

# The AAS annual report 2017



Towards achieving  
The AAS mandates







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Cover Photo:

From left: The AAS Fellow Baldwin Torto; Rosemary Sang, The AAS Fellow and Lucy Irungu, The AAS Affiliate

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**AASciences**

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## About The AAS

The AAS, a pan African organisation headquartered in Nairobi, Kenya, aims to drive sustainable development in Africa through science, technology and innovation. Its mandate is to pursue excellence by recognising scholars and achievers; provide advisory and think tank functions for shaping the continent's strategies and policies; and implement key science, technology and innovation (STI) programmes that impact developmental challenges. The AAS together with the New Partnership for Africa's Development Planning and Coordinating Agency (NEPAD Agency) to created the Alliance for Accelerating Excellence in Science in Africa (AESAs), an Africa-led, Africa-centred, and Africa-specific platform for accelerating scientific excellence, leadership and innovation and serving the goal for implementing STI programmes.

The AAS recognises excellence through the election of AAS Fellows and Affiliates. The AAS also awards the Obasanjo Prize for Scientific Discovery and Technological Innovation every two years to an outstanding scientist who contributes to the development of the continent.

The AAS Fellows and Affiliates are distinguished researchers who represent the most talented and promising men and women in and outside the continent, from 59 countries across the globe. Fellows are Africans who may live in or outside the continent and working on science in Africa are elected by previously elected The AAS Fellows based on achievements that include their publication record, innovations, leadership roles and contribution to policy.

Affiliates are promising early career scientists likely to become world class research leaders. Currently, The AAS has 62 Affiliates, who are from countries that include Benin, Cameroon, Ghana, Kenya, Nigeria, Tanzania, South Africa and Zimbabwe.

Fellows form a community of scientists, which is poised to engage with governments and policy makers to enable wise investment in the future of the continent. The Academy, through its think tank functions, encompasses policy and advocacy, to identify, articulate, and evaluate timely science, technology and innovation (STI) policy issues to create a policymaking framework. This initiative also provides a robust forum for the exchange of ideas and information among key stakeholders in order to guide and inform initiatives to positively impact STI investment throughout Africa. The current strategic plan of The AAS (2013-2018) identifies six science, technology and innovation areas of focus, namely: climate change; health and wellbeing; STEM (Science, Technology, Engineering and Mathematics); water and sanitation; food security and nutritional wellbeing and sustainable energy.

The programmatic arm of the Academy, AESA, provides the funding and agenda setting to support the best minds in Africa. It cultivates productive research hubs across the continent, implementing initiatives that produce robust and relevant data, and innovations that have the potential to impact health and development on the continent and globally.



## Vision

Driving scientific and technological development in Africa

## Three mandates

1

Recognising excellence

2

Implementing science programmes

3

Delivering think tank functions

## Programme areas



Health and wellbeing



Sustainable energy



STEM programmes



Food security, nutrition and wellbeing



Climate change












Water and sanitation

## Governance

The AAS is governed by:

- A General Assembly that consists of The AAS Fellows and is the highest authority of the Academy, which determines its general policy and has an oversight of the Governing Council
- A Governing Council, that consists of 15 officers elected by the General Assembly which meets twice a year to create and review the Academy's programmes
- An Audit and Risk Committee, which is a seven-member committee comprising independent non-executive members, The AAS Treasurer and Executive Director, who review the Academy's financial accounts
- The Secretariat based in Nairobi, under the leadership of the Executive Director.

### AAS Governing Council (GC) members

	Name	Position in the GC	Nationality
1	Felix Dapare Dakora	President	
2	Barthelemy Nyasse	Secretary General	
3	Dominic Makawiti	Treasurer (deceased March 2018)	
4	Mahmoud Abdel-Aty	V/ President, N. Africa	
5	Elly Sabiiti	V/ President, E. Africa	
6	Vincent P. K. Titanji	V/ President, C. Africa	
7	Robert T. Guiguemdé	V/ President, W. Africa	
8	Boitumelo Kgarebe	V/President, S. Africa	
9	Theonest K. Mutabingwa	Reg/Rep, E. Africa	
10	Richard T. Awuah	Reg/Rep, W. Africa	
11	Akissa Bahri	Reg/Rep, N. Africa	
12	Colleen Masimirembwa	Reg/Rep, S. Africa	
13	Juma Shabani	Reg/Rep Central Africa	
14	Aderemi Kuku	Immediate Past President	
15	Nelson Torto	Executive Director (ex-officio member)	

# Transforming The AAS



*Felix Dapare Dakora, PhD, The AAS President*

## Overview

The AAS experienced a change in leadership, added new programmes and laid the foundation for a new strategic plan in 2017.

## New leadership

A new Governing Council, to which I was elected President, was inaugurated. We bade farewell to Berhanu Abegaz who had been Executive Director for two terms since 2011 and welcomed Botswana-born Nelson Torto to succeed him. The new leadership is bringing renewed energy to take The AAS to the next level of growth.

## A new strategic direction

The leadership's first step was to lay the foundation to develop a new strategic plan, a process which was led by the secretariat. The current plan has been in existence since 2013 and has been instrumental in driving the growth at The AAS. It set a target of increasing the

number of Fellows to 600 by 2018, 15 % of whom should be women. The plan also proposed the development of an Affiliates programme to recognise and mentor eminent early career professionals. It envisaged building partnerships to attract additional funding for the Academy's activities, particularly creating new programmes to drive scientific and technological development on the continent.

## Propelling growth

I am proud to say The AAS has made significant progress in achieving these objectives. While the number of our Fellows falls short of the target with current number standing at 396, we feel it still represents significant growth that we hope to amplify in years to come. The AAS is proud of the deliberate efforts made to recruit more women who currently represent 13 % of our Fellows and we envisage this number will grow in coming years as we magnify our efforts to attract more women into The Academy. Growing the number of women scientists affiliated to The Academy will provide us with a resource to inspire younger women scientists and a proliferation of ideas and experiences that can be used to tailor policies and The AAS's advocacy work to promoting gender equity and equality not just across its activities but across the continent as well.

