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The World Academy  
of Sciences

# ANNUAL REPORT 2024

THE WORLD ACADEMY OF SCIENCES

*for the advancement of science in developing countries*





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The World Academy  
of Sciences

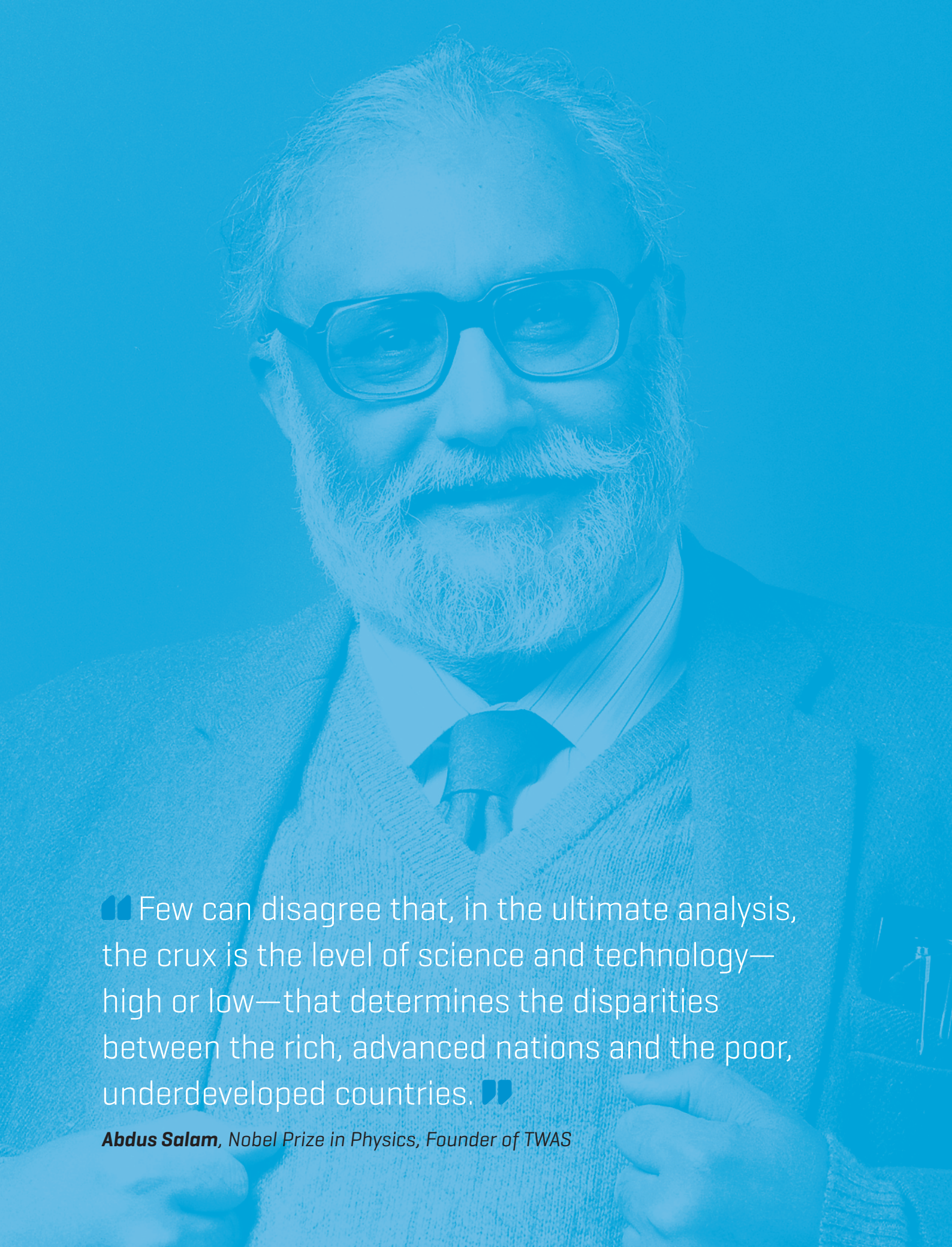
A faint, dotted world map serves as a background for the title text.

# ANNUAL REPORT 2024

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A portrait of Abdus Salam, an elderly man with a full white beard and glasses, wearing a suit and tie. The image is overlaid with a solid blue color.

“ Few can disagree that, in the ultimate analysis, the crux is the level of science and technology—high or low—that determines the disparities between the rich, advanced nations and the poor, underdeveloped countries. ”

**Abdus Salam**, Nobel Prize in Physics, Founder of TWAS





▲ Work from a group activity at the TWAS-organized Joint Climate Science Network, Mentorship and Capacity Growth workshop, held in Trieste, Italy, in May 2024. [Photo: G. Ortolani/TWAS]

**Cover photo:** Speakers and participants in the TWAS Skill Building Workshop in Dakar, Senegal, in November 2024. [Photo: G. Ortolani/TWAS]

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# TWAS COUNCIL

*The TWAS Council, elected by the membership every four years, is responsible for supervising all of the Academy's affairs. The Council assumed office in January 2023 and will serve until the end of 2026:*

## *President*

**Quarraisha Abdool Karim** [South Africa]

## *Immediate Past President*

**Mohamed H.A. Hassan** [the Sudan]

## *Vice-Presidents*

### *Africa:*

**Olubukola O. Babalola** [Nigeria]

### *Arab Region:*

**Sabah AlMomin** [Kuwait]

### *Central and South Asia:*

**Muhammad Iqbal Choudhary** [Pakistan]

### *East and South-East Asia:*

**Hou Jianguo** [China]

### *Latin America and the Caribbean:*

**Helena B. Nader** [Brazil]

### *North:*

**Mohamed Jamal Deen** [Canada]

## *Secretary General*

**Lilliam Alvarez Díaz** [Cuba]

## *Treasurer*

**Lee Young Hee** [Republic of Korea]

## *Council Members*

### *Africa:*

**Rose Leke Gana Fomban** [Cameroon]

### *Arab Region:*

**Najoua Turki Kamoun** [Tunisia]

### *Central and South Asia:*

**Anil Kumar Gupta** [India]

### *East and South-East Asia:*

**Lê Tuân Hoa** [Viet Nam]

### *Latin America and the Caribbean:*

**Sandra Myrna Díaz** [Argentina]

### *North:*

**Markku Tapio Kulmala** [Finland]

## *Ex-officio Council Member*

**Atish Dabholkar** [India]

[Director, Abdus Salam International Centre for Theoretical Physics [ICTP]]



# TWAS MISSION

*The World Academy of Sciences for the advancement of science in developing countries (TWAS) supports sustainable prosperity through research, education, policy, and diplomacy.*

TWAS was founded in 1983 by a distinguished group of scientists from the global South and North, under the leadership of Abdus Salam, the Pakistani physicist and Nobel laureate. By the end of 2024, TWAS had 1,444 elected Fellows—13 of them Nobel laureates—representing 112 countries. The Academy is based in Trieste, Italy, on the campus of the Abdus Salam International Centre for Theoretical Physics [ICTP]. TWAS is a programme unit of the United Nations Educational, Scientific and Cultural Organization [UNESCO], and receives its core funding from the Italian Ministry of Foreign Affairs and International Cooperation [MAECI]. The Swedish International Development Cooperation Agency [Sida] also provides essential funding for TWAS programmes. Through over four decades, the TWAS mission has remained consistent:

- Recognize, support and promote excellence in scientific research in the developing world,
- Respond to the needs of young scientists in countries that are lagging in science and technology,
- Promote South-South and South-North cooperation in science, technology and innovation, and
- Encourage scientific research and sharing of experiences in solving major challenges faced by developing countries.

# 2024: EXCELLENCE, INNOVATION AND PARTNERSHIPS FOR SUSTAINABLE DEVELOPMENT



by **Quarraisha  
Abdool Karim,**  
*TWAS President*

The year 2024 served as a powerful reminder of the enduring vision of the founders of TWAS on the use of science, technology, and innovation for the benefit of humanity. It underscored the importance of excellence in our endeavours, the transformative power of collaborations and partnerships, and the key role they play in nurturing the next generation of science leaders. It also reaffirmed our commitment to amplifying the voices of the global South, ensuring that the richness and diversity of both challenges and successes from across the developing world are recognized for their global impact.

We are living through complex, unprecedented, and challenging times. Our hope lies in science and innovation that benefit everyone, everywhere. Our accomplishments in 2024 have been possible through our long-standing and deeply valued partnerships, most notably with the Italian government through its Ministry of Foreign Affairs and International Cooperation [MAECI], the Italian Agency for Development Cooperation [AICS], the Friuli Venezia Giulia region [FVG], and the Friuli Venezia Giulia Scientific and Innovation System [SiS FVG]. These partnerships reinforce TWAS's deep roots in the country and region—connections that are vital for our mission.

We also thank the German Federal Ministry of Education and Research [BMBF], the Swedish International Development Cooperation Agency [Sida], the Elsevier Foundation, the David and Lucile Packard Foundation, national governments of Brazil and Chile, and the American Association for the Advancement of Science [AAAS].

We also acknowledge that our work would not have been as impactful without the invaluable contributions of our associated organizations. The Abdus Salam International Centre for Theoretical Physics [ICTP] has provided essential support and partnership to TWAS for over four decades. We are equally grateful to work with the Organization for Women in Science for the Developing World [OWSD] and the InterAcademy Partnership [IAP], whose secretariats are hosted by our Academy.

We also extend our sincere thanks to our five Regional Partners, who keep TWAS closely connected to grassroots science in different regions of the developing world, and to the TWAS Young Affiliates Network [TYAN], which brings fresh energy to the Academy by fostering links among early-career scientists and promoting international collaboration.

Much has been accomplished thanks to the active engagement of the TWAS Council and TWAS Fellows, who generously gave their time by serving on committees and representing our Academy at key meetings and conferences. Their support also extends to the sponsorship of TWAS excellence awards and contributions to the TWAS endowment fund, for which we are deeply grateful.

Notably, several TWAS Fellows continue to make valuable contributions to the United Nations Intergovernmental Panel for Climate Change [IPCC]. Further, through support from the David and Lucile Packard Foundation, TWAS organized a landmark meeting that brought together 45 scientists from 36 developing countries and 15 IPCC-affiliated climate



experts. This event reflected upon the diversity of climate change's effects in the global South, and helped amplify participants' voices in global climate discussions. Meanwhile, the TWAS Pandemic Preparedness Committee has remained active, engaging TWAS Fellows through insightful webinars and regular newsletters. The Committee continues to monitor trends in new and emerging epidemics, contributing to global efforts in health security and preparedness.

We proudly welcomed 74 new Fellows to TWAS in 2024, effective 2025. These outstanding scientists—primarily from the global South, including TWAS-identified Science- and Technology-Lagging Countries [STLCs]—represent excellence across 10 subject categories. To keep pace with the rapid evolution in digital technologies, our Academy has introduced a new subject category: Quantum Information and Computational Sciences. This addition reflects the latest advancements in knowledge generation and ensures TWAS's selection process remains aligned with emerging scientific frontiers.

We extend our sincere gratitude to ICTP Director Atish Dabholkar, who served as TWAS interim executive director, and to TWAS Fellow Seifallah Randjbar-Daemi. Both provided invaluable support to our Academy during a critical transition period, while also planning the 60<sup>th</sup> anniversary celebrations of ICTP. Following an extensive search process, we were delighted to welcome Marcelo Knobel of Brazil as the new TWAS executive director, effective December 2024. Knobel is a familiar figure within the TWAS community, having first joined as a Young Affiliate and later being elected as a TWAS Fellow. His academic leadership, dedication to science excellence, and commitment to using science for the betterment of society aligns strongly with TWAS's values and vision.

Remaining true to its mission, TWAS continued to build critical scientific capacity in the global South. A key milestone was our workshop held in Dakar, Senegal, in November, which brought together TWAS research grantees—including recipients of Sida Research Grants and BMBF Seed Grants for new African Principal Investigators. The event focused on

strengthening essential skills such as science communication, identifying predatory journals, writing successful grant proposals, and fostering intra-African academic networks.

The renewal of a five-year agreement with the National Council for Scientific and Technological Development [CNPq] in Brazil for 50 PhD students is a notable additional opportunity for promising emerging scientists from the global South. Beneficiaries of this programme will join hundreds of other PhD and postdoctoral students who have, and continue to, benefit from North-South, South-South, and South-North partnerships and collaborations across numerous institutions.

In partnership with AAAS, TWAS hosted the 11<sup>th</sup> Course on Science Diplomacy, a highly sought-after and competitive event for emerging science leaders. TWAS, with the Chinese Academy of Sciences [CAS] and the Elsevier Foundation, convened 20 women scientists from 17 countries to present the results of their novel and innovative action-based climate-change projects in Beijing, China. Together with the Islamic Development Bank [IsDB], crucial support through collaborative research grants was provided to displaced scientists in Yemen and Jordan. We are also proud of the latest slate of TWAS awardees, who represent the best of developing-world science. They include awards sponsored by some of our TWAS Fellows, as well as one by CAS, and a full list can be found on page 43.

Moreover, TWAS was an active partner in the planning of the World Science Forum hosted by the Hungarian Academy of Science; the Science for Society Forum hosted in Kyoto, Japan; and the Forum for Big Data for Sustainable Development hosted by the International Research Centre of Big Data for Sustainable Development Goals [CBAS].

Finally, 2024 ended with exciting news that the Brazilian Academy of Sciences, under TWAS Fellow Helena Nader's leadership, will host the next TWAS General Conference in Rio de Janeiro from 29 September to 2 October 2025. An exciting programme with inspiring speakers has been assembled and we look forward to welcoming all of you there.

