About TWAS -
with a focus on the research grants programmes

JACKIE OLANG
programme officer, TWAS-ROSSA
j.olang@aasciences.org or nairobi@twas.org

RISE WORKSHOP
07/10/08 – Nairobi, Kenya
Establishment

- Founded 1983 in Trieste, Italy, by Abdus Salam and 40 other eminent scientists from the South (incl. 10 Nobel Laureates).
- Inaugurated 1985 by the Secretary General of the United Nations, Javier Perez de Cuellar.
Headquarters

- Located at the Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy.
- Administered by the United Nations Educational, Scientific and Cultural Organization (UNESCO).
Membership

- **878 Members in 91 countries**
- **744 “Fellows” in 74 countries in the South.**
- **134 “Associate Fellows” in 17 countries in the North.**
- **16 Nobel Laureates.**
- **15 Italian Members.**
Objectives

- Recognize, support and promote excellence in scientific research in the South.
- Respond to the needs of scientists working under unfavourable conditions.
- Support South-South scientific exchange and collaboration.
- Promote South-North cooperation between individuals and centres of excellence.
- Promote dissemination of scientific information and sharing of innovative experiences.
Promoting Excellence

- Academy membership granted to the most distinguished scientists in the South.
- TWAS prizes given for significant contributions by scientists in the South.
- Prizes for young scientists awarded on behalf of TWAS by organizations in the South.
Promoting Excellence

TWAS Prizes to Young Scientists in Developing Countries

Awarded in collaboration with national science academies, scientific research councils, ministries of science & technology and other high-level research organizations in the South.

• Organizations in 42 developing countries participate.

**EXAMPLE:** 2006 TWAS/National Research Council of Malawi young scientists’ prize winner: **John Chisi**, Haematology Department, College of Medicine, University of Malawi, Blantyre.
Supporting South-South Collaboration

- Postgraduate and postdoctoral fellowships for young scientists (Brazil, China, India, Mexico, Pakistan).
- Associateships for regular visits to centres of excellence in the South (with UNESCO).
- All expenses (except travel) covered by host country.
Promoting South-North Cooperation

- Support international meetings held in the South.
- Support visits of internationally renowned scientists to institutions in the South (with ICSU, UNESCO and UNU).
- Promoting Europe-Africa partnerships in ICT research: EuroAfrica-ICT EU-funded project. New!
- **Purpose**: To review status and prospects of science in different regions of the South and promote strategies for South-South and South-North cooperation.

- **Participants**: Members of TWAS, S&T ministers and presidents of research councils from developing countries; presidents of academies from South and North; world-renowned scientists to give keynote talks (e.g. Nobel laureates); talented young scientists.

- **Invitation** by host country’s ministry, research council or academy.

- **Inauguration** of event by the host country’s head of state/government.
TWAS General Conferences/Meetings

China 1987
Venezuela 1990
Kuwait 1992
Nigeria 1995
Brazil 1997
Senegal 1999
Iran 2000
India 2002
China 2003
Egypt 2005
Brazil 2006
Mexico 2008
Dissemination of Information

- Quarterly newsletter, TWAS Research Updates, proceedings.
- Reports.
Responding to Needs

- Merit-based competitive research grants in basic sciences given to young scientists.
- TWAS research units in science- and technology-lagging countries.
- Spare parts for scientific equipment supplied to laboratories in need.
# Grants to individuals

