address global challenges.

TWAS Fellowships for Advanced Training *(S&T-Lagging Countries)*

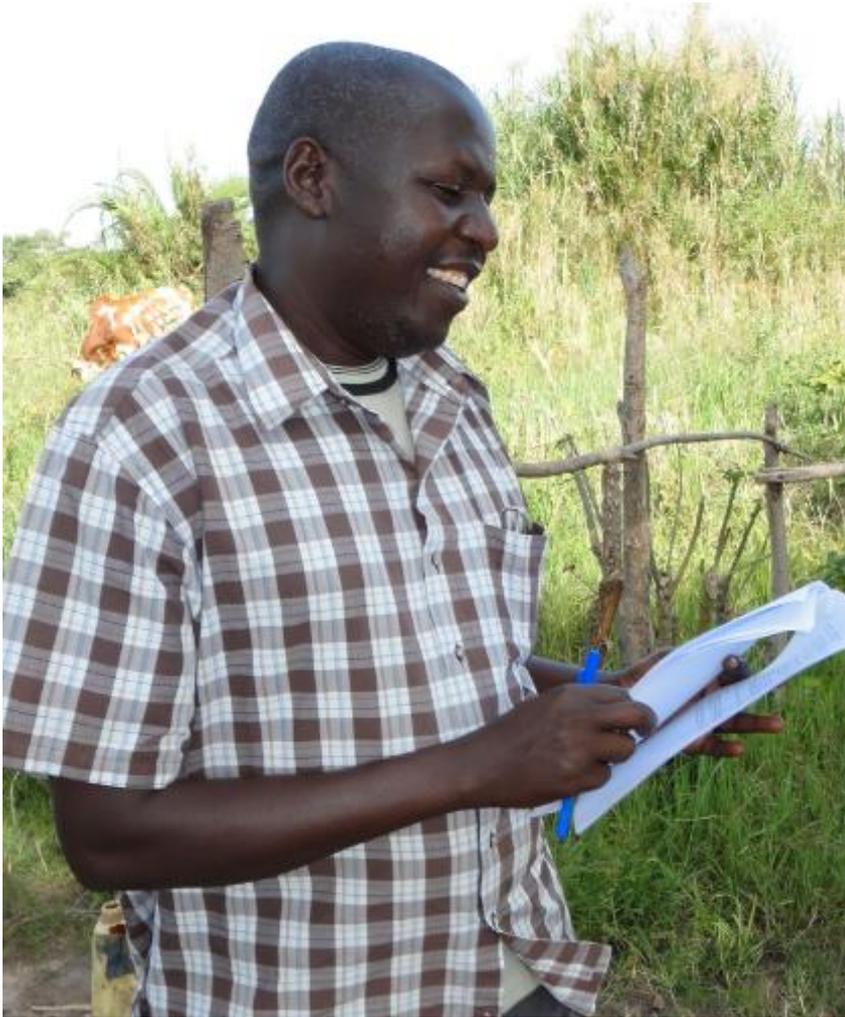
Largest South-South fellowship Program in the World



Strategic Objective 4

- **North-South scientific links** are crucial to addressing global challenges. TWAS builds such links through postdoctoral fellowships, visiting scientist programmes and a science diplomacy initiative.
- TWAS is working to expand those relationships, including developing bilateral agreements with academies in the North

TWAS-DFG postdoctoral programme



The TWAS-DFG programme provides researchers from sub-Saharan Africa three-month visits to German research institutes.

Joseph Erume, at Makerere University in Uganda, spent three months at **Friedrich Loeffler Institute** pursuing research crucial to African **food security**: the seroprevalence and molecular characterization of *Brucella suis* in pigs.