# A YEAR 0

*The year 2024 was a time of transition and promise for TWAS. The Academy and its partners continued to build science in the global South through its traditional fellowship, grant, exchange, and science diplomacy programmes. But several special events highlighted issues of importance to the TWAS mission, and new leadership set the stage for the Academy's fifth decade of service. Among the most notable events and announcements in 2024 were:*

## 1 Workshop with IPCC experts

TWAS brought together 45 scientists from 36 developing countries and 15 highly accomplished climate experts with the Intergovernmental Panel on Climate Change (IPCC) in Trieste, Italy, for a workshop in May. Through this training opportunity, scientists from some of the developing countries that will be most troubled by climate change were provided with the tools to be heard by international organizations, influence international priorities, and minimize the harm to their countries. [For more on science policy, see page 20]



## 2 Science diplomacy in Trieste

Twenty science diplomacy enthusiasts attended the 11<sup>th</sup> AAAS-TWAS Course on Science Diplomacy in June, in Trieste, Italy. For the fourth time, they were grouped into 'participant pairs'—one early-career scientist and one policymaker each from the same country—which attended presentations and discussions on issues in science diplomacy. Thanks to this course, there are today 388 course alumni



# F IMPACT



every two years under an agreement signed with the government of Brazil. The fellowships were established in a five-year agreement with the National Council for Scientific and Technological Development (CNPq), and are central to TWAS's mission—with each new PhD scientist, developing countries build a foundation for scientific strength. [For more on fellowships, see page 16]



## 4 Skill development in Dakar

TWAS organized a skill-building workshop in Dakar, Senegal, in November—an event designed to enhance the scientific skills of African scientists, fostering a stronger scientific community across the continent. The event brought together 64 grantees from 20 African countries, and marked the first-ever combination of the TWAS Research Grants Programme, supported by the Swedish International Development Cooperation Agency (Sida) and the Seed Grant for New African Principal Investigators [SG-NAPI] Programme, supported by the German Federal Ministry of Education and Research (BMBF). [For more on research grants, see page 18]



from 89 countries equipped with the tools to influence or implement policies and spread knowledge about the field throughout the world. [For more on science diplomacy, see page 22]

## 3 Return of CNPq fellowships

In October, TWAS announced the restoration of a programme to provide up to 50 PhD opportunities to developing-world scientists

## 5 Knobel named executive director

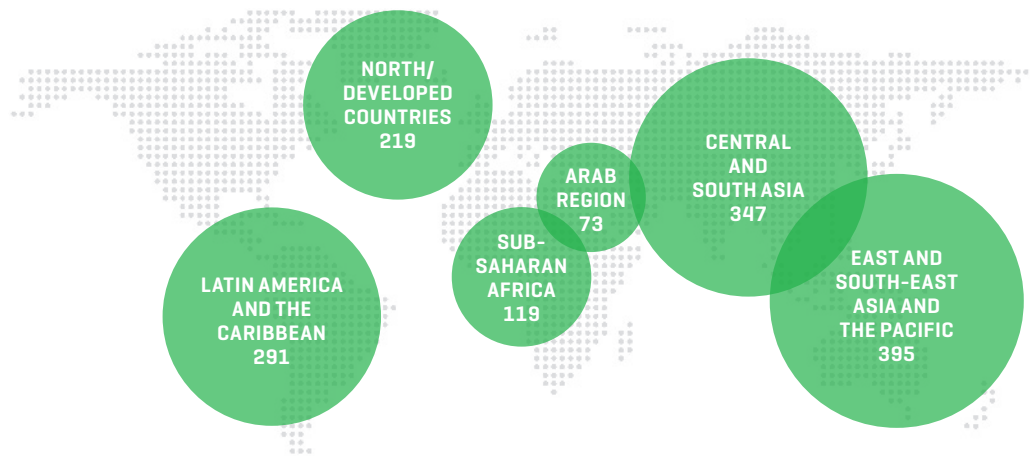
The Academy welcomed Marcelo Knobel as its new executive director in December, succeeding ICTP Director Atish Dabholkar, who served as interim executive director for about a year prior. A Brazilian physicist, Knobel is an experienced academic leader and strong advocate for science communication and higher education. Before joining TWAS, Knobel was the 12<sup>th</sup> rector of the University of Campinas, in Brazil. [For more on science policy, see page 20]

# WHO W

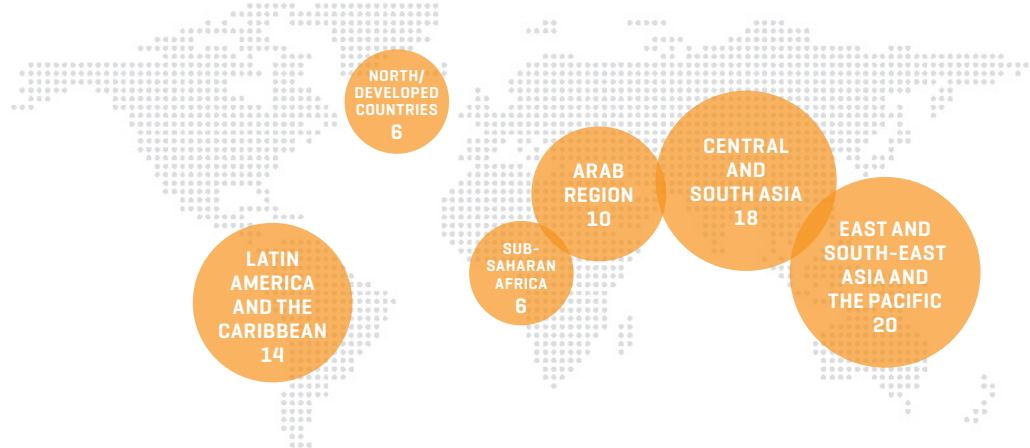
As a global, merit-based science academy, TWAS represents the elite of scientific accomplishment in, or related to, the developing world. Only those scientists who have achieved the highest level of international standards—and have made significant contributions to the advancement of science—can be elected as lifetime Fellows.

In 2017, the TWAS Council decided that Fellows elected in December of one year would be inducted on 1 January of the following year. The charts below represent TWAS membership as of 31 December 2024 [including TWAS Fellows elected in 2024 but officially inducted in 2025].

### Total TWAS Fellows, by region



### TWAS Fellows elected in 2024, by region

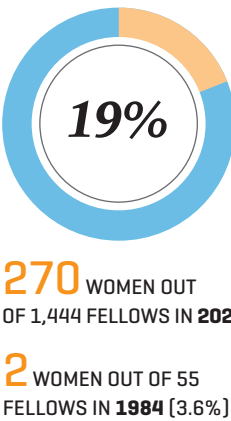


For a full list of Fellows elected in 2024, please see page 41

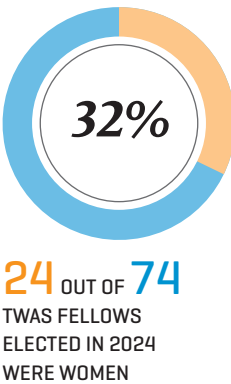
### Fellows



### Women Fellows



### New Fellows





# E ARE

## TWAS FELLOWS AND YOUNG AFFILIATES

### TWAS Fellows elected in 2024 by country of residence

<b>10</b>	BRAZIL, CHINA
<b>9</b>	INDIA
<b>7</b>	MALAYSIA
<b>4</b>	SOUTH AFRICA
<b>3</b>	BANGLADESH <sup>1,2</sup> ; MOROCCO; PAKISTAN
<b>2</b>	CUBA; EGYPT; GERMANY; UNITED STATES OF AMERICA [THE]; VIET NAM
<b>1</b>	ALGERIA <sup>3</sup> ; BOLIVIA [PLURINATIONAL STATE OF] <sup>2,3</sup> ; CANADA; GUYANA <sup>3</sup> ; IRAN [ISLAMIC REPUBLIC OF]; JORDAN <sup>3</sup> ; MADAGASCAR <sup>1,2,3</sup> ; NEPAL <sup>1,2</sup> ; NIGERIA; PHILIPPINES [THE]; QATAR <sup>3</sup> ; SAUDI ARABIA <sup>3</sup> ; UNITED ARAB EMIRATES [THE] <sup>3</sup> ; UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND [THE]; UZBEKISTAN

<sup>1</sup> UN-identified Least Developed Country (LDC)

<sup>2</sup> TWAS-identified Science- and Technology-Lagging Countries (STLCs)

<sup>3</sup> Global-South country considered to be underrepresented in membership by TWAS

### Young Affiliates

**146**  
TOTAL YOUNG AFFILIATES

**438**  
TOTAL YOUNG AFFILIATES AND ALUMNI COMBINED (40% WOMEN)

Four long-time supporters make the work of TWAS possible:

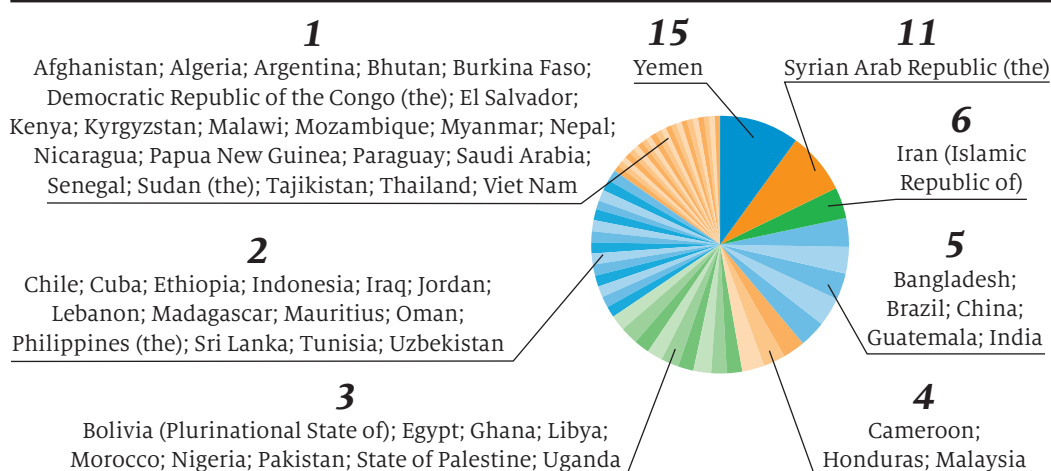
- **The Government of Italy**, through the **Ministry of Foreign Affairs and International Cooperation (MAECI)**, provides core funding;
- **The Swedish International Development Cooperation Agency (Sida)** supports TWAS research grants, science diplomacy and communications initiatives;
- **The United Nations Educational, Scientific and Cultural Organization (UNESCO)** administers TWAS funds and personnel;
- **The Abdus Salam International Centre for Theoretical Physics (ICTP)** hosts TWAS on its campus in Trieste, Italy, and provides administrative support.

### Countries with TWAS Fellows

More info: [www.twas.org/directory/overview](http://www.twas.org/directory/overview)

Algeria	China	Finland	Lao People's Democratic Republic (the)	Pakistan	Spain	United Kingdom of Great Britain and Northern Ireland (the)
Argentina	Taiwan, China	France	Republic (the)	Panama	Sri Lanka	United Republic of Tanzania
Australia	Colombia	Gambia (the)	Lebanon	Peru	State of Palestine [the]	United States of America [the]
Austria	Congo (the)	Georgia	Libya	Philippines [the]	Sudan [the]	Uruguay
Azerbaijan	Cuba	Germany	Madagascar	Puerto Rico	Sweden	Uzbekistan
Bahrain	Côte d'Ivoire	Guatemala	Malawi	Qatar	Switzerland	Venezuela [Bolivarian Republic of]
Bangladesh	Democratic Republic of Korea	Guyana	Malaysia	Republic of Korea [the]	Tajikistan	Viet Nam
Barbados	India	Hungary	Mali	Russian Federation [the]	Thailand	Yemen
Belgium	Iran [Islamic Republic of]	Iran [Islamic Republic of]	Mauritius	Saudi Arabia	Togo	Zambia
Benin	Italy	Iraq	Mexico	Senegal	Trinidad and Tobago	Zimbabwe
Bolivia	Japan	Israel	Mongolia	Serbia	Tunisia	
[Plurinational State of]	Jordan	Italy	Morocco	Sierra Leone	Türkiye	
Botswana	Kazakhstan	Japan	Nepal	Singapore	Ukraine	
Brazil	Kenya	Democratic Republic of the Congo [the]	New Zealand	South Africa	United Arab Emirates [the]	
Burundi	Kuwait	Ecuador	Nicaragua			
Cameroon		Egypt	Nigeria			
Canada		El Salvador	Norway			
Chile		Ethiopia	Oman			

### TWAS Young Affiliates in 2024 by country of residence\*



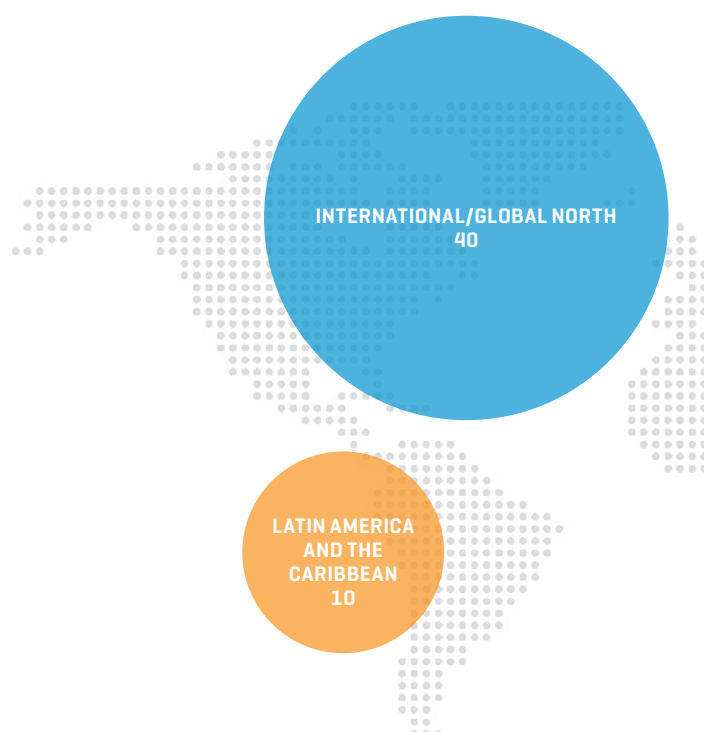
\* Scientists selected under the Islamic Development Bank-TWAS Refugee and Displaced Young Scientists Programme are classified by country of origin.