## Top 10 countries (individual grants awarded by subject)

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>BIOLOGY</th>
<th>CHEMISTRY</th>
<th>MATHEMATICS</th>
<th>PHYSICS</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Received</td>
<td>Awarded</td>
<td>Received</td>
<td>Awarded</td>
<td></td>
</tr>
<tr>
<td>Argentina</td>
<td>1,009</td>
<td>122</td>
<td>222</td>
<td>39</td>
<td>19</td>
</tr>
<tr>
<td>Brazil</td>
<td>359</td>
<td>92</td>
<td>67</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>India</td>
<td>283</td>
<td>41</td>
<td>198</td>
<td>33</td>
<td>52</td>
</tr>
<tr>
<td>China</td>
<td>103</td>
<td>22</td>
<td>57</td>
<td>12</td>
<td>64</td>
</tr>
<tr>
<td>Mexico</td>
<td>321</td>
<td>71</td>
<td>69</td>
<td>16</td>
<td>10</td>
</tr>
<tr>
<td>Nigeria</td>
<td>274</td>
<td>45</td>
<td>122</td>
<td>16</td>
<td>78</td>
</tr>
<tr>
<td>Cuba</td>
<td>108</td>
<td>30</td>
<td>52</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>Chile</td>
<td>205</td>
<td>63</td>
<td>37</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>Pakistan</td>
<td>159</td>
<td>36</td>
<td>91</td>
<td>16</td>
<td>9</td>
</tr>
<tr>
<td>Morocco</td>
<td>55</td>
<td>20</td>
<td>38</td>
<td>15</td>
<td>18</td>
</tr>
</tbody>
</table>

- **Biology**: 206
- **Chemistry**: 139
- **Mathematics**: 136
- **Physics**: 128
- **Total**: 104

*Note: The table shows the number of received and awarded grants for each country.*
## Grants to individuals

<table>
<thead>
<tr>
<th>Success rates</th>
<th>Biology</th>
<th>Chemistry</th>
<th>Mathematics</th>
<th>Physics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1986-1991</td>
<td>52%</td>
<td>51%</td>
<td>37%</td>
<td>44%</td>
</tr>
<tr>
<td>1992-1996</td>
<td>22%</td>
<td>22%</td>
<td>26%</td>
<td>25%</td>
</tr>
<tr>
<td>1997-2001</td>
<td>20%</td>
<td>21%</td>
<td>31%</td>
<td>23%</td>
</tr>
<tr>
<td>2002-2006</td>
<td>14%</td>
<td>25%</td>
<td>33%</td>
<td>25%</td>
</tr>
</tbody>
</table>

![Graph showing success rates for men and women across different years](image)

- **Men (%)**
- **Women (%)**
Grants to individuals

![Graph showing the fraction of women applicants in different fields over different time periods.](image-url)

- Biology
- Chemistry
- Mathematics
- Physics
Responding to needs

Grants to Research Units

- programme launched in 2002,
- initially funded entirely by TWAS,
- initially limited to Least Developed Countries (LDCs),
- funded by Sida/SAREC, Sweden, since 2006,
- since then, expanded to 77 science- and technology-lagging countries, including most in sub-Saharan Africa.

Total Research Unit Grants Awarded
(2002-2006)

- 52% Physics
- 45% Biology
- 3% Chemistry
- 0% Mathematics
## Grants to Research Units

Total research units by region and subject

<table>
<thead>
<tr>
<th>REGION</th>
<th>BIOLOGY</th>
<th>CHEMISTRY</th>
<th>MATHEMATICS</th>
<th>PHYSICS</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Received</td>
<td>Awarded</td>
<td>Received</td>
<td>Awarded</td>
<td></td>
</tr>
<tr>
<td>Africa and Arab Region</td>
<td>133</td>
<td>13</td>
<td>30</td>
<td>11</td>
<td>191</td>
</tr>
<tr>
<td>Asia and the Pacific</td>
<td>26</td>
<td>2</td>
<td>8</td>
<td>3</td>
<td>42</td>
</tr>
<tr>
<td>Latin America and the Caribbean</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>5</td>
</tr>
</tbody>
</table>


Grants to Research Units

Top 4 countries with research units awarded

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>BIOLOGY</th>
<th>CHEMISTRY</th>
<th>MATHEMATICS</th>
<th>PHYSICS</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Received</td>
<td>Awarded</td>
<td>Received</td>
<td>Awarded</td>
<td></td>
</tr>
<tr>
<td>Tanzania</td>
<td>19</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>Senegal</td>
<td>4</td>
<td>0</td>
<td>6</td>
<td>3</td>
<td>17</td>
</tr>
<tr>
<td>Sudan</td>
<td>10</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>17</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>22</td>
</tr>
</tbody>
</table>
Grants to Research Units