The AAS is proud that the model to attract more women Fellows has been replicated across its science, technology and innovation programmes, many of which are deliberate in recruiting more women as master's, PhD and postdoctoral trainees. CIRCLE and DELTAS Africa, for example, are two of the programmes that have achieved a nearly 50:50 gender parity.



*The 2017 DELTAS Africa Annual Grantees Meeting*

Coincidentally, the number of programmes also grew in 2017 to eight with the introduction of the AESA-RISE Fellowship programme for postdoctoral training and the Africa Science Desk that builds the capacity of African science journalists.

### **Growing Africa-centred and equitable partnerships**

Indeed, the growth is testimony to the confidence that The AAS enjoys with international partners. The AAS's new strategic direction is expanding this confidence to African governments and policymakers, with the hope of translating it to increased funding for The AAS and science on the continent. The Coalition for African Research and Innovation (CARI), which is a collaborative initiative with partners is envisaged to mobilise for more support from African governments and philanthropists.

In addition to the Academy contributing to increasing the population and quality of African scientists, we hope for a shift in strategic direction to proactively ensure that the research produced by scientists affiliated to The AAS transforms lives of

Africa's people. This means increased communication of and advocacy activities to ensure that this research and activities of The AAS reach the end user, namely governments who can fund and use this evidence in policymaking, ordinary citizens to increase awareness of the impact of science and the private sector who can potentially fund or commercialise the research output.

The future is certainly bright for The AAS and African STI.

I would be amiss to not acknowledge the hard work of the secretariat in realising and achieving these goals. We hope for greater progress in 2018.

I want to end off with a reminder of the upcoming General Assembly, which is a gathering of Fellows and Affiliates. In December 2018 the GA will be held in Pretoria, South Africa. It's an opportunity for Fellows to influence the direction of the Academy and African STI and we hope that this community will take an opportunity to attend.



# The Power of Partnerships



*Nelson Torto, PhD, The AAS Executive Director*

I am writing this message on the first year of my three-year term at The AAS. I am immensely proud to be leading a transformative organisation that continues its trajectory of growth, gaining new Fellows, Affiliates and programmes and upgrading its headquarters in Nairobi, Kenya, in 2017.

## Transformative partnerships

This growth is attributable to the partnerships The AAS has built over the years, particularly in the last three years. The creation of the Alliance for Accelerating Excellence in Science in Africa (AESA) in 2015 meant renewed partnerships with Wellcome, the UK Department for International Development (DFID) and the Bill & Melinda Gates Foundation (BMGF).

AESA has been a vehicle through which the Academy demonstrates the power of partnerships to transform African science. Investment in building the capacity of African science can produce not just useful scientific findings, but can also

create a skilled scientific workforce that has a lasting impact on the wellbeing of Africa and her people.

The AAS has steadily grown its \$150 million investment over three years to more than double the number of programmes it funds from three in 2015 to eight in 2017. This has been possible because of the productivity of initial investments, increasing the confidence of international funders and governments. Programmes support research across the sciences, including in climate change, genomics, stem cell science, postdoctoral training and science journalism.

Initial investments from Wellcome, DFID and the BMGF have attracted additional funding from current and first-time partners, including the Carnegie Corporation of New York and the Medical Research Council of South Africa, to create new programmes and expand the remit of existing ones (read more in a proceeding chapter on spurring science programmes).

The AAS programmes have demonstrated in the short time since their establishment that sustained investment in African science holds the potential for strong and long-term impact on the health and wellbeing of the people of Africa. To sustain this investment, we are advocating for more funding from African governments and reached out to a few during the course of 2017. We are continuing these engagements in 2018 to ensure that governments translate their commitments to science into actual funding.





*Participants at the Grand Challenges Africa Grant Proposal Writing Bootcamp in Burkina Faso*

### **Promoting intra-Africa collaboration and increasing scientific productivity**

The AAS's programmes reach countries across every linguistic region of Africa where transformative research is being conducted to improve the lives of all Africans and facilitate intra-Africa collaboration to promote knowledge sharing to benefit peoples across the continent.

The AAS-funded researchers will now have the opportunity to publish their research on AAS Open Research, an open access publishing platform enabling researchers to share results quickly, without barriers and with the benefit of transparent peer review.

### **Coordinating Affiliates**

Since the creation of The AAS Affiliates programme in 2015, 62 Affiliates have been selected. These promising early career scientists are receiving support

from The AAS to develop their careers. In 2018, we plan an inaugural gathering and to deliver a better coordinated programme to ensure sustained benefits for the Affiliates and The AAS. Africa's young people are a demographic dividend that needs to be exploited for the benefit of the continent. An investment in the Affiliates and indeed in training master's, PhD and postdocs is The AAS's contribution to ensure young scientists are equipped to develop their ideas into transformative products. The ultimate aim is to help to reap this dividend.

### **Improving our campus**

Last but not certainly least, in 2017 we began a project to revamp our offices to provide a friendlier working environment for our staff and visitors.

Much of the progress made to date will be amplified in the implementation of the new strategy.

# The AAS Impact Across Africa

By the numbers

## Fellows and Affiliates



396 Fellows



59 Countries represented



52 Female fellows



62 Affiliates



04 Winners of the Obasanjo Science Prize since 2011

## Total Investments: Programmes

The AAS's **\$150 M** investments across its **8** programmes have supported the recruitment and funding of:

**992** master's, PhD and postdoctoral Fellows from **11** DELTAS Africa-funded sites.

**10** stories published through the Africa Science Desk in its first **4** months

**8** bold innovators funded through Grand Challenges Africa to tackle maternal, neonatal and child health challenges.

**100** Fellows recruited through the Climate Impact Research Capacity and Leadership Enhancement (CIRCLE) Fellowship. CIRCLE has enabled early career researchers to publish close to **100** papers in peer reviewed journals and attend **200** conferences and workshops for training and to present their work.