# TWAS PA

## INTERNATIONAL/GLOBAL NORTH

- Abdus Salam International Centre for Theoretical Physics (ICTP), Italy
- Accademia Nazionale dei Lincei, Italy
- American Association for the Advancement of Science (AAAS), the United States of America
- Area Science Park, Italy
- Autonomous Region of Friuli Venezia Giulia (FVG), Italy
- Biological and Toxin Weapons Convention (BWC), Switzerland
- David and Lucile Packard Foundation, the United States of America
- Elettra Synchrotron Trieste, Italy
- Elsevier Foundation, Kingdom of the Netherlands
- Ernesto Illy Foundation, Italy
- Federal Ministry of Education and Research (BMBF)\*, Germany
- German Research Foundation (DFG), Germany
- Global Young Academy (GYA), Germany
- InterAcademy Partnership (IAP), Italy
- Intergovernmental Panel on Climate Change (IPCC), Switzerland
- International Centre for Genetic Engineering and Biotechnology (ICGEB), Italy
- International Development Research Centre (IDRC), Canada
- International Institute for Applied Systems Analysis (IIASA), Austria
- International Mathematical Union (IMU), Germany
- International Network of Government Science Advice (INGSA), New Zealand
- International School for Advanced Studies (SISSA), Italy
- International Science Council (ISC), France
- Islamic Development Bank (IsDB), Saudi Arabia
- Italian Agency for Development Cooperation (AICS), Italy
- Lindau Nobel Laureate Meetings, Germany
- Materials Foundry, National Research Council, Italy
- Ministry of Foreign Affairs and International Cooperation (MAECI), Italy
- National Academies of Sciences, Engineering and Medicine, the United States of America
- National Institute of Oceanography and Applied Geophysics (OGS), Italy
- National Institute for Nuclear Physics (INFN), Italy
- Organization for Women in Science for the Developing World (OWSD), Italy
- Swedish International Development Cooperation Agency (Sida), Sweden
- The Scientific and Technological Research Council of Türkiye (TÜBİTAK), Türkiye
- Trieste International Foundation for the Progress and Freedom of Science (FIT), Italy
- TWAS Young Affiliates Network (TYAN), Italy

- United Nations Educational, Scientific and Cultural Organization (UNESCO), France
- United Nations Technology Bank for the Least Developed Countries (UNTB), Türkiye
- University of Trieste, Italy
- University of Udine, Italy
- World Science Forum, Hungary



## LATIN AMERICA AND THE CARIBBEAN

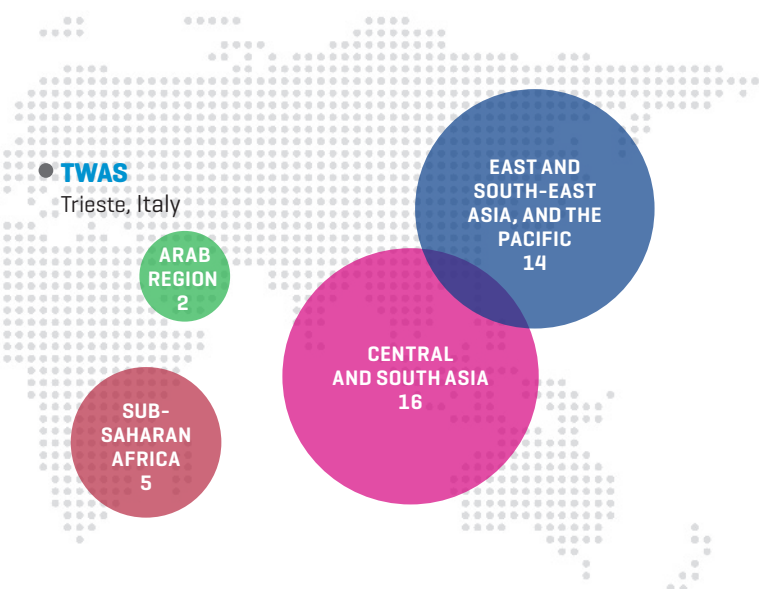
- Brazilian Academy of Sciences, Brazil
- Caribbean Community (CARICOM), Guyana
- Chilean Academy of Sciences, Institute of Chile, Chile
- Ministry of Science, Technology and Innovation, Argentina
- Ministry of Science, Technology and Innovation, Brazil
- National Council for Scientific and Technological Development (CNPq), Brazil
- National Agency for Research and Development (ANID), Chile
- National Council of Science and Technology (CONACYT), Mexico
- National Scientific and Technical Research Council (CONICET), Argentina
- São Paulo Research Foundation (FAPESP), Brazil

\* In 2025, this partner changed their name to the Federal Ministry of Research, Technology and Space (BMFTR)—but for the purposes of this report we are using the name they had in 2024.

# RTNERS

“ Partnership across the world—both North and South—is the essential ingredient that enables TWAS to conduct its work strengthening developing-world science. ”

**Quarraisha Abdool Karim**, TWAS President



## ARAB REGION

- Bibliotheca Alexandrina (BA), Egypt
- King Abdullah University of Science and Technology (KAUST), Saudi Arabia

## SUB-SAHARAN AFRICA

- Academy of Science of South Africa (ASSAf), South Africa
- African Academy of Sciences (AAS), Kenya
- International Centre of Insect Physiology and Ecology (icipe), Kenya
- National Research Foundation (NRF), South Africa
- Sudanese National Academy of Sciences (SNAS), the Sudan

## EAST AND SOUTH-EAST ASIA, AND THE PACIFIC

- Academia Sinica, Taiwan, China
- Academy of Sciences Malaysia, Malaysia
- The Alliance of International Science Organization for the Belt and Road Regions (ANSO), China
- China Association for Science and Technology (CAST), China
- Chinese Academy of Sciences (CAS), China
- International Research Center of Big Data for Sustainable Development Goals, China (CBAS)
- International Science, Technology and Innovation Centre for South-South Cooperation (ISTIC), Malaysia
- Lenovo Group Limited, China
- Ministry of Science and Technology, China
- National Center for Genetic Engineering and Biotechnology (BIOTEC), Thailand
- Science University of Malaysia (USM), Malaysia
- Siwei Cheng Foundation, China
- Thailand Science Research and Innovation (TSRI), Thailand
- University Putra Malaysia (UPM), Malaysia

## CENTRAL AND SOUTH ASIA

- Centre of Excellence in Molecular Biology (CEMB), University of the Punjab, Pakistan
- Commission on Science and Technology for Sustainable Development in the South (COMSATS), Pakistan
- COMSATS University Islamabad (CUI), Pakistan
- Council of Scientific and Industrial Research (CSIR), Ministry of Science and Technology, India
- Department of Biotechnology, Ministry of Science and Technology, India
- Department of Science and Technology (DST), Ministry of Science and Technology, India
- Indian Association for the Cultivation of Science (IACS), India
- International Center for Chemical and Biological Sciences (ICCBS), Pakistan
- Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), India
- Lahore University of Management Sciences (LUMS), Pakistan
- Ministry of Science, Research and Technology, the Islamic Republic of Iran
- National Centre for Physics (NCP), Pakistan
- Organization of Islamic Cooperation Standing Committee on Scientific and Technological Cooperation (COMSTECH), Pakistan
- Searle Pakistan Limited, Pakistan
- S.N. Bose National Centre for Basic Sciences (SNBNCBS), India
- The Dawood Foundation (TDF), Pakistan



# HONOURING SCIENTIFIC EXCELLENCE

**T**WAS Awards provide a powerful incentive for scientists to excel on new levels, while bringing global recognition to the achievements of researchers from the developing world.

The Academy administers numerous awards—some of them annual, others conferred every two years. These awards are often named after generous and highly accomplished TWAS Fellows.

• The **2024 TWAS-Abdool Karim Award** recipient was Yêyinou Laura Estelle Loko of Benin, director of the National High School of Applied Biosciences and Biotechnologies, Benin. She was honoured for her contributions to the development of environmentally friendly biological control methods against insect pests and her achievements in enhancing the

▼ Left: TWAS-CAS Young Scientist Award in Life Sciences recipient Fu Qiamei of China.

Right: TWAS-Samira Omar Innovation for Sustainability Award recipient Tista Prasai Joshi of Nepal.



...  
For a complete  
list of all 2024  
TWAS Awards,  
see p. 43  
...



▲ From left: TWAS-Mohammad A. Hamdan Award recipient Ihsen Yengui of Tunisia, TWAS-Abdool Karim Award recipient Yeyinou Laura Estelle Loko of Benin, TWAS-Atta-ur-Rahman Award recipient Bipeen Dahal of Nepal, and TWAS-Fayzah M. Al-Kharafi Award recipient Samia Subrina of Bangladesh.

knowledge and conservation of plant genetic resources in the Republic of Benin.

- The **2024 TWAS-Fayzah M. Al-Kharafi Award** recipient was Samia Subrina of Bangladesh, a nanomaterials scientist and professor at Bangladesh University of Engineering and Technology. She was honoured for groundbreaking research in nanoscale materials and devices, providing innovative solutions for electronic industry, heat management, and energy harvesting.

- The **2024 TWAS-Samira Omar Innovation for Sustainability Award** recipient was Tista Prasai Joshi of Nepal, a senior scientific officer at Nepal Academy of Science and Technology. She was honoured for her work improving drinking water quality, particularly in addressing arsenic contamination of groundwater in Nepal.

- The **2024 TWAS-Atta-ur-Rahman Award** recipient was Bipeen Dahal of Nepal, a chemist at Tribhuvan University in Nepal. He was honoured for his contributions to the synthesis of carbon nanomaterials, including carbon quantum dots and their composites, for applications in energy conversion and storage, as well as addressing environmental issues.

- The **2024 TWAS-Mohammad A. Hamdan Award** recipient was Ihsen Yengui of Tunisia, a mathematician at the University of Sfax in Tunisia. He was honoured for his significant contributions to mathematical research

in Tunisia and his dedicated commitment to training the new generation of young mathematicians from Tunisia and sub-Saharan Africa.

- The **2024 TWAS-CAS Young Scientist Award in Life Sciences** went to Fu Qiaomei of China, a paleogenetic researcher from the Institute of Vertebrate Paleontology and Paleoanthropology of the Chinese Academy of Sciences. She was honoured for her innovations in key ancient genomic technologies and contributions in human evolution across Eurasia, illuminating how discovered ancestry has shaped the genetic makeup and adaptive traits of modern humans.

- **TWAS Awards:** The Academy provides a series of awards, divided by scientific section, to individual scientists who have been working and living in a developing country for at least 10 years. The cycle of the TWAS Awards is now every two years, and they are announced two years in advance. In 2022, TWAS announced 13 TWAS Awards for 2024 (named in TWAS Annual Report 2022). In 2024, TWAS named 16 TWAS Award recipients for 2026 as well as two recipients of the 2026 TWAS-Siwei Cheng Award in Economic sciences (names on page 43).

- **TWAS Medals:** TWAS named five TWAS Medalists for 2025 who have been invited to give guest lectures at the TWAS General Conference in Brazil (names on page 43).

# EDUCATION AND TRAINING

**T**WAS manages the world's largest programme for **South-South PhD and postdoctoral research fellowships**. Through the Academy, associated organizations, partners, and early-career researchers can continue their education and gain experience at world-class science institutions in the developing world. In 2024, this included Brazil, China, India, Pakistan, and Türkiye.

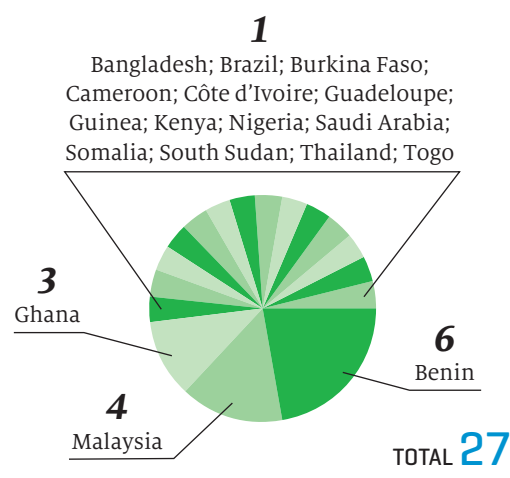
By the end of 2024, a grand total of 2,471 scholars had accepted PhD opportunities from TWAS, with 246 actively pursuing their PhDs on-site at their host institutions. A total of 1,235 fellowship beneficiaries were confirmed to have graduated by the end of the year. A total of 41 new PhDs from 18 developing countries graduated through TWAS fellowships.