Exploring new cooperation with the Royal Society



February 2017

Strategic Objective 5



Promoting **science-policy-diplomacy**
links for achievement of SDGs

Science-Policy-Diplomacy workshop

Policy for Science

- Meeting of G8 foreign ministers in Trieste (2009)
- Italian Ministry of Foreign Affairs (MAE) asked TWAS/IAP to organize a workshop involving Afghanistan and neighboring countries to **develop a regional network of cultural and scientific cooperation** (with Italian support) as a contribution to peace and development
- Participants: Academies of science of *Afghanistan, Pakistan, India, Iran, Turkey, China, **Italy***
- Workshop opened by the foreign ministers of *Italy, Pakistan, Afghanistan*
- Conclusions and recommendations submitted to MAE

AAAS-TWAS Science Diplomacy course

Aims:

- bring together scientific, policy and diplomatic communities to address critical sustainability issues and publish case studies
- build capacity of young scientists in concept and practice of science diplomacy

Participation:

- over 200 applications per year
- applicants: young scientists, diplomats, government officials and development practitioners
- about 30-40 selected from 20-30 countries

Science-Policy-diplomacy workshops

Transboundary issues:

- Energy policies for a sustainable future – Trieste, December 2013;
- Sustainable fisheries – Mexico, September 2014;
- Climate change & high-altitude agriculture – Trieste, December 2014;
- Sustainable water management – Trieste, Nov/Dec 2015.



Role-playing exercise (2016)



Norman Neureiter, first science adviser to the US Secretary of State (2015)

Refugee Scientists Workshop (March 2017)



- 50 participants from 19 countries in Europe and the Middle East/North Africa region
- Participants included: policymakers, science leaders, diplomats, refugee program administrators and some refugee scientists
- Examine challenges and opportunities facing refugee scientists and recommend positive action and interventions
- Extensive coverage in Italian and European media

Refugee Scientists Workshop

*Keynote talk by **Daryl Copeland** (former Canadian Diplomat)*



"The problem of how best to harness the untapped potential resource of refugee scientists, as a tool for advancing the goals of international policy and relations, falls squarely within the province of science diplomacy."

"National governments and international organizations....are best positioned to facilitate action and collaboration, **but they face a knowledge and information gap.**"

Key Recommendations

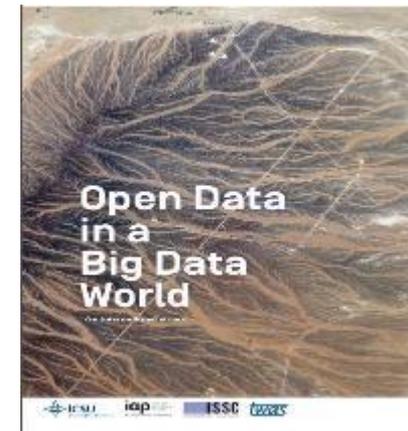
- **Strong mechanisms for identifying refugee scientists and assessing their potential and professional needs:**
 - Establish links with refugee processing centers and UN Refugee Agency
 - Establish a website (*to be viewed on mobile phones*) that provides information about refugee scientists and offers information about opportunities
 - Develop a database of refugee scientist and their areas of expertise
- **Harmonized policies to support education, training and job opportunities**
 - Utilize education and training opportunities provided by Academies ([TWAS](#),...)
 - Provide startup grants to young refugee scientists

Science International

A series of meetings convened by 4 international science organizations:



- ❑ First activity : Release in 2016 of an accord on *Open Data in a Big Data World*
- ❑ Second activity proposed by IAP&TWAS: *Refugee Scientists: challenges and opportunities*

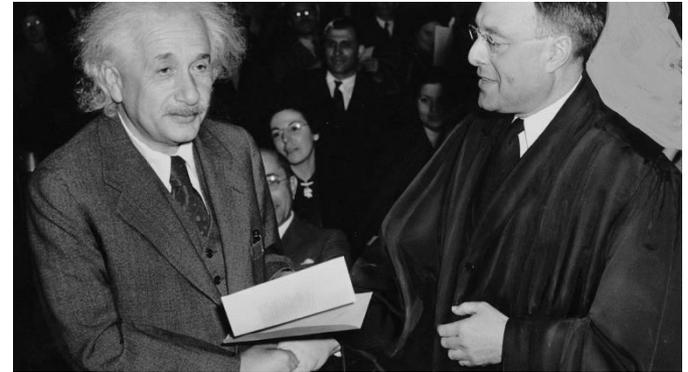




Successful initiative

Professor Carmen Bachmann founded "Chance for Science," a [website](#) that connects refugee academics with scientists working in German

“One Syrian engineer I met in the camp was just happy that I recognize him as a professor. He told me, 'I feel like nothing here. In Syria I was a professor, and I come here — [I can do much more than sitting around.](#)'”



world's most famous science refugee



Next Einstein!!

twas



Grazie

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