**\$11 million** for Human Hereditary and Health in Africa grants in H3Africa Phase II.

## Plans for 2018

New AAS strategic plan

**4** new programmes planned for 2018:

2 to promote collaboration among Indians and Africans (Africa-India Mobility Fund and the Science and Language Mobility Scheme Africa

2 to provide postdoctoral training

# Governance and Leadership

## Governing Council elections

On May 18, Fellows were invited, through an online voting system, to participate in the election of members of The AAS Governing Council (GC) whose term will run from 2017-2020. About 50% of the 317 Fellows and Associate Fellows eligible to vote, cast their online ballot. By comparison, in the 2014 GC elections only 67 Fellows and Associate Fellows voted.



The AAS elected a new Governing Council led by Prof Felix Dapare Dakora, a distinguished Plant and Soil Biotechnology Professor at the

Tshwane University of Technology in Pretoria, South Africa. He is a recipient of the UNESCO-Equatorial Guinea International Prize for Research in the Life Sciences, a Fellow of the Academy of Science of South Africa and recipient of the African Union Kwame Nkrumah Science Excellence Award (2016 Edition).

The GC brings a wealth of experience and its members are from Cameroon, Burkina Faso, Egypt, Ghana, Kenya, Tanzania, Tunisia, Uganda, the Republic of the Congo, the Republic of South Africa, and Zimbabwe.

See page 9 for the list of the 15 members of the Governing council from 2017-2020

## Appointment of new Executive Director

The AAS GC appointed Prof Nelson Torto, a prolific analytical chemist, as the Executive Director of the Academy, effective from 14 August 2017.



Torto, who was appointed after a continental search process, succeeded Prof Berhanu Abegaz whose two-term contract ended in March 2017. Programmes

Director Tom Kariuki, was Interim Executive Director before Torto was selected.

Until his appointment at The AAS, Prof Torto was the founding Chief Executive Officer of the Botswana Institute for Technology Research and Innovation. He holds a PhD in analytical chemistry from Lund University in Sweden. He started his career as a method development chemist at the BCL Mine in Selebi Phikwe. He joined the University of Botswana's Chemistry Department as a staff development fellow in 1993 and rose to the rank of Associate Professor. In 2008, Prof Torto joined Rhodes University as a Professor of analytical chemistry and subsequently led the Chemistry Department for three years.

Prof Torto is a renowned researcher who has received various awards, given invited plenary lectures at international conferences, published more than 130 papers, graduated 19 PhDs and has several registered patents.

## Charting a New Vision for The AAS

The current AAS strategy expires in 2018. The Executive Director led a planning effort to develop a new strategic plan to run from 2018 to 2022.

The development process involved the AAS Governing Council, staff and an invitation for input from Fellows and partners. It has included a review of relevant AAS documents, such as the

current plan, policies and programme documents and internal and external assessments. The key tool used in this process was the Wall of Greatness, that incorporated an in-depth review of the The AAS vision, mission, core values and strategic objectives. The strategy will be presented to the GC and The 11<sup>th</sup> AAS Assembly.

## Creating Strategic Partnerships

The AAS seeks to foster the long-term sustainable funding and development of global health research leadership and scientific excellence in Africa. To this end, the Academy actively pursues partnerships with interested reputable funding organisations. Partnerships advanced or created in the year included those between The AAS and:

- The Bill & Melinda Gates Foundation, Wellcome and the US National Institutes of Health (NIH) to establish the Coalition for African Research and Innovation (CARI), a platform, led by Africans, to place research and innovation at the forefront of Africa's drive to achieve the SDGs by accelerating a wide range of scientific breakthroughs in Africa that help more Africans lead better lives sooner
- GlaxoSmithKline, culminating in the signing of a memorandum of understanding to collaborate in funding genomics research
- The South African Medical Research Council, to support innovative health technologies (see more on page 38)
- The International Agency for Research in Cancer, with which the Academy is engaged in discussions on mutual areas of interest
- The Council for the Lindau Nobel Laureate Meetings, which led to the signing of an MoU to support the participation of early career African at the Lindau Nobel Laureate Meetings (see more on page 55)
- The Stellenbosch Institute for Advanced Study (STIAS), the MRC Developmental Pathways for Health Research Unit at the University of the Witwatersrand, the DOHaD African Chapter and other partners to organise a Summer School on Developmental Origins of Health and Disease Translational Science: from Cell to Society. It was hosted by STIAS (see more on page 45)
- The International AIDS Vaccine



Initiative (IAVI) where the parties have agreed to collaborate to improve the understanding of the challenges and opportunities faced by women in science, technology, engineering and mathematics (STEM)

- Chatham House and Sandia National Laboratories, which convened a meeting of key players in African countries to discuss how to build capacity for urban preparedness and resilience in the context of biological threats – including bioweapons use, natural outbreaks and biohazards – in high-risk African cities, such as: Abuja and Lagos (Nigeria), Accra (Ghana) and Johannesburg and Cape Town (South Africa)
- The Wellcome Trust/DBT India Alliance, Wellcome and Institut

Pasteur to establish two mobility grants to encourage collaboration among Africans and Indians in 2018.

- The Bill & Melinda Gates Foundation and the US NIH to establish a programme to provide postdoctoral fellowships in 2018
- China's Tsinghua University, to forge a strategic collaboration promoting ecological protection and human health. Chen Xu, Chairperson of Tsinghua University, visited The AAS headquarters in Nairobi in September to discuss the collaboration
- The African Innovation Foundation: the parties signed a MOU to create more value and enhance cooperation, interaction, and knowledge sharing in Science, Technology and Innovation (STI) in Africa (see more on page 60).

## New Partners



# Recognising Excellence

Contributing to its mandate of recognising excellence, The AAS undertook the following activities in 2017:

## The AAS Fellows

The Academy elected 32 Fellows in 2017 bringing the total number of individuals elected to The AAS Fellowship to 396.

The percentage of women Fellows now stands at 13%. The AAS continues to pursue and hopes to surpass the target of 15% that is set out in the current Strategic Plan.