Also in 2024, TWAS restored a South-South fellowship programme with the **National Council for Scientific and Technological Development (CNPq)** in Brazil, which will provide up to 50 PhD opportunities to developing-world scientists every two years. The first call for applications under the new South-South Fellowship scheme was launched in October 2024. The first fellowships for a new South-South programme for LDCs with the

**Research Support Foundation of the State of São Paulo (FAPESP)**, Brazil, were also awarded in 2024, based on an agreement signed in 2023.

Finally, in 2024, the **TWAS-IsDB Postdoctoral Fellowship Programme for Women** finished its fourth call for applications, awarding 27 more fellowships, bringing the total, since its inception in 2019, to 100. Additionally, TWAS awarded six **TWAS-Sida PhD Scholarships for Climate Research for Students from LDCs**.

## Awardees of TWAS-IsDB Postdoctoral Fellowship Programme for Women



▼ Majahonkhe Shabangu, a cancer researcher from Eswatini, graduated with a PhD from the University of Cape Town, South Africa in 2024 through a South-South fellowship with the National Research Foundation of South Africa. [Photo provided]





### PhD fellowships

**129** AWARDS  
AVAILABLE  
IN 2024

**70** AWARDED\*

**5** PARTNERS

**5** HOST  
COUNTRIES

### Postdoctoral fellowships

**38** AWARDS  
AVAILABLE  
IN 2024

**53** AWARDED\*

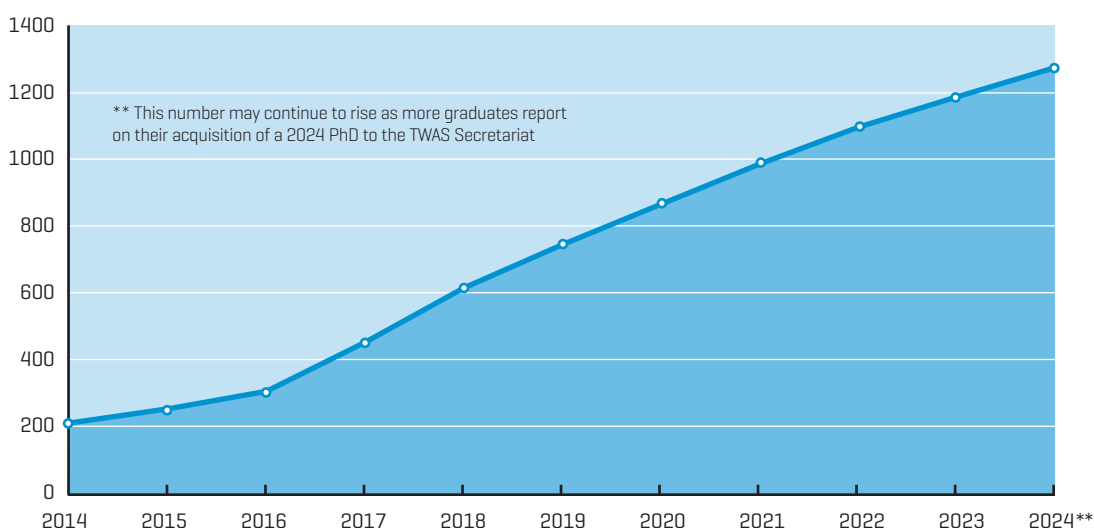
**5** PARTNERS

**3** HOST  
COUNTRIES

**25** ON-SITE

\* This number will increase, as awards from 2024 are still being processed. Traditionally, calls for fellowship applications have opened in the spring or summer, but because programmes are increasingly seeking applications late in the calendar year, from this point forward we are showing both awards available and awards granted. This number includes awards given in 2024 from calls initiated in both 2023 and 2024, and for this reason it is larger than the amount available in the case of postdoctoral fellowships.

### Cumulative total of all TWAS PhDs graduated over the last 10 years



### South-South PhD fellowships programme, a full history:

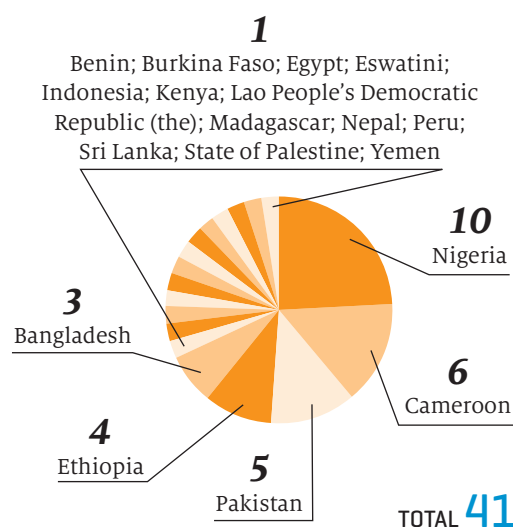
**2,968** PHD FELLOWSHIP OPPORTUNITIES  
AWARDED SINCE THE INCEPTION OF THE  
PROGRAMME

**2,471** FELLOWSHIPS ACCEPTED AND BEGUN  
BY DEVELOPING-WORLD SCIENTISTS

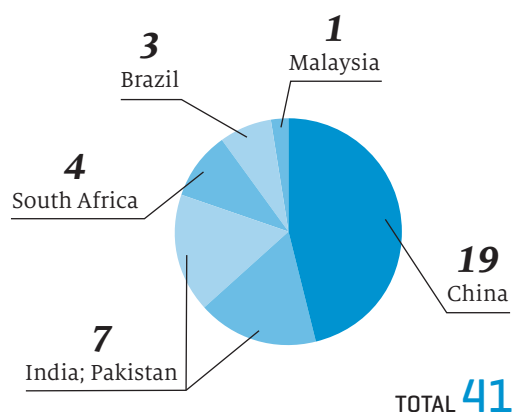
**1,235** PHDs CONFIRMED TO HAVE BEEN  
GRADUATED BY THE END OF 2024

**246** PHD FELLOWSHIP HOLDERS ONSITE  
WORKING TOWARD THEIR DEGREES DURING 2024

### Home country for new 2024 PhD recipients



### Country of training for new PhDs graduated



### VISITING SCIENTISTS

TWAS also provides opportunities to established researchers from the South to pursue collaborations and education, or to gather experience in a country other than their own. In 2024, the programmes included:

- **TWAS-UNESCO Associateship Scheme:** 10 developing-world scientists from 5 countries
- **TWAS-DFG Cooperation Visits Programme:** 50 scientists from 16 sub-Saharan African countries visiting Germany
- **TWAS Fellowships for Research and Advanced Training:** 17 developing-world scientists from 12 countries
- **TWAS-SISSA-Lincei Research Cooperation Visits Programme:** 12 developing-world scientists from 11 countries visiting Italy
- **TWAS Visiting Expert Programme:** 9 experts aiding scientific development in 9 different countries in the global South

# PROGRESS THROUGH RESEARCH

TWAS provides grants to researchers in targeted developing countries for specialized equipment, consumable supplies, scientific publications, and training of master's degree students. These grants help to lay a foundation for research in countries with scarce resources.

The Academy's largest grants programme is **TWAS Research Grants**, which awards key funding to researchers in Science- and Technology-Lagging Countries (STLCs) identified by TWAS. The programme has existed since 1986, and includes four categories, providing support for individual scientists, research groups, interdisciplinary research, and equipment maintenance. Core funding is provided by the **Swedish International Development Cooperation Agency (Sida)**, with 16 of this year's 52 grants funded by the **German Federal Ministry of Education and Research (BMBF)**.

Also supported by BMBF are the **Seed Grants for New African Principal Investigators (SG-NAPI)**, which in 2024 made its fourth call for applications. The programme supports projects in sub-Saharan Africa, and seeks to facilitate the return to Africa of young scientists who

obtained their PhD outside of their home country and help local researchers to establish their own laboratories.

TWAS also held a special event in 2024, **the 2024 TWAS Skill Building Workshop**, which took place in Dakar, Senegal, 5-8 November 2024. This groundbreaking event is designed to enhance the scientific skills of African

▼ Group discussions at the 2024 TWAS Skill-Building Workshop in Dakar, Senegal.  
[Photo: G. Ortolani/TWAS]



► Fanna Maina Assane Mamadou, SG-NAPI grantee, Institut National de la Recherche Agronomique du Niger, Niamey, Niger; and Marlaine Michele Boukandou Mounanga [from behind], SG-NAPI grantee, Institute of Pharmacopoeia and Traditional Medicine, Pharmacology-Toxicology Department, Libreville, Gabon. [Photo: G. Ortolani/TWAS]



## TWAS Research Grants awarded

 **2,815**  
SINCE 1986

## Field of research of 2024 TWAS Research Grants:

**20** BIOLOGY  
**15** PHYSICS;  
CHEMISTRY  
**2** MATHEMATICS

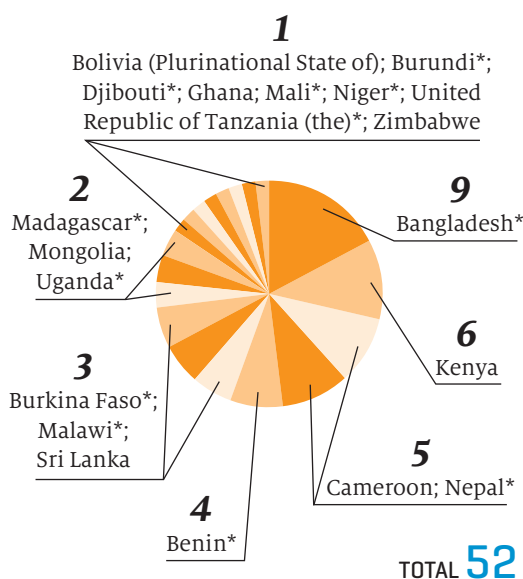
## SG-NAPI Grants awarded

 **96**  
SINCE 2021

## Field of research of 2024 SG-NAPI Grants

**6** AGRICULTURE  
**2** PHYSICS  
**1** BIOLOGY;  
CHEMISTRY;  
EARTH SCIENCES;  
ENGINEERING;  
MEDICAL SCIENCES

## Where did TWAS Research Grants go in 2024?

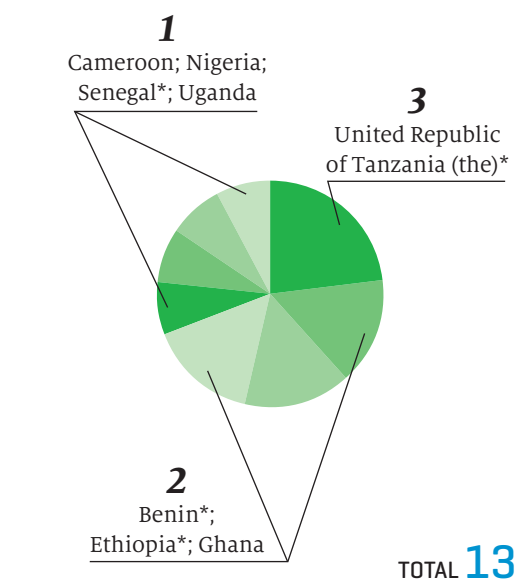


\* Least Developed Country

scientists, fostering a stronger scientific community across the continent. It marked the first-ever combination of the TWAS Research Grants and SG-NAPI programmes, and brought together 62 grantees from 21 African countries.

Additionally, TWAS administers the **TWAS-Elsevier Foundation Project Grants for Gender Equity and Climate Action**, which is sponsored by the **Elsevier Foundation**. They were focused on projects, rather than research, and awarded to seven all-women teams for scientific projects

## Where did SG-NAPI Grants go in 2024?



\* Least Developed Country

related to climate change with the potential to produce tangible change. The leader of each project is a woman scientist, holding a PhD, living and conducting scientific work in an STLC.

The Academy also bestowed a collaborative grant jointly with the Islamic Development Bank [IsDB] called the **TWAS-IsDB Collaborative Research Grant**. The grant went to two teams of researchers in Yemen and Jordan researching a means to monitor the emergence of diseases through wastewater testing.



# SUPPORTING SCIENCE POLICY

With a network of over 1,440 eminent scientists from 112 countries and over 40 years of experience in the global science community, TWAS is ideally positioned to provide advice on science policy for the developing world and support for the United Nations Sustainable Development Goals.

**IPCC workshop:** In 2024, the role of TWAS in climate policy took centre stage through the workshop called the Joint Climate Science Network, Mentorship and Capacity Growth. The workshop was realized through vital funding from the David and Lucile Packard Foundation.

For this workshop, TWAS brought together 45 scientists from 36 developing countries and 15 highly accomplished climate experts with the UN-run Intergovernmental Panel on Climate Change (IPCC) in Trieste, Italy, on 14–16 May. While there, the global South researchers received unique training on how the IPCC works, as well as the challenges of communicating its findings to policymakers and a global audience.

The workshop effectively merged the missions of IPCC, which provides governments with assessments of the current scientific literature that they can use to develop climate policies,

and TWAS, which advances science in the global South.

The objective was to provide scientists from developing countries, some of which will be among the most troubled by climate change, with the tools to be heard by international organizations, influence international priorities, and minimize the harm to their countries.

Among the participants were 12 PhD students supported by the TWAS-Sida PhD Scholarships for Climate Research for Students from Least

▼ Ladislaus Benedict Chang'a, IPCC vice-chair and research scholar, International Institute for Applied Systems Analysis. [Photo: G. Ortolani/TWAS]





▲ Right: Anna Pirani, senior research associate, Euro-Mediterranean Center on Climate Change. [Photo: G. Ortolani/TWAS]

Left: Participants engaging in group discussions at the Joint Climate Science Network, Mentorship and Capacity Growth in Trieste, Italy. [Photo: G. Ortolani/TWAS]

► From left: Atish Dabholkar and Romain Murenzi.