Note:
• Some countries have submitted a good number of applications, other countries very few or none at all.
TWAS and Associated Organizations

COSTIS (2007)  

TWOOWS (1989)  

TWAS (1983)  

IAP (1993)  

IAMP (2000)
TWAS and Associated Organizations

- COSTIS (2007)
- TWOWS (1989)
- TWAS (1983)
- IAP (1993)
- IAMP (2000)
Associated Organizations: TWOWS

- Established in 1993, the Third World Organization for Women in Science unites more than 2,700 women scientists in 89 developing nations and 21 countries in the North.
Associated Organizations: TWOWS

- With funds from the Department for Research Cooperation (SAREC) of the Swedish International Development Cooperation Agency (Sida), TWOWS offers fellowships for postgraduate training to young women scientists from sub-Saharan African and Least Developed Countries (LDCs) at centres of excellence in the South.
Associated Organizations: TWOOWS

To date, TWOOWS has awarded fellowships to more than 250 young women scientists from some 40 countries.

Agnes Mangwela, PhD
TWAS and Associated Organizations

- COSTIS (2007)
- TWOWS (1989)
- TWAS (1983)
- IAP (1993)
- IAMP (2000)
Launched in 1993, the InterAcademy Panel on International Issues is a global network of 98 science academies in 90 countries.
Associated Organizations: IAP

- IAP promotes:
  - cooperation between member academies on science-related issues of global concern.
  - the role of academies as independent, credible advisors to governments on policies and critical decisions based on S&T.
Associated Organizations: IAMP

Established in 2000, the InterAcademy Medical Panel is a global network of the world's medical academies or the medical divisions of science academies.
Associated Organizations: IAMP

- The 64 members of IAMP seek to:
  - Improve global health, especially among the world's poorest nations.
  - Build capacity of academies to address health-related issues.
  - Provide independent scientific advice to national governments and international bodies for the promotion of health science and health care policy.
TWAS and Associated Organizations

COSTIS (2007)

TWOOWS (1989)

TWAS (1983)

IAP (1993)

IAMP (2000)
Associated Organizations: COSTIS

- Established in September 2006 by Ministers of S&T and Ministers of Foreign Affairs of G77 as successor to the Third World Network of Scientific Organizations (TWNSO).
COSTIS Membership

- Ministers responsible for S&T
- National Research Councils
- National Science Foundations
- National Science Academies
- Science-based private sector institutions
COSTIS Goals

- Provide unique platform for governmental agencies responsible for policy and for funding research to interact strongly with leadership in academies and science-based industry.
- Exchange information on best practices in integrating science policy into national development plans.
- Organize periodic fora on STI addressing specific topics of major concern to developing countries.
- Example: Development and diffusion of simple affordable technologies for safe drinking water and renewable energy.
Main Sponsors

- Ministry of Foreign Affairs, Government of Italy.
- Department for Research Cooperation (SAREC), Swedish International Development Cooperation Agency (Sida).
- Kuwait Foundation for the Advancement of Sciences (KFAS).
- OPEC Fund for International Development.
- United Nations Development Programme (UNDP).
- United Nations University (UNU).
- European Union (EU).
- Developing countries (CNPq, Brazil; CAS, China; CSIR, DBT, SN Bose NCBS and IACS, India; CEMB and ICCBS, Pakistan).
TWAS’s Regional Offices

- Beijing
  Chinese Academy of Sciences

- Alexandria
  Bibliotheca Alexandrina

- Nairobi
  African Academy of Sciences

- Rio de Janeiro
  Brazilian Academy of Sciences

- Bangalore
  J.N. Centre for Advanced Scientific Research
TWAS’s Regional Offices: Objectives

- Promote regular activities of TWAS in the region and assess their vitality and effectiveness.
- Strengthen collaboration between TWAS Members and facilitate their contacts with young scientists in the region.
- Organize annual conferences for best and brightest young scientists in the region.
- Promote public awareness and understanding of science in the region.
Thank you

www.twas.org
www.twnso.org
www.twows.org
www.interacademies.net
www.iamp-online.org