## Fellows Elected in 2017 (32)



**Paco Sereme**  
Burkina Faso  
Agricultural sciences  
Research Director,  
National Agricultural  
Research Institute of  
Burkina Faso



**Ntoumi Francine**  
Congo, Brazzaville  
Biosciences  
Director, Foundation  
Congolaise pour la  
Recherche Médicale,  
Brazzaville



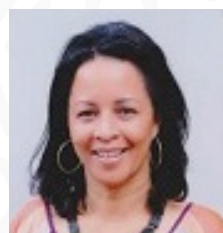
**Asfawossen  
Asrat Kassaye**  
Ethiopia  
Earth sciences  
Secretary, Governing Board,  
African Network of Earth  
Sciences Institutions.



**George Fu Gao**  
China  
Biosciences  
Director, Chinese Centre  
for Disease Control and  
Prevention  
(China CDC)



**Khaled Elleithy**  
Egypt  
Computer sciences  
Associate Vice President,  
Graduate Studies, University  
Of Bridgeport



**Gebrekirstos Aster  
Afwork**  
Ethiopia  
Agroforestry sciences  
Scientist, World Agroforestry  
Centre (ICRAF)



**Shiferaw Berhanu**  
Ethiopia  
Mathematical sciences  
Professor of Mathematics,  
Temple University, USA



**Kwadwo Ansa Koram**  
Ghana  
Medical  
and health sciences  
Deputy Director, West  
African Centre for Cell  
Biology of Infectious  
Pathogen (WACCBIP),  
University of Ghana



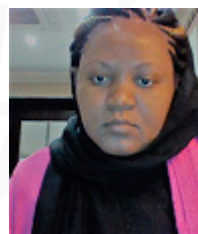
**Federico Rosei**  
Italy  
Chemical sciences  
Director, INRS Centre  
for Energy, Materials  
and Telecommunication,  
Varennes, Canada



**Yacob Mulugetta**  
Ethiopia  
Development policy and  
energy sciences  
Professor, University College  
London (UCL)



**Nicholas Biekepe**  
Ghana  
Economics and Mathematical  
Sciences  
President at Africagrowth  
Institute



**Amina Abubakar**  
Kenya  
Developmental and health  
psychology sciences  
Research Fellow, KEMRI-  
Wellcome Trust Research  
Programme-Kilifi



**Kojo Mensa-  
Wilmot**  
Ghana  
Biosciences  
Head, Cell Biology,  
University of Georgia



**Paul-Kingsley Buah-  
Bassuah**  
Ghana  
Physical sciences  
Ethics Review Board ,  
University of Cape Coast



**Mary Abukutsa-Onyango**  
Kenya  
Agricultural sciences  
Deputy Vice Chancellor,  
Research, Production and  
Extension, JKUAT



**Jonah Ratsimbazafy**  
 Madagascar  
 Agricultural sciences  
 President, Madagascar  
 Primate Research Group  
 (GERP)



**Anthony Okoh**  
 Nigeria  
 Biosciences  
 Director at SAMRC  
 Microbial Water  
 Quality Monitoring Centre,  
 South Africa



**Isa Hussaini**  
 Nigeria  
 Medical and health sciences  
 Editor-in-Chief, Nigerian  
 Journal of Pharmaceutical  
 and Biomedical sciences



**Simeon Materechera**  
 Malawi  
 Agricultural and nutritional  
 sciences  
 Director, Indigenous  
 Knowledge Systems Centre



**David Olaleye**  
 Nigeria  
 Medical sciences  
 Professor of  
 Virology, University of  
 Ibadan



**Oluwatoyin Ogundipe**  
 Nigeria  
 Biosciences  
 Vice Chancellor, University  
 of Lagos



**Bert Klumperman**  
 Netherlands  
 Biosciences  
 Professor in Advanced  
 Macromolecular  
 Architectures, Stellenbosch  
 University



**Effiom Edem Antia**  
 Nigeria  
 Environmental and Earth  
 sciences  
 Professor of Geological and  
 Physical Oceanography,  
 University of Calabar,  
 Nigeria



**Pius Okeke**  
 Nigeria  
 Physical sciences  
 President of African  
 Astronomical Society





**Tal-hatu Kolapo Hamzat**  
 Nigeria  
 Medical and health sciences  
 Professor and Orator,  
 University  
 of Ibadan



**Evance Kalula**  
 South Africa  
 Law and legal sciences  
 Director Internalization and  
 Outreach, University of  
 Cape Town



**Emmanuel Kasimbazi**  
 Uganda  
 Policy sciences  
 Chair, Makerere University  
 Environmental Law Centre



**Agnes Binagwaho**  
 Rwanda  
 Medical and health sciences  
 Vice Chancellor – University  
 of Global Health Equity,  
 Rwanda



**Nancy Phaswana-Mafuya**  
 South Africa  
 Public health sciences  
 Deputy Vice Chancellor,  
 Research  
 and Innovation, North West  
 University



**Alison Elliot**  
 United Kingdom  
 Biosciences  
 Theme leader, Uganda  
 Virus Research Institute  
 (UVRI) Unit



**Aissa Wade**  
 Senegal  
 Mathematical sciences  
 President  
 AIMS – Senegal



**Bassirou Bonfoh**  
 Togo  
 Veterinary sciences  
 Director General, CSRS

## News from Fellows



**Alimuddin (Ali) Zumla** was honoured by Her Majesty the Queen of England in her 2017 Birthday Honours List for his exceptional

services to Public Health and Infectious Diseases. He was made Knight Bachelor of The Most Excellent Order (KBE), which confers him the title of 'Sir' Alimuddin Zumla. In the UK, a Knighthood is the highest civilian honour accorded by the Queen.



In 2017, The AAS lost three illustrious scientists and Fellows:



**Driss Aboutajdine**, a distinguished physicist who contributed innovative algorithms and pioneered work to develop IT research activities in Morocco and North Africa, died in March



**Francis K. A. Allotey**, one of the 33 founding Fellows of The AAS, died in March at the age of 85. He was a distinguished mathematician and served in the GC as

a Vice President for West Africa from 2005 to 2013. He remained a devout and active member of the Academy who was committed to its values to his death



**Calestous Juma**, a Kenya-born internationally recognised scientist, who had been named one of the most influential 100 Africans in 2012, 2013 and 2014 by

*New African* magazine, died in December at the age of 64. He had been a professor at Harvard University in the US at the time of his death.