Developed Countries, financially supported by the [Swedish International Development Cooperation Agency](#).

Among the experts present were Jan Fuglestad, the research director for [Centre for International Climate and Environmental Research](#) in Norway, who was an IPCC vice-chair in Working Group I during the [Sixth Assessment Report](#); Ladislaus Chang'a, a Tanzanian meteorologist, IPCC vice-chair, and research scholar with the [International Institute for Applied Systems Analysis](#) in Austria; and Anna Pirani, an Italian climatologist, science advisor to the [Italian Ministry of Environment and Energy Security](#), alternate focal point for Italy to the IPCC, and former head of IPCC Working Group I Technical Support Unit.



**Leadership transition:** TWAS welcomed Marcelo Knobel as its new executive director in December 2024. Knobel succeeds [ICTP Director Atish Dabholkar](#), who served as interim executive director from 1 December 2023 until 8 December 2024, who was in turn preceded by Executive Director Romain Murenzi.



“Diversity is a fundamental element for the authority and relevance of the IPCC’s work in the international political arena. We hope to see the names of the participants among the contributors to the next IPCC assessment report.”

**Anna Pirani**, Italian climatologist, science advisor to the Italian Ministry of Environment and Energy Security, alternate focal point for Italy to the IPCC, and former Head of IPCC Working Group I Technical Support Unit

Knobel, of Brazil, is a pioneer in the field of magnetism, having led an internationally recognized research group whose research had applications ranging from magnetic recording systems to nanomedicine. He was the 12<sup>th</sup> rector of the [University of Campinas \(Unicamp\)](#), in Brazil. He is also dedicated to science communication, having founded Unicamp’s [Science Exploratory Museum](#) and conducted research on the public perception of science and higher education. He is a member of the [Brazilian Academy of Sciences](#) and the [Academy of Sciences of São Paulo State](#).

# SCIENCE DIPLOMACY



◀ Group discussions  
(from left): Anywar Godwin, lecturer, Makerere University, Uganda; Marianela Rodríguez, researcher INTA-CONICET, Argentina; James Hammond, professor of geophysics, Birkbeck, University of London, the United Kingdom of Great Britain and Northern Ireland; Immaculate Nakamya, acting head, Science and Technology Policy Analysis and Development Unit, Uganda National Council for Science and Technology, Uganda; Sneha Sinha, consultant, Research Information and System for Developing Countries, New Delhi, India; Nidhi Singh, scientist, Indian Council of Medical Research, India; and Malén Vazquez, science coordinator, Argentine National Directorate of Promotion of Culture, Education and Science; Ministry of Foreign Affairs, International Trade and Worship, Argentina.  
[Photo: G. Ortolani/TWAS]

To address regional and global challenges, the world requires effective partnerships between scientists, policymakers, and diplomats. TWAS, based in Italy and with networks that span the world, is uniquely positioned to help bring these communities together.

Key partners of the science diplomacy programme include the **American Association for the Advancement of Science (AAAS)**, which collaborates with TWAS on an annual summer course, and the **Swedish International Development Cooperation Agency (Sida)**, which has provided essential financial support to date.

## **AAAS-TWAS Course on Science Diplomacy:**

The 11<sup>th</sup> edition of this globally recognised course was held 18–20 June 2024, in Trieste, Italy. For the fourth time, attendees worked in ‘participant pairs’—one early-career scientist and one policymaker each typically from the same country—to understand better the theory and practice of science diplomacy and to test the tools that are important in its application.

The course was attended by 20 participants, or 10 pairs. The pairs were challenged to play out roles in simulated negotiations on difficult topics—with international competing interests



► Group photo: all the participants in the 11<sup>th</sup> AAAS-TWAS Course on Science Diplomacy. [Photo: G. Ortolani/TWAS]

## AAAS-TWAS Course on Science Diplomacy

**20** PARTICIPANTS

**11** REPRESENTED

COUNTRIES

[ARGENTINA, CAMEROON, GERMANY, GUATEMALA, INDIA, KAZAKHSTAN, MADAGASCAR, NEPAL, PAKISTAN, THE SUDAN, UGANDA]

**Participants and speakers were divided as follows**

**13** WOMEN [65%]

**8** FROM LDCs [40%]  
MADAGASCAR, NEPAL, THE SUDAN, UGANDA

**10** YOUNG SCIENTISTS (AGE 40 OR BELOW) [50%]

**10** POLICYMAKERS [50%]

**17** SPEAKERS [6 FROM THE GLOBAL SOUTH]

▼ María Eugenia Cabrera Catalán taking the floor at the 11<sup>th</sup> AAAS-TWAS Course on Science Diplomacy. [Photo: G. Ortolani/TWAS]



and thus requiring application of science diplomacy skills—such as the construction of a dam on a shared river, or the conservation of endangered species in a transboundary forest. Since its inception in 2014, the programme has now trained 388 alumni from 89 countries, some of whom have since advised policymakers and governments on transboundary issues.

AAAS and the Organization for Women in Science for the Developing World (OWSD) also contributed funding to the programme.

Other noteworthy science diplomacy achievements in 2024 include:

A 1.5-day **Course on Science Diplomacy, Biosecurity and Virus Detection**, held 4–5 March, designed to expose early-career scientists in biotechnology related fields to science diplomacy tools and concepts. All costs were covered by the Biological and Toxin Weapons Convention (BWC), based in Geneva,

“The problem is that we are all isolated, we tend not to collaborate among us. This is indeed the major take-home message for me: the need for planning and working together.”

**María Eugenia Cabrera Catalán**, a Guatemalan physicist, reflecting on the AAAS-TWAS Course on Science Diplomacy

## WHAT IS SCIENCE DIPLOMACY?

Science diplomacy is a broad way of describing how the fields of science and diplomacy continually support one another, and by doing so they also help society as well. Part of the idea is that the fact-focused principles of science can also speak across borders, simultaneously building knowledge and guiding leaders toward peaceful solutions to points of tension.

Switzerland, with TWAS and the InterAcademy Partnership (IAP) providing logistical support. The event had 30 attendees, including 13 women and 12 citizens of TWAS-identified Science- and Technology-Lagging Countries.

Four alumni of the previous year's AAAS-TWAS course who are affiliated to the Thailand Science Research and Innovation agency ran a **pilot science diplomacy workshop for early-to-mid-career researchers** in the ASEAN region [Association of Southeast Asian Nations], on 19–24 August in Bangkok, Thailand, with collaboration from the TWAS Science Diplomacy Unit. At the event, 18 participants, from 9 ASEAN countries, including 12 women, took part in a training that replicated the pairing model of the AAAS-TWAS course.

The assessment of the innovative and impactful pairing model of the AAAS-TWAS summer course is featured in a **joint TWAS-AAAS article** published in December 2024 in the AAAS Science & Diplomacy online journal.

# EMPOWERING WOMEN

Supporting women in research is a central part of the mission of TWAS. The Academy and its partners offer numerous opportunities to women in the developing world, which is not only valuable for the careers of individual researchers, but critical for activating developing nations' full scientific potential.

In 2024, seven projects of the **TWAS-Elsevier Foundation Project Grants for Gender Equity and Climate Action** began their work. This programme stands out because it has three common themes: to strengthen gender equity, address the climate-related needs of local communities, and apply scientific knowledge to real-life scenarios.

In total, 14 projects are ongoing and are entirely led and conducted by women researchers, with one each from Bangladesh, Benin, the Plurinational State of Bolivia, the Congo, Ghana, Guatemala, Kenya, Mozambique, Nepal, Uganda, the United Republic of Tanzania, and three in Zimbabwe. They are made possible by financial support from the Elsevier Foundation, a long-time TWAS partner on multiple projects.

One of TWAS's grant programmes, the **Seed Grant for New African Principal**

**Investigators (SG-NAPI)**, supported by the German Federal Ministry of Education and Research (BMBF) includes a special component called the 'Scientist after Child' scheme. It allows pregnant scientists and new mothers to receive extra funding to hire a lab assistant and benefit from reliable maternity leave support.



## TWAS awardees (by gender)



20

TOTAL IN 2024



40%

TO WOMEN



1,306

TOTAL  
1985-2024



19%

TO WOMEN

◀ Rosemary Bulyaba inspecting the offshoots in a cowpea field.  
[Photo provided]

► The 2024 recipients of the OWSD-Elsevier Foundation Award for Early Career Women Scientists, from left: Augustina Clara Alexander of the United Republic of Tanzania; Lidia Antonella Rivera Peñalva of Honduras; Tasrina Rabia Choudhury of Bangladesh; Shirani Manel Kumari Widana Gamage of Sri Lanka; Zubeda Ukundimana of Uganda. [Photo: OWSD]



Since SG-NAPI's inception in 2021, nine women scientists have benefited from the Scientist after Child component, including one from 2024.

One example is Ugandan agronomist Rosemary Bulyaba, who is exploring how to find varieties of cowpea that are more resilient to adverse climatic conditions, can thrive in various soil types and environments, and whose leaves can be utilized as vegetables and are rich in vital nutrients such as iron and folate. Bulyaba also had to balance her research work with raising a 2-year-old boy and a 4-year-old girl.

TWAS also hosts an influential partner building science capacity in the developing world at its offices in Trieste, Italy—its sister

organization, the **Organization for Women in Science for the Developing World (OWSD)**.

OWSD emerged from a conference organized by TWAS in 1988. It is the first international forum for women scientists from the developing and developed worlds with the objective of strengthening their roles in the development process and promoting their representation in science and technology leadership.

As of the end of 2024, **OWSD had more than 10,800 members**, over 95% of them women with master's or doctorate degrees in scientific subjects living and working in developing countries. OWSD members can network face to face through activities organised by their National Chapters, or through regional and international conferences, as well as online at [owsd.net](http://owsd.net).

OWSD also partners with the Elsevier Foundation to organize annual **Early Career Awards to Women Scientists**. The five awardees for 2024 were **Augustina Clara Alexander** of the United Republic of Tanzania, civil and water resources engineering; **Tasrina Rabia Choudhury** of Bangladesh, analytical chemistry; **Lidia Antonella Rivera Peñalva** of Honduras, marine biology; **Zubeda Ukundimana** of Uganda, environmental engineering; and **Shirani Manel Kumari Widana Gamage** of Sri Lanka, microbiology and plant virology.

“My presence at home brought several benefits to my son, who is more self-confident, assertive, and prompt from a cognitive point of view.”

**Rosemary Bulyaba** on the 'Scientist after Child' component of the SG-NAPI grant programme through TWAS





# YOUNG SCIENTISTS

Every year, each of the Academy's Regional Partners selects up to five brilliant early-career scientists to become **TWAS Young Affiliates**. These young scientists join a growing network of some of the developing world's most promising talents, and provide TWAS with valuable energy and generational perspective.

They also receive further opportunities to interact and learn from TWAS Fellows during their affiliateship, which lasts six years.

Those who complete their terms as Affiliates become **TWAS Alumni**. To date there are 146 current Young Affiliates and 292 Alumni, all of them key contributors to the acceleration of

▼ Representatives of TYAN meet with Miriam Esparza, fourth from left, the ambassador of Ecuador to the Plurinational State of Bolivia about their programmes in the latter country. [Photo provided]







▲ Franco Cabrerizo of TYAN, fourth from left, teaches a course during TYAN's second summer school, held 11–15 March in La Paz, Plurinational State of Bolivia. [Photo provided]

### TYAN Young Affiliates

**146** TOTAL  
CURRENT TWAS YOUNG  
AFFILIATES

[WOMEN: 56%]

**292** TWAS  
YOUNG ALUMNI

[WOMEN: 32%]

**438** TOTAL  
NUMBER AFFILIATES  
AND ALUMNI  
COMBINED

[WOMEN: 40%]

scientific strength in the global South. Since the programme began in 2007, 21 Alumni have progressed to become TWAS Fellows.

In 2016, Young Affiliates took the initiative to found the **TYAN**—at the TWAS General Conference in Kigali, Rwanda—to reinforce ties among the Academy's Young Affiliates. Through TYAN, Affiliates and Alumni share their scientific expertise, skills, and ideas through workshops, networks, and public meetings. They gather together with other scientists, policymakers, entrepreneurs, journalists, and the public at large to safeguard the role of science in decision-making.

Since its founding, TYAN has blossomed into an active organization with a record of accomplishments. As it stands, TYAN organizes regional events to facilitate the success of early-career scientists in the global South. It also publishes reports, organizes outreach programmes, and provides perspectives from young developing-world scientists at international conferences. In recent years, it's also begun to weigh in on major science policy issues, such as open science.

The first edition of **TYAN Summer School**, was held in the Plurinational State of Bolivia on 6–10 March 2023, and building off its success,

“Local scientists in the developing world can easily get access to scientific information, but it's very hard for our students to really have a chance to use their hands. This is the key point, we are giving them the opportunity to use equipment, to work in the lab.”

**Franco Cabrerizo**, TYAN co-chair, on the purpose of TYAN summer schools

TYAN held two more summer schools in 2024. They are designed to equip students with practical skills in various scientific topics critical for sustainable development research, and bridge the gap between theoretical knowledge and practical applications often lacking in developing countries.

In 2024, TYAN organized:

- **A thematic workshop** held 4–6 March in La Paz, Plurinational State of Bolivia, on scientific partnerships in Latin America and the Caribbean with a focus on food, environment, and biotechnology.
- TYAN's **second summer school** held 11–15 March in La Paz, Plurinational State of Bolivia, for young talents in science and tackling issues such as food technology, nutrition, biospectroscopy, animal models in experiments, and photochemistry
- TYAN's **third summer school**, held 11–15 December in Santiago, Chile, featuring hands-on training course on health, biotechnology and environmental sciences.

The Network also provides opportunities through the TYAN Collaborative Grant Award, and for financial support to organize TYAN International Thematic Workshops on key topics in developing-world science. Both programmes began in 2017.

# GLOBAL ACADEMY NETWORKS

TWAS works in close association with several national science academies and international academy networks dedicated to advancing science in the developing world and promoting sustainable development.

**The InterAcademy Partnership (IAP)** is a long-time TWAS partner, with its secretariat hosted by TWAS in its offices in Trieste, Italy. IAP brings together some 150 national, regional and global member academies, which collaborate to support the vital role of science in seeking evidence-based solutions to the world's most challenging problems.

In particular, IAP harnesses the expertise of the world's leading scientific minds to advance sound policies, improve public health, promote excellence in science education, and achieve other development goals. Academy members constitute more than 30,000 leading scientists, engineers and health professionals in over 100 countries.

Here are some major accomplishments of IAP in 2024:

- IAP **conducted an analysis** of thematic overlaps between science academy statements and G7/G20 declarations,

finding strong alignment on priorities and the potential for science academies to shape policy agendas. This report aims to reinforce science-informed policymaking and encourage deeper engagement between academies and governments.

- The 2024 cohort of the IAP **Young Physician Leaders** programme, comprising 21 emerging leaders working in medicine and public health from 20 countries, convened in Berlin, Germany, and joined the World Health Summit in October. Following two days of leadership training, the young leaders prepared a session for presentation at the event. IAP now has 286 alumni of this programme.
- In collaboration with Save the Children, IAP produced a book of case studies on **Climate Change and Health** policy solutions, which was presented at major global science-policy events, including COP29 and the World Science Forum.
- IAP tested a proposed Scientific Advisory Board (SAB) mechanism for the **Biological and Toxin Weapons Convention (BWC)**, focusing on the impact of Artificial Intelligence (AI) on global biosecurity.
- IAP hosted sessions on climate change and





▲ The IAP Young Physician Leaders 2024 during an exercise called the “ambidexterous leadership maze” during the leadership training workshop at ESMT Berlin, in October 2024.  
[Photo: Sofia Nitti/IAP]

health, and on education for sustainable development, at the 2024 **World Science Forum** in Budapest, Hungary.

- IAP launched a **webinar series** on critical science topics, including ethics, AI, and global scientific collaboration, attracting 50-60 attendees per session.
- IAP and the Network of African Science Academies (NASAC) published a report on **Decarbonisation of transport in Africa**, offering policy recommendations.
- IAP funded **grants for projects** on biosecurity, science diplomacy and academic integrity, supporting activities like the Amazon Initiative, an Inter-American Network of Academies of Sciences (IANAS) project to bridge the gap between scientific knowledge and policy implementation in Amazonian countries, and the establishment of new science centres in Africa.

#### **The Chinese Academy of Sciences [CAS]**

is the hub of China’s ambitious research enterprise, and it has long-standing ties with TWAS. CAS collaborates with TWAS on the six CAS-TWAS Centres of Excellence, and on the TWAS-CAS Young Scientists Award for Frontier Science. CAS also participates in a key PhD fellowship programme—the ANSO-CAS-TWAS/UNESCO PhD Scholarship—and hosts

TWAS Regional Partner for East and South-East Asia and the Pacific.

**The Lincei Academy** was established in Italy in 1603. It is today the cultural body of the highest level in Italy. TWAS collaborates with Lincei, as the entire Trieste Science System and the University of Udine, on a three-month cooperation visits programme hosting developing-world scientists in the Friuli Venezia Giulia region, in Italy, to promote collaborative work related to achieving the UN Sustainable Development Goals.

**The Academy of Science of South Africa (ASSAf)** is one of Africa’s leading institutions advocating for science and technology, and hosts TWAS Sub-Saharan Africa Regional Partner at its headquarters in Pretoria.

**The Brazilian Academy of Sciences (ABC)** is a longtime TWAS partner. They both host the TWAS Regional Partner for Latin America and the Caribbean and serve as a liaison between TWAS and the Brazilian government.

**Academia Sinica** of Taiwan, China, has for many years provided TWAS with financial support.

TWAS is also a member of the **International Science Council (ISC)**, an international non-governmental organization that brings together scientific institutions, including many science academies.



# REGIONAL PARTNERS

*TWAS partners in five regions of the developing world perform vital Academy functions.*

They nominate scientists for TWAS awards and select Young Affiliates. They also organize conferences and raise awareness of TWAS and its programmes among scientists of their regions—in particular young scientists under 40—and help to advance support for science among policymakers and with the general public.

Each Regional Partner organizes its own annual meeting for all the TWAS Fellows and Young Affiliates in their respective region, and participates in a joint annual meeting arranged by TWAS in the interest of open dialogue. Regional Partners also arrange their own regional conferences for young scientists that can take many forms. In 2024, each Regional Partner organized at least one conference for young scientists, with a total of 9 events during the year, most held in-person or in hybrid mode, and reaching 485 registered participants. Of these participants 214 (44%) were women, 79 were from LDCs (16%), and 300 (62%) were young scientists. The Regional Partners frequently collaborate with the **TWAS Young Affiliates Network (TYAN)** to advance the careers of young scientists in the regions.

**RIO DE JANEIRO, Brazil** ●  
Brazilian Academy of Sciences

The **Latin America and the Caribbean Regional Partner [TWAS-LACREP]**, alongside the TWAS Young Affiliates Network [TYAN], organized an event entailing summer schools and training courses for students in UN-identified Least Developed Countries [LDCs] and TWAS-identified Science- and Technology-Lagging Countries [STLCs]. The event was held from 11–15 December 2024, and took place in Santiago, Chile. Other partners included the University of Chile, the Chilean Academy of Sciences, and the Brazilian Academy of Sciences.



The **East and South-East Asia and the Pacific Regional Partner (TWAS-SAPREP)** with the Commission on Science and Technology for Sustainable Development in the South (COMSATS) of Pakistan and the CAS-TWAS Center of Excellence for Climate and Environment Sciences (ICCES) of China, co-hosted a panel discussion of scientific experts on science, technology, and innovation in the global South on 10 May 2024. Also, over 130 researchers and staff from Thai institutions attended an international training workshop held in Bangkok, Thailand on 6–9 August 2024. They held a discussion to introduce the roughly 50 early-career Thai scientists attending to Regional Partner and TYAN. TWAS-SAPREP events had many participants from under-represented LDCs such as Benin, Burkina Faso, the Democratic Republic of Congo, the Lao People's Democratic Republic, and Myanmar as well as some Small Island Developing States, such as Guinea-Bissau, Kiribati, Sao Tome and Principe, and Timor-Leste.

The **Arab Regional Partner (TWAS-AREP)** organized two events. The first was an online lecture on sea-level change along Mediterranean shores, held 3 November 2024 and open to the public, as a means to inform people on cascading natural disasters and the role of scientists in disaster preparedness. The second was a hybrid workshop on innovation and technology for sustainable development in the Arab Region, on 26–27 November 2024, for which 63% of the 41 participants were women.

● **TRIESTE, Italy**  
ICTP Campus

● **ALEXANDRIA, Egypt**  
Bibliotheca Alexandrina

● **BEIJING, China**  
Chinese Academy of Sciences

● **BANGALORE, India**  
Jawaharlal Nehru Centre  
for Advanced Scientific Research

● **PRETORIA, South Africa**  
Academy of Science of South Africa

The **Central and South Asia Regional Partner (TWAS-CASAREP)** participated in an online meeting on 17 April 2024 with science diplomacy experts. The partner, from 10–12 December 2024, organized a hybrid young-scientist meeting on climate action at the Jawaharlal Nehru Centre for Advanced Scientific Research, in Bangalore, India. 45 participants attended the meeting, including 14 women.

The **sub-Saharan Africa Regional Partner (TWAS-SAREP)**, participated in a webinar on science advice and food security with the Mauritius Academy of Science and Technology (MAST) on 28 May 2024, through TWAS Vice-President for Africa Olubukola Babalola, who delivered the opening remarks. The webinar was sponsored by a grant from the Network of African Science Academies and InterAcademy Partnership to enhance the expertise of MAST in offering science advice to policymakers. This introductory webinar was also aimed at strengthening individual and institutional competencies in giving science advice, taught by the Academy of Science of South Africa and the Global Young Academy.

# TWAS & ITALY

Since its inception in 1983, TWAS has had a close partnership with Italy. Through the Italian Ministry of Foreign Affairs and International Cooperation (MAECI), Italy provides core funding to the Academy, thus making its work to advance science in the developing world possible and facilitating an innovation-friendly policy ecosystem. Together, Italy and TWAS have helped developing countries build critical skills. TWAS also cooperates closely with the Academy's host region in Northeastern Italy, Friuli Venezia Giulia, as well as its host city, Trieste, which resides on the shore of the Adriatic Sea near the Italian border with Slovenia.

Here are highlights of the TWAS-Italy partnership in 2024:

TWAS organized a round table on 27 September at the **13<sup>th</sup> edition of Trieste Next**, a science festival held annually in Trieste, Italy. Titled 'Rebuilding scientific knowledge post-crisis', the event drew more than 80 people for its audience.

Panellists for the round table included Counsellor Alessandro Garbellini, head of the Office for Space, Scientific Multilateral Cooperation and Intellectual Property,



MAECI; Phyu Phyu Thin Zaw, lecturer in health leadership and management in crisis settings, at The University of Hong Kong; Peter McGrath, coordinator of the InterAcademy Partnership (IAP) and of the TWAS Science Diplomacy Unit; and Tonya Blowers, coordinator of the Organization for Women in Science for the Developing World (OWSD).

The panel addressed how to put displaced scientists' qualifications and experience at the service of both their host and home

▲ Computer scientist Fetenech Meskele Ganebo visited the University of Trieste from 15 January to 15 April 2024 under a TWAS-SISSA-Lincei Research Cooperation Visits Programme fellowship. [Photo: G. Ortolani/TWAS]

► From left, standing in front of TWAS booth: Dkawlma Tora of Togo and Suchitra Thapa of Nepal, both recipients of a TWAS-SISSA-Lincei Research Cooperation Visits Programme fellowship; Phyu Phyu Thin Zaw, lecturer in health leadership and management in crisis settings, The University of Hong Kong; and Alessandro Garbellini, head of the Office for Space, Scientific Multilateral Cooperation and Intellectual Property, Italian Ministry of Foreign Affairs and International Cooperation [MAECI]. [Photo: G. Ortolani/TWAS]



country, offering food for thought on an often-overlooked exodus of thousands of talented people.

Another round table called ‘Climate Change and Planetary Health’, was organised by TWAS at the annual international symposium **GeoAdriatico** of the Cinzia Vitale Onlus on 15 June.

GeoAdriatico centres around diplomacy, economics, science, and religion. The event received the patronage of the Italian Ministry of University and Research, the Senate of the Republic, the Chamber of Deputies, and MAECI.

On 23 October, the TWAS Public Information Unit taught **a class at the United World College of Adriatic** in Duino, Italy, teaching students there how science communication works and why it matters. Around 25 students from all over the world, including developing countries, attended.

The event was organised through SHARPER—SHaring Researchers’ Passion for Education and Rights—an Italian project supported by the European Commission for a science outreach event called **European Researchers’ Night** in 2024.

One of the Academy’s training programmes includes a partnership with Italian institutions—namely Accademia Nazionale dei Lincei and

the International School for Advanced Studies [SISSA]. The **TWAS-SISSA-Lincei Research Cooperation Visits Programme** supports early-career researchers in the UN-identified Least Developed Countries on projects that contribute to the Sustainable Development Goals.

It offers opportunities for training and collaboration in scientific institutions of the Friuli Venezia Giulia Scientific and Innovation System [Sis FVG] in Italy. It is supported by MAECI and the Italian Agency for Development Cooperation [AICS].

“Displaced scientists are key: if we can support them while they are displaced, then they can be among the best helpers for their country and the reconstruction process.”

**Alessandro Garbellini**, head of the Office for Space, Scientific Multilateral Cooperation and Intellectual Property, MAECI

▼ An attendee at the International Symposium GeoAdriatico. [Photo: G. Ortolani/TWAS]



# A STORY TO COMMUNICATE

To have an impact on global science and policy, TWAS must convey its ideas and work to an international audience that includes not just scientists, but policymakers, journalists, educators, students, and the general public.

For years, a key part of TWAS communications strategy has been the use of digital tools. The Academy's website, [twas.org](https://twas.org), features

a mix of articles and announcements about the Academy's activities. TWAS also increasingly made use of professionally crafted digital video interviews and photos to promote its programmes and events to an audience on **social media**.