## The AAS Affiliates Programme

The aim of the AAS Affiliates programme is to provide mentorship and career development support to early career scholars, enabling them to develop into world class research leaders and help retain them on the continent. Twenty-five early career scientists, seven who are women, include individuals from Ethiopia, Senegal and Sierra Leone, countries not represented in the previous two cohorts, were elected into the third cohort of The AAS Affiliates Programme for the first time. An additional first is that there is an Affiliate representing the Cultural

Sciences, Humanities and Social Sciences discipline category.

The Affiliates will be part of The AAS membership pool from 2018 to 2022 during which The AAS will engage them in various activities including, but not limited to attendance and participation at conferences, symposia, workshops and other engagements that will improve their skills in proposal development, grant writing and pitching innovations to help them secure grants, improve their publication records and ensure that their research impacts their communities.

## Affiliates Elected in 2017 (25)



**Jewelna E.B. Akorli**  
Ghana  
Medical and health sciences



**Abdon Atangana**  
Cameroon  
Applied mathematics



**Fagbamigbe Adeniyi**  
Nigeria  
Medical and health sciences



**Anye Vitalis**  
Cameroon  
Engineering technology and applied sciences



**Bahaa El-Dien M El-Gendy**  
Egyptian  
Chemical sciences



**Rodrigue Idohou**  
Benin  
Agricultural and nutritional sciences





**Isoken Igbinosa**  
Nigeria  
Biosciences



**Charles Drago Kato**  
Uganda  
Biosciences



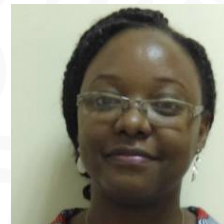
**Caroline Ngugi**  
Kenya  
Medical and health sciences



**Haikel Jelassi**  
Egypt  
Physical sciences



**Idowu Mutiu Kazeem**  
Nigeria  
Biosciences



**Siana Nkya**  
Tanzania  
Biosciences



**Mamusu Kamanda**  
Sierra Leone  
Cultural sciences, humanities and social sciences



**Kwadwo Asamoah Kusi**  
Ghana  
Medical and health sciences



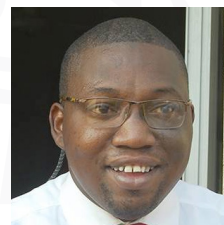
**Adeniyi Olagunju**  
Nigeria  
Medical and health Sciences



**Symon Kariuki**  
Kenya  
Medical and health sciences



**Maha Nasr**  
Egypt  
Medical and health sciences



**Olujimi Olusoji Olanrewaju**  
Nigeria  
Geological, environmental, Earth and space sciences



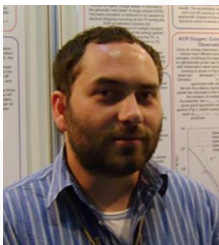
**Ahmed Adel Seida**  
Egypt  
Medical and health  
sciences



**Cornelius Ssemakalu**  
Uganda  
Biosciences



**Mkunde Chachage**  
Tanzania  
Biosciences



**Roelf DuToit Strauss**  
South Africa  
Physical sciences



**Esmael Habtamu Ali**  
Ethiopia  
Medical and health  
sciences



**Doudou Sow**  
Senegal  
Medical and health  
sciences

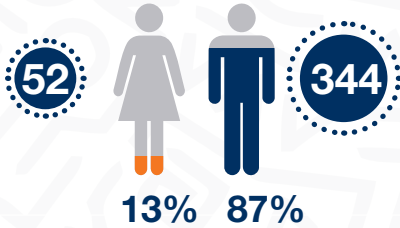


**Khalid Saqr**  
Egypt  
Engineering technology  
and applied sciences

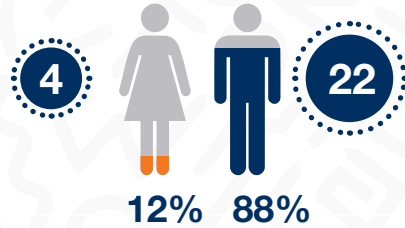
# Recognising Excellence

## Fellows Snapshot

Total Number of Fellows (396)



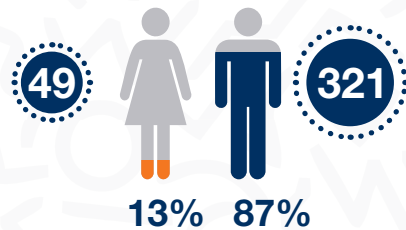
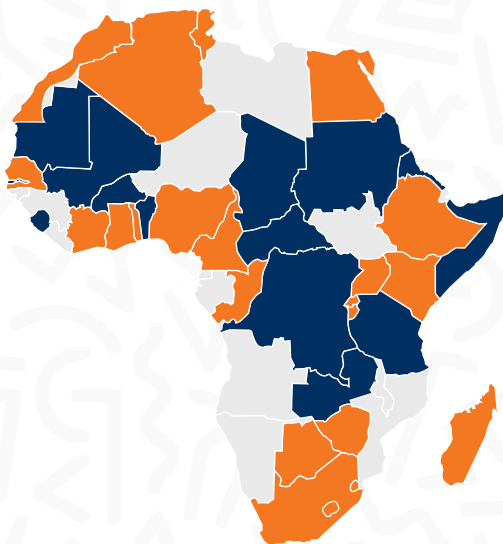
Associate Fellows (26)



Honorary Fellows (3)



AAS Fellows from Africa  
(Country & Gender)



- Countries with female fellows
- Countries with only male fellows
- Countries with no Fellows

370/396 Fellows from Africa

**Associate Fellows:** are elected from among **active and outstanding non-African scientists** residing elsewhere or in Africa who have made significant contributions to the development of STI in Africa