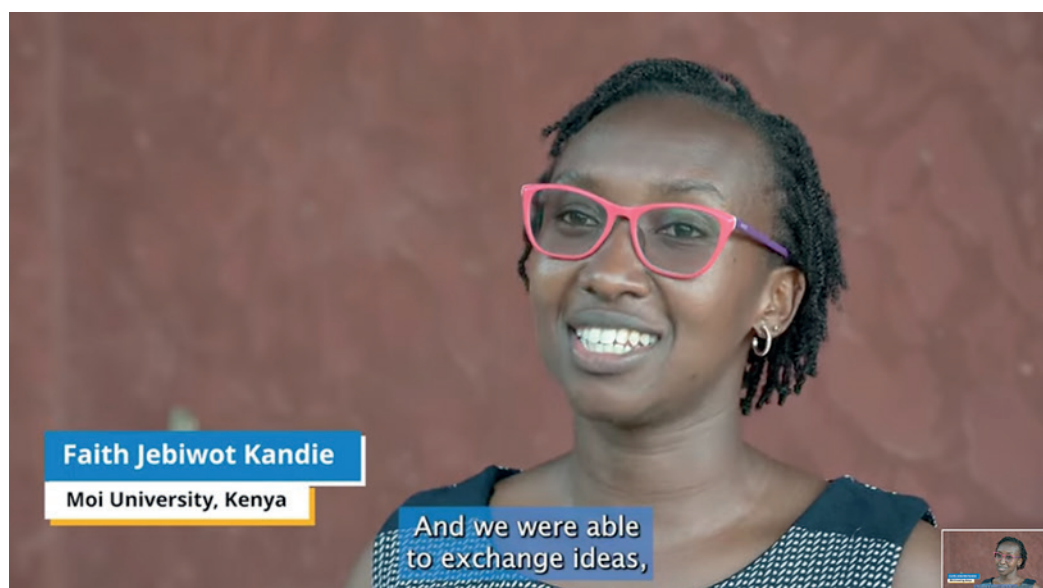
TWAS operates social media accounts on X, Facebook, LinkedIn, Flickr, and YouTube, as well as an electronic bulletin **TWAS Plus**.



◀ The banner from TWAS Opportunity Corner, the Academy's LinkedIn newsletter, from May 2024.



► A TWAS video, published on YouTube and social media, featuring Faith Kandie, a lecturer and water quality researcher at the School of Sciences and Aerospace Studies at Moi University, Kenya. She is an awardee of the Seed Grant for New African Principal Investigators (SG-NAPI) Programme, supported by the German Federal Ministry of Education and Research (BMBF), and in November 2024 she joined the TWAS Skill Building Workshop in Dakar, Senegal.



Anyone interested can subscribe to TWAS Plus free.

Consistent with recent years, TWAS experienced particular success in 2024 on LinkedIn, the professional social network, where ambitious scientists often follow the TWAS account for notices on its various opportunities. In January 2024, TWAS launched the LinkedIn newsletter TWAS Opportunity Corner, to better promote its opportunities on the platform.

The Academy also runs its own quarterly Newsletter, which communicates with TWAS membership and partners about its programmes and activities. In 2024, the **TWAS Newsletter**, which is digital, communicated with its audience direct to their email inboxes with a new and engaging format.

### Facebook



FOLLOWERS

**+ 24.1%**

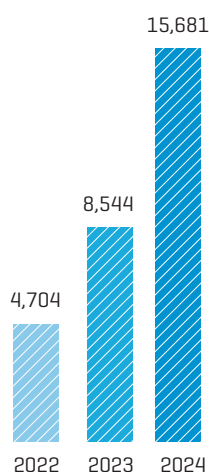
### X



FOLLOWERS

**+ 26.6%**

### LinkedIn



FOLLOWERS

**+ 233.4%**

From 1 January to 31 December each year.



TWAS was also an active member of the communication group of the Scientific and Innovation System of Friuli Venezia Giulia [SiS FVG].

In 2024, the TWAS Public Information Unit also produced the **2023 Annual Report**.

# FINANCIAL REPORT 2024

*Starting in 2020, it was decided that the financial report for each odd-numbered year would cover two years, to bring it in line with UNESCO budget cycle. This financial report includes only one year, because 2024 is the first year of the cycle, while budget figures show the full amount for the 2024-2025 period.*

*In 2024, TWAS received a total of \$8,446,308.23 in funding, including \$302 in individual contributions. TWAS is grateful for the generous contributions from its numerous supporters. Their support helps make the Academy's critical work in the developing world possible.*

## 2024 FINANCIAL REPORT (IN USD)

INCOME <sup>1</sup>	
Balance brought forward 01.01.2024	4,480,904.03
1) Ministry of Foreign Affairs and International Cooperation [MAECI] and other governmental entities, Italy	1,927,012.94
2) Swedish International Development Cooperation Agency [Sida], Sweden	1,325,748.58
3) Elsevier Foundation, Kingdom of the Netherlands	110,000.00
4) Academia Sinica, Taiwan, China	50,000.00
5) Ministry of Science, Technology and Innovation [MCTI], Brazil	36,455.49
6) American Association for the Advancement of Science, the United States of America	20,000.00
7) Lenovo Group Limited, China	13,910.00
8) Siwei Cheng Foundation, China	12,878.18
9) The Searle Company, Ltd., Pakistan	7,014.43
10) Quarraisha Abdool Karim, South Africa	7,000.00
11) Fayzah M.A. Al-Kharafi, Kuwait	6,000.00
12) Samira Omar Asem, Kuwait	6,000.00
13) National Agency for Research and Development [ANID], Chile	5,000.00
14) Other miscellaneous income	608.58
15) Transfer from endowment fund	5,350.00
16) Investment revenue	432,426.00
17) Exchange difference	
<b>TOTAL INCOME</b>	<b>8,446,308.23</b>

<sup>1</sup> All contributions are expressed in US dollars and have been converted using the UN official rate of exchange in effect at the time the contributions were received.

EXPENDITURE	App. Budget	Rev. Budget	Expenditure
<b>1) Awards</b>			
1.1) TWAS Science Awards	112,150.00	112,150.00	0.00
1.1.1) Award costs	100,000.00	100,000.00	0.00
1.1.2) Other costs	12,150.00	12,150.00	0.00
1.2) TWAS Awards	101,800.00	101,800.00	90,000.00
1.2.1) Award costs	90,000.00	90,000.00	90,000.00
1.2.2) Other costs	11,800.00	11,800.00	0.00
1.3) Fellows awards	83,300.00	83,300.00	40,086.59
1.3.1) Award costs	59,000.00	60,000.00	33,000.00
1.3.2) Other costs	24,300.00	23,300.00	7,086.59
1.4) TWAS-Siwei Cheng Award in Economic Sciences	12,149.00	12,149.00	10,000.00
1.5.1) Award costs	10,000.00	10,000.00	10,000.00
1.5.2) Other costs	2,149.00	2,149.00	0.00
<b>Sub-Total for [1]</b>	<b>309,399.00</b>	<b>309,399.00</b>	<b>140,086.59</b>
<b>2) Capacity Building in STLCs</b>			
2.1) Research Grants	2,246,043.00	2,246,043.00	1,063,610.45
2.1.1) Activities	1,836,000.00	1,836,000.00	886,291.62
2.1.2) Implementation costs	410,043.00	410,043.00	177,318.83
2.2) Regional Partners	0.00	0.00	0.00
2.3) Science diplomacy	25,000.00	25,000.00	20,000.82
2.4) Communication	2,000.00	2,000.00	1,000.00
2.5) Climate PhD scholarships and IPCC network	1,180,332.00	1,180,332.00	244,809.61
2.5.1) Activities	110,000.00	110,000.00	60,000.00
2.5.2) Implementation costs	151,332.00	151,332.00	71,742.06
2.5.3) Activities with IPCC	710,000.00	710,000.00	20,112.75
2.5.4) Additional implementation costs	209,000.00	209,000.00	92,954.80
2.6) Support to African scientists	1,490,000.00	1,490,000.00	1,225,512.72
2.6.1) Activities	1,300,000.00	1,300,000.00	1,196,972.00
2.6.2) Implementation costs	190,000.00	190,000.00	28,540.72
<b>Sub-Total for [2]</b>	<b>4,943,375.00</b>	<b>4,943,375.00</b>	<b>2,554,933.60</b>
<b>3) Fellowships, Associateships and Professorships</b>			
3.1) Fellowship programmes	470,000.00	470,000.00	173,771.34
3.2) Associateship, professorship and visiting programmes	410,000.00	410,000.00	231,059.21
<b>Sub-Total for [3]</b>	<b>880,000.00</b>	<b>880,000.00</b>	<b>404,830.55</b>
<b>4) Meetings</b>			
4.1) Council and General Meetings	180,000.00	180,000.00	0.00
4.2) Steering Committee and other official meetings	20,000.00	20,000.00	2,523.19
4.3) Local activities to promote science	10,000.00	10,000.00	3,151.92
4.4) Official visits to TWAS	20,000.00	20,000.00	5,904.37
<b>Sub-Total for [4]</b>	<b>230,000.00</b>	<b>230,000.00</b>	<b>11,579.48</b>
<b>5) Publications</b>			
5.1) Publications	40,000.00	40,000.00	3,811.97
5.2) Other costs	10,000.00	10,000.00	0.00
<b>Sub-Total for [5]</b>	<b>50,000.00</b>	<b>50,000.00</b>	<b>3,811.97</b>

Continue next page

EXPENDITURE	App. Budget	Rev. Budget	Expenditure
<b>6] Joint Projects</b>			
6.1] TWAS Regional Partners	125,000.00	125,000.00	95,515.31
6.2] Science Diplomacy Programme	40,000.00	40,000.00	18,113.51
6.3] Gender equity and climate	226,500.00	226,500.00	121,071.05
6.3.1] Fellowships and exchanges	154,500.00	154,500.00	90,935.60
6.3.2] Other costs	72,000.00	72,000.00	30,135.45
6.4] Collaboration with ICTP activities	30,000.00	30,000.00	908.73
6.5] Young Affiliates Network	100,000.00	100,000.00	31,789.00
6.5.1] Activities	80,000.00	80,000.00	31,789.00
6.5.2] Other costs	20,000.00	20,000.00	0.00
6.6] Coffee Research Conference	20,000.00	20,000.00	0.00
6.7] Solar Radiation Management	15,000.00	15,000.00	9,401.20
6.7.1] Activities	15,000.00	15,000.00	9,401.20
<b>Sub-Total for [6]</b>	<b>556,500.00</b>	<b>556,500.00</b>	<b>276,798.80</b>
<b>7] Operational Expenses</b>			
7.1] Staff costs	2,800,000.00	2,800,000.00	1,189,258.28
7.2] ICTP services	300,000.00	300,000.00	140,000.00
7.3] Communications	10,000.00	10,000.00	534.17
7.4] Strategic communications	70,000.00	70,000.00	8,816.85
7.5] Travels	36,000.00	36,000.00	7,178.79
7.6] Fundraising activities	20,000.00	20,000.00	0.00
7.7] Library, office and other supplies	20,000.00	20,000.00	5,424.01
7.8] Other general operating expenses	40,000.00	40,000.00	6,724.67
<b>Sub-Total for [7]</b>	<b>3,296,000.00</b>	<b>3,296,000.00</b>	<b>1,357,936.77</b>
<b>Management Costs</b>	<b>718,569.18</b>	<b>718,569.18</b>	<b>332,498.43</b>
<b>Total Expenditure</b>	<b>10,983,843.18</b>	<b>10,983,843.18</b>	<b>5,082,476.19</b>
Savings on prior years' obligations			612,023.81
Excess of income over expenditure			3,975,855.84
<b>Reserve Fund<sup>2</sup></b>			
Amount available at the beginning of period			1,361,766.43
Transfer from TWAS main account			0.00
Savings on end-of-service entitlements			87,939.84
<b>Reserve Fund balance end of period</b>			<b>1,449,706.27</b>

<sup>2</sup> The purpose of the Reserve Fund is to cover the end-of-service entitlements of TWAS staff.



**TWAS ENDOWMENT FUND 1994-2024<sup>3</sup> (IN USD)**

<b>ORGANIZATIONS</b>	<b>CONTRIBUTIONS RECEIVED</b>
1] Ministry of Sciences and Technology, China	2,200,000
2] Ministry of Science and Technology, Brazil	1,933,107
3] Department of Science and Technology, India	1,000,000
4] National Science and Technology Council, Mexico	739,155
5] Academia Sinica, Taiwan, China	608,915
6] Ministry of Science and Technology, Nigeria	586,779
7] Kuwait Foundation for the Advancement of Sciences (KFAS), Kuwait	500,000
8] Ministry of Research, Science and Technology, Islamic Republic of Iran	269,183
9] Mohammad Ahmad Hamdan, Jordan	171,000
10] Ministry of Science, Technology and Innovation, Malaysia	100,000
11] Ministry of Science and Technology, Pakistan	100,000
12] Secretariat of Science, Technology and Production Innovation, Argentina	55,000
13] Ministry of Modernization and Technology, Senegal	52,887
14] Administrative Department of Science, Technology and Innovation (COLCIENCIAS), Colombia	50,000
15] Ministry of Higher Education and Scientific Research, Egypt	50,000
16] Atomic Energy Commission of Syria, Syrian Arab Republic	50,000
17] Ministry of Finance and Economic Planning, the Sudan	49,850
18] Vietnam Centre for Science and Technology Evaluation, Viet Nam	20,000
19] National Academy of Science and Technology, the Philippines	11,957
20] Ministry of Science and Technology, Bangladesh	10,000
21] Ministry of Education, Science and Technology, the United Republic of Tanzania	4,529
22] Shui-Chin Lee Foundation for Basic Science, Taiwan, China	4,000
23] Swedish Council for Higher Education, Sweden	1,302
24] Office of the Prime Minister, Jamaica	1,000
25] Venezuelan Institute for Scientific Research (IVIC), Venezuela	300
<b>Subtotal</b>	<b>8,568,964</b>
<i>Plus other contributions<sup>4</sup></i>	195,345
<i>Plus interest earned</i>	8,874,930
<i>Net transfer to TWAS Fund (2011-2024)</i>	-1,631,118
<b>TOTAL</b>	<b>16,008,121</b>

<sup>3</sup> The aim of establishing this endowment fund was to build a capital of \$25 million to cover the secretariat costs and basic programmes.