Country	Male	Female	Country	Male	Female
Americas			Denmark	1	0
Canada	0	1	Germany	3	0
United States	2	1	Ireland	0	1
Asia's/Oceania			Italy	2	0
China	2	0	Netherlands	1	0
India	5	0	Sweden	1	0
New Zealand	1	0	Switzerland	1	0
Pakistan	1	0	United Kingdom	2	1
Europe			Totals	22	4

## Honorary Fellows (3)

**Honorary Fellows:** are elected from amongst eminent members of society who have made significant contribution to the objectives of the Academy



**H.E Olusegun Obasanjo**  
Former President of  
Nigeria

Elected in 2011



**H.E Denis Sassou  
Nguesso**  
President, Republic of the  
Congo

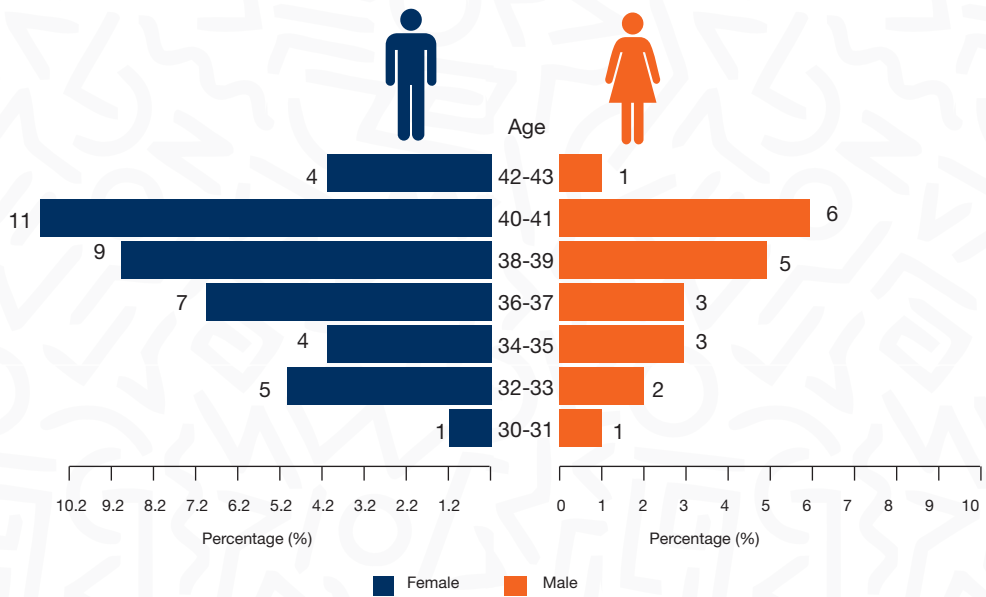
Elected in 2014



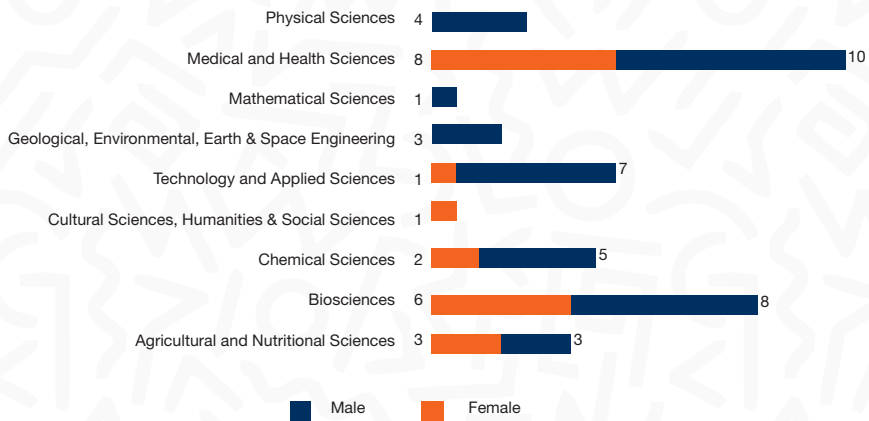
**H.E Ian Khama**  
Former President of  
Botswana

Elected in 2016

## Affiliates Snapshot

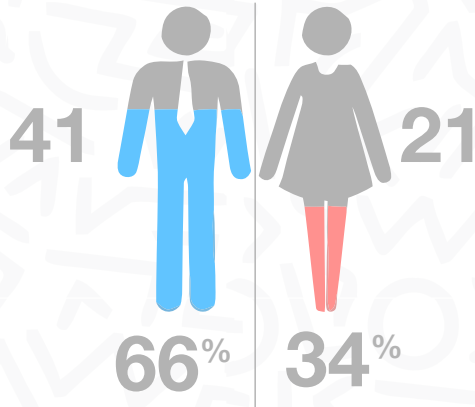


## Affiliates Fields of Expertise by Gender

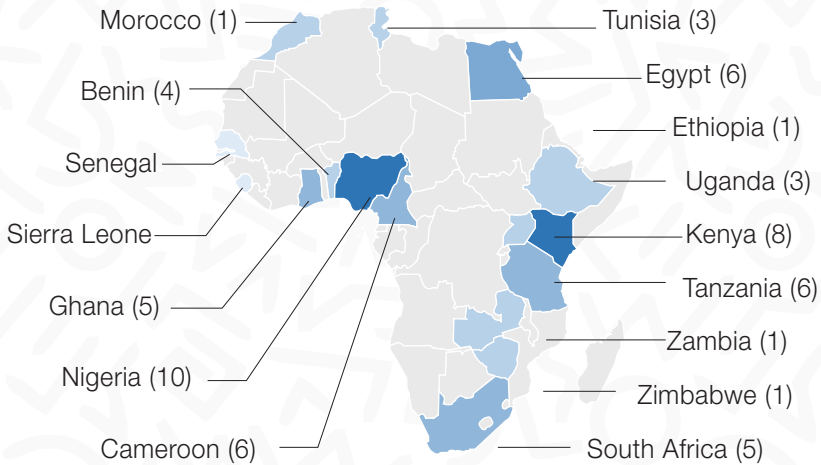




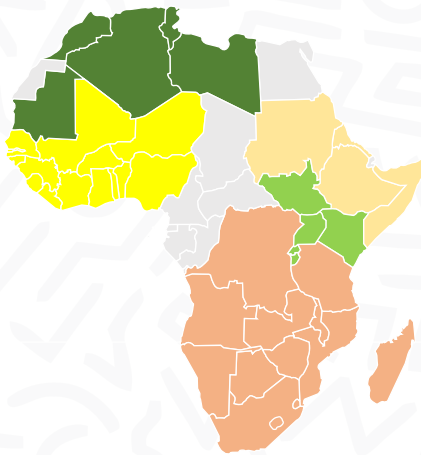
### Affiliates (62)