<sup>4</sup> This amount comprises donations from TWAS Fellows, individuals and other organizations' contributions [see separate list, next page].

# CONTRIBUTIONS OVER \$1,000 TO THE ENDOWMENT FUND FROM TWAS FELLOWS, YOUNG AFFILIATES, AND OTHER MISCELLANEOUS (1994-2024)

Wook Hyun Kwon, Republic of Korea	30,000	Jih Ru Hwu, Taiwan, China	1,030
Bai Chunli, China	21,770	ANSTS, Senegal	1,029
M.H.A. Hassan, the Sudan	13,104	A. Kornhauser, Slovenia	1,000
J. Palis, Brazil	10,079	A.O. Kuku, Nigeria	1,000
Science Initiative Group, the United States of America	6,250	CAPRISA, South Africa	1,000
J.I. Vargas, Brazil	5,287	E.M. Essien, Nigeria	1,000
S.S. Katiyar, India	4,100	G.S. Khush, the Philippines	1,000
A.V. Rama Rao, India	3,000	G.T. Prance, the United Kingdom of Great Britain and Northern Ireland	1,000
A. Hamoui, Syria	2,500	H.E. Varmus, the United States of America	1,000
M. Peimbert, Mexico	2,500	I. Eltayeb, Oman	1,000
Lu Yong Xiang, China	2,300	I. Serageldin, Egypt	1,000
P. McGrath, the United Kingdom of Great Britain and Northern Ireland	2,046	J. Huang, China	1,000
M. Iqbal Parker, South Africa	2,000	J.L. Moran Lopez, Mexico	1,000
K. Namsrai, Mongolia	1,858	K.E. Mshigeni, the United Republic of Tanzania	1,000
Phillip A. Griffiths, the United States of America	1,750	Lee Wu Yan-Hwa, Taiwan, China	1,000
A. Paulraj, the United States of America	1,736	M. Klein, the United States of America	1,000
Harald Fuchs, Germany	1,703	P. Littlewood, the United Kingdom of Great Britain and Northern Ireland	1,000
B.N. Upreti, Nepal	1,644	Pei Gang, China	1,000
Fuchu He, China	1,620	R. Murenzi, the United States of America/Rwanda (KIST)	1,000
Anil Jain, the United States of America	1,441	S.Q. Mehdi, Pakistan	1,000
R. Miledi, the United States of America	1,320	Sang-Dai Park, Republic of Korea	1,000
L.N. Johnson, the United Kingdom of Great Britain and Northern Ireland	1,281	Wong Henry Nai Ching, China	1,000
J. Garidkhuu, Mongolia	1,221	Y. Sobouti, Islamic Republic of Iran	1,000
F. El-Baz, Egypt	1,200	Y. Yuthavong, Thailand	1,000
C.N.R. Rao, India	1,131	Yam Vivian Wing-Wah, China	1,000
E.W. Thulstrup, Denmark	1,062	Combined donations under 1,000	45,338
A. Badran, Jordan	1,045	<b>TOTAL</b>	<b>195,345</b>

Every donation, large or small, directly supports the advancement of science, engineering and technology in developing nations and demonstrates commitment to the Academy's vital mission. To make a donation, please visit [www.twas.org/support-twas](http://www.twas.org/support-twas)

# NEW TWAS FELLOWS ELECTED IN 2024

## Agriculture, Nutrition and Food Systems Sciences

- BANSAL, Kailash Chander [India]
- DELLAGOSTIN, Odir Antonio [Brazil]
- HE, Zuhua [China]
- JOSHI, Bal Krishna [Nepal]
- SAMBANTHAMURTHI, Ravigadevi [Malaysia]

## Biological Sciences

- AHMAD, Mushtaq [Pakistan]
- AZIZ, Rami Karam [Egypt]
- CARLINI, Celia Regina [Brazil]
- CHAKRAVORTY, Dipshikha [India]
- DAJANI, Rana [Jordan]
- GOODMAN, Steven Michael [Madagascar]
- HOSSAIN, M. Anwar [Bangladesh]
- NATHAN, Sheila [Malaysia]
- RAHMAN, Raja Noor Zaliha [Malaysia]
- SUN, Hang [China]
- TURDIKULOVA, Shahlo [Uzbekistan]

## Medical and Health Sciences

- AGRAWAL, Anurag [India]
- ALI, Liaquat [Bangladesh]
- MORSHED, Muhammad Golam [Canada]
- NAHEED, Aliya [Bangladesh]
- NGUYEN, The Hoang [Viet Nam]
- NTUSI, Ntobeko Ayanda Bubele [South Africa]
- OWOLABI, Mayowa Ojo [Nigeria]
- QIN, Chuan [China]
- SOARES, Milena B. P. [Brazil]
- ZÜHLKE, Liesl Johanna [South Africa]

## Chemical Sciences

- ABDUL RAHMAN, Mohd Basyaruddin [Malaysia]
- BESADA PÉREZ, Vladimir Armando [Cuba]
- BOLDRIN ZANONI, Maria Valnice [Brazil]
- CHEN, Chunying [China]
- FAN, Chunhai [China]
- JAGESAR, Raymond Compton [Guyana]
- MAJI, Tapas Kumar [India]
- NGUYEN, Thi Thanh Mai [Viet Nam]
- PEREIRA NUNES, Suzana [Saudi Arabia]
- SHAH, Muhammad Raza [Pakistan]

## Engineering

- AHMAD, Abdul Latif [Malaysia]
- CHAUDHURI, Subhasis [India]
- HASNA, Mazen [Qatar]
- KHAKHAR, Devang [India]
- LEWIS, Alison Emslie [South Africa]
- LI, Hui [China]
- OBAYYA, Salah [Egypt]
- TAN, Raymond R. [the Philippines]

## Quantum Information and Computational Sciences

- BELLO PÉREZ, Rafael [Cuba]
- BELOUCHRANI, Adel [Algeria]
- ELEUCH, Hichem [the United Arab Emirates]
- FAN, Maohong [the United States of America]
- GHOGHO, Mounir [Morocco]
- KARIMPOUR, Vahid [Islamic Republic of Iran]
- TENÓRIO DE CARVALHO, Francisco de Assis [Brazil]

## Earth, Climate and Environmental Sciences

- ARIS, Ahmad Zaharin [Malaysia]
- DINGWELL, Donald Bruce [Germany]
- KHAN, Sardar [Pakistan]
- SALDIVA, Paulo [Brazil]
- TRINDADE, Ricardo Ivan Ferreira [Brazil]
- VENKATARAMAN, Chandra [India]
- ZHU, Tong [China]

## Mathematical Sciences

- EZZINBI, Khalil [Morocco]
- RUAS, Maria Aparecida Soares [Brazil]
- TSCHINKEL, Yuri [the United States of America]
- WIENHARD, Anna [Germany]

## Physics, Astronomy and Space Sciences

- DA SILVA, Antonio José Roque [Brazil]
- DRISSI, Lalla Btissam [Morocco]
- JIA, Jinfeng [China]
- JIN, Kuijuan [China]
- KNOBEL, Marcelo [Brazil]
- KULKARNI, Giridhar [India]
- YUSUF, Seikh Mohammad [India]

## Social and Economic Sciences

- CHEN, Sylvia Xiaohua [China]
- IBRAHIM, Rahinah [Malaysia]
- MICHEL LOPEZ, Marcos Rodolfo [Plurinational State of Bolivia]
- MULUGETTA, Yacob [the United Kingdom of Great Britain and Northern Ireland]
- WINKLER, Harald [South Africa]

# TWAS YOUNG AFFILIATES SELECTED IN 2024

## **Sub-Saharan Africa**

- BAPOLISI, Wyvine Ansima [Democratic Republic of the Congo]
- HLASHWAYO, Delfina Fernandes [Mozambique]
- JEENAYE MAMODE KHAN, Maleika [Mauritius]
- KOLOKO, Brice Landry [Cameroon]
- NDEJJO, Rawlance [Uganda]

## **Arab Region**

- GHADIEH, Hilda E. [Lebanon]
- IBRAHIM, Reham Said Ibrahim [Egypt]
- MAETOUQ, Abdelhamid Hussein Farag [Libya]
- MATAR, Abdulkareem Mohammed [Yemen]

## **Latin America and Caribbean**

- CAGNONI, Alejandro Javier [Argentina]
- CRUZ TORRES, Melissa Maria [Honduras]
- FERNANDEZ ESPINOZA, Carla Elois [Plurinational State of Bolivia]
- GOMES LIMA, Yuri [Brazil]
- MAZARIEGOS POSADAS, Monica Elizabeth [Guatemala]

## **East and South-East Asia and Pacific**

- MUSTAFA, Zainun Binti [Malaysia]
- MUHAMAD, Nurfashareena Binti [Malaysia]
- NGUYEN, Thao Thi Phuong [Viet Nam]
- WU, Chenglai [China]
- XUE, Wenchao [China]

## **Central and South Asia**

- HAQUE, Alifa Binta [Bangladesh]
- HOSEINI MONJEZI, Najmeh [Islamic Republic of Iran]
- KANKANAMGE, Samamalee Upekshi [Sri Lanka]
- MATTE, H S S Ramakrishna [India]
- NEMATOV, Dilshod [Tajikistan]



# AWARDS CONFERRED IN 2024

## **TWAS Medal**

- DAVIDOVICH, Luiz [Brazil]

## **TWAS-Abdool Karim Award in Biological Sciences**

- LOKO, Yèyinou Laura Estelle [Benin]

## **TWAS-Fayzah M. Al Kharafi Award**

- SUBRINA, Samia [Bangladesh]

## **TWAS-Samira Omar Innovation for Sustainability Award**

- PRASAI JOSHI, Tista [Nepal]

## **TWAS-Atta-ur-Rahman Award**

- DAHAL, Bipeen [Nepal]

## **TWAS-Mohammad A. Hamdan Award**

- YENGUI, Ihsen Yengui [Tunisia]

## **TWAS-Siwei Cheng Award in Economic Sciences for 2026 [announced in 2024]**

- LIN, Chen [China]
- DEBELLO, Moti Jaleta [Ethiopia]

## **TWAS-CAS Young Scientists Award for Frontier Science in Life Sciences**

- FU Qiaomei [China]

## **TWAS Awards for 2026 [announced in 2024]**

- HUANG, Sanwen [China], agriculture, nutrition, food systems sciences
- SALEM, Abdelfattah [Mexico and Egypt], agriculture, nutrition, food systems sciences
- LIU, Mo-Fang [China], biological sciences
- RODRÍGUEZ, Jon Paul [Venezuela], biological sciences
- ZENG, Jie [China], chemical sciences
- VITHANAGE, Meththika Suharshini [Sri Lanka], Earth, climate and environmental sciences
- CHAKRABORTY, Suman [India], engineering and computer sciences
- SOCCOL, Carlos Ricardo [Brazil], engineering and computer sciences
- BURSZTYN, Henrique [Brazil], mathematical sciences
- FU, Jixiang [China], mathematical sciences
- ATEEQ, Bushra [India], medical and health sciences
- SABINO, Ester [Brazil], medical and health sciences
- DING, Hong [China], physics, astronomy and space sciences
- OGALE, Satishchandra [India], physics, astronomy and space sciences
- FANG, Chuanglin [China], social sciences
- SUNDARAM, Jomo Kwame [Malaysia], social sciences

## **OWSD-Elsevier Foundation Awards for Early-Career Women Scientists in the Developing World**

- ALEXANDER, Augustina Clara [the United Republic of Tanzania]
- CHOUDHURY, Tasrina Rabia [Bangladesh]
- RIVERA PEÑALVA, Lidia Antonella [Honduras]
- WIDANA GAMAGE, Shirani Manel Kumari [Sri Lanka]
- UKUNDIMANA, Zubeda [Uganda]

# TWAS SECRETARIAT

## Executive Director's Office

*Executive Director ad interim:* Atish Dabholkar  
[until December]

*Executive Director:* Marcelo Knobel  
[until December]

*Executive Consultant:* Seifallah Randjbar-Daemi  
[until December]

*Special Advisor:* Giusto Sciarabba

*Senior Assistant:* Sandra Ravalico  
Vanessa Varnier

## Programmes and Activities

*Programme Coordinator:* Massimo Paoli

Cristina Ballaben Simoes

Anna Maria Bolčič [from May]

Sara Dalafi

Giorgia Danelon

Giulia Gennari

Memoth Kanniakonil

Elena Lorenzon [from January until December]

Antonella Mastrolia

Fabrizia Niscio

Payal Patel

Francesca Persico

## Public Information Unit

*Public Information Officer:* Giovanni Ortolani

Francesca Pettoello

Cristina Serra

Sean Treacy

## Finance and Administration

*Senior Adviser:* Nutan Wozencroft [from January]

Chiara Cesareo

Antonino Coppola

Havir Gergolet [until April]

Erica Hrvatic [from November]

Diana Solitro

Paola Vespa

## Organization for Women in Science for the Developing World (OWSD)

*Coordinator:* Tonya Blowers

Tanja Bole [until December]

Sena Galazzi [until June]

Erika Hrvatic [until October]

Erin Johnson

Marina Juricev

Zabeeh Ullah Sahil

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## InterAcademy Partnership (IAP)

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Sabina Caris

Lucia Fanicchi

Sofia Nitti

Sheila Perosa [from November]

For specific contact details, see:

[www.twas.org/contacts](http://www.twas.org/contacts)

## TWAS ANNUAL REPORT 2024

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