### Affiliates (by country based)



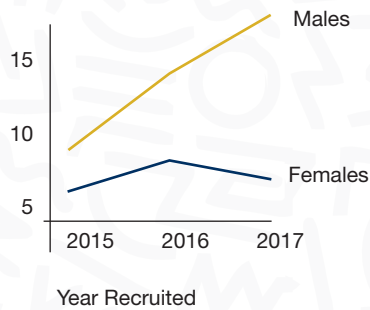
## By region



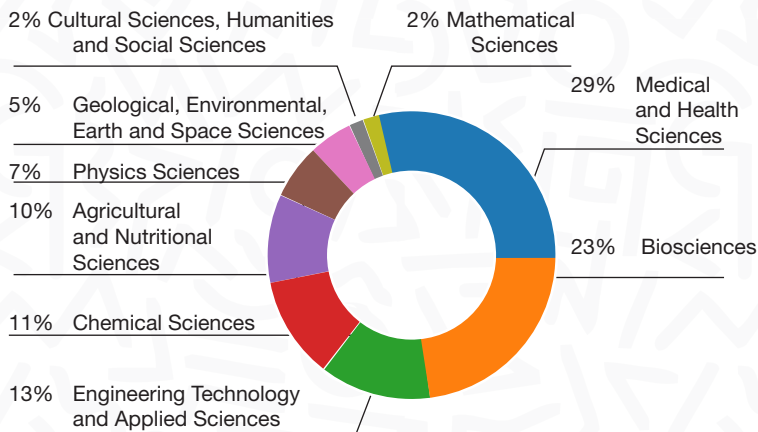
	WOMEN   MEN	
IGAD	0	1
ECOWAS	7	17
SADC	7	6
EAC	4	7
AMU	1	3
OTHER REGIONS	0	12

IGAD - Intergovernmental Authority on Development  
 ECOWAS - Economic Community of West African States  
 SADC - Southern African Development Community  
 EAC - East African Community  
 AMU - Arab Maghreb Union

## Recruitment of Affiliates by gender



## Affiliates field of expertise



# Implementing Science Programmes

The AAS's programmes are implemented through the AESA, a platform it created jointly with the NEPAD Agency. Over the year, AESA developed and began implementing a business plan running from 2016-2021 that has four strategic goals:

- **Goal 1:** Build R&D environments that support a vibrant research culture and leadership development over the long term
- **Goal 2:** Support the development of an innovation and science driven entrepreneurial culture
- **Goal 3:** Identify and support rising research leaders to stay and build their careers in Africa
- **Goal 4:** Target critical gaps in the research landscape.

programme and the Africa Science Desk, and began discussions to establish additional programmes to support postdoctoral fellowships and encourage collaboration between Africans and Indians.

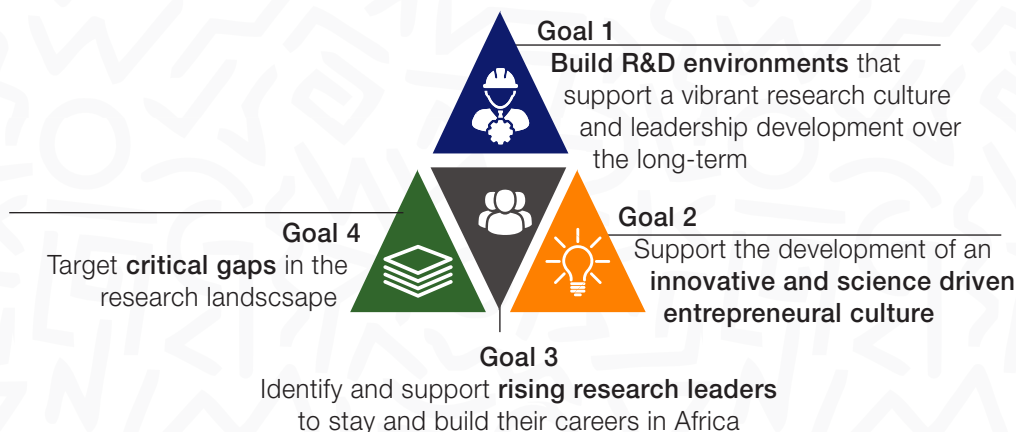
AESA also added community and public engagement and research management to its portfolio. The activities undertaken are:

## Building R&D Environments

Under this goal, programmes are being implemented to produce world-class scientific research by helping to develop the next generation of African researchers and research leaders, as well as R&D environments that are world class. Programmes that fall under goal one seek to promote collaborative networks, particularly, between Africans. They cover:

AESA gained two additional programmes, the AESA-RISE Postdoctoral Fellowship

## Business Plan 2016-2021 Strategic Goals



## Developing Excellence in Leadership, Training and Science (DELTA) Africa

DELTA Africa is a programme to develop world-class researchers and scientific leaders in Africa who will conduct cutting-edge health research in infectious diseases, non-communicable diseases (NCDs), population and public health. The AAS has continued to provide leadership and support to the 11 DELTA Africa funded programmes, conducting site visits and teleconferences and participating in annual scientific conferences. Other support covers:

The 2017 Annual Grantees meeting in Accra Ghana, which drew high level keynote speakers including Nobel Laureate Peter Agre and Ghana's ministers of health and science and provided a platform for grantees to network and showcase their science. The annual meeting was preceded by pre-conference workshops on Translating Research into Policy and Scientific Publishing organised for DELTA Africa fellows.



*Nobel Laureate Peter Agre and participants at DELTA Africa AGM*

The AAS finance team has continued to provide support to DELTA Africa grantees, including guidance on preparing quarterly finance reports and projections, remitting grants and overseeing internal audit processes for grantees. The finance team also works with Wellcome to conduct internal audits at some of the DELTA Africa grantees.

### Audit

In 2017, the Wellcome Audit team conducted an internal audit of AESA and the DELTA Africa programme.

### DELTA Africa progress

The programme has been tremendously productive since its implementation began in 2015. In addition to achieving gender parity in the recruitment of fellows, the 11 DELTA Africa programmes have collectively established networks and collaborations that have strengthened and broadened access to resources and skills across the consortia. The programmes have attracted additional funding and its researchers have published in peer reviewed journals further suggesting the competitiveness and the high standards and quality of the DELTA Africa programmes.

To achieve its vision, DELTA Africa funds programmes that address four strategic areas:

- Scientific quality
- Research training
- Scientific citizenship
- Research management and environment

Progress made in the four strategic areas is detailed below:

## Scientific Quality

### DELTAS Africa programmes

#### MALI

Developing Excellence in Leadership and Genetic Training for Malaria Elimination in Sub-Saharan Africa



#### SENEGAL

Malaria Research Capacity Development in West and Central Africa



#### COTE D'IVOIRE

African Science Partnership for Intervention Research Excellence



#### GHANA

West African Centre for Cell Biology of Infectious Pathogens



#### UGANDA

Makerere University UVRI Centre of Excellence for Infection & Immunity Research and Training



Training Health Researchers into Vocational Excellence



#### KENYA

Consortium for Advanced Research Training in Africa



Institute to Develop African Research Leaders



#### ZIMBABWE

African Mental Health Research Initiative

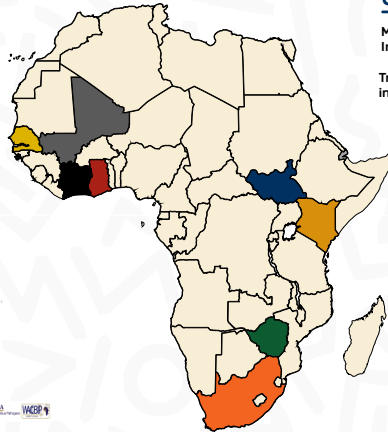


#### SOUTH AFRICA

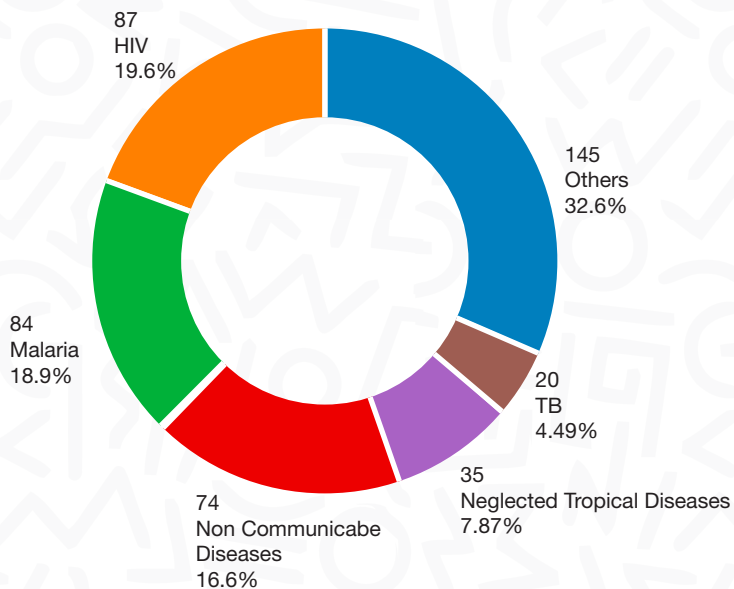
Sub-Saharan Africa Network for TB/HIV Research Excellence



Sub-Saharan Africa Advanced Training Programme for Leadership and Excellence in Biostatistics (SSACAB)



### Research on Diseases





## Research Training

**992** Trainees recruited (masters, PhD, postdoctoral fellows, graduate interns)

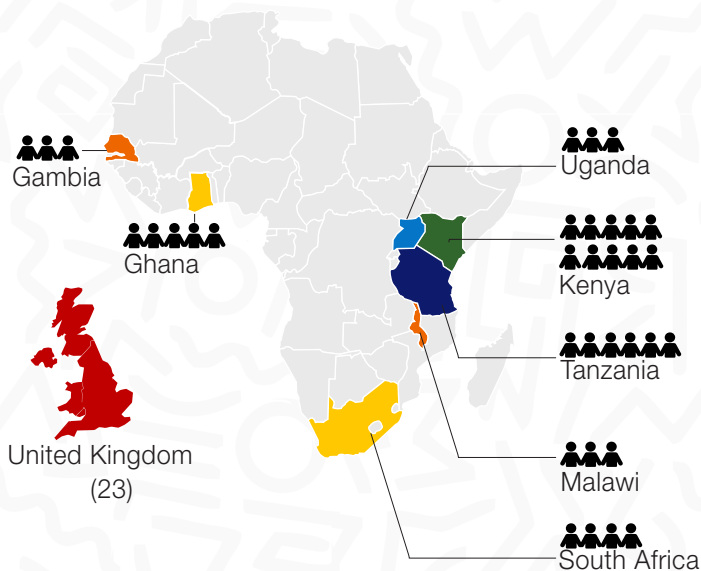
**13** DELTAS Africa Fellows recruited from the diaspora (**4** Postdocs, **3** PhD, **3** MSc and 2 graduate interns)

**517** women to **475** men

## Scientific Governance and Collaborations

**312** governance and management meetings held by the **11** programmes

**247** new research networks and collaborations established across the **11** programmes



## Scientific Productivity

**174** peer reviewed publications published across the **11** programmes

**4** policy briefs

**17** conference publications

**23** theses and dissertations

**113** new research grants worth **US\$60 M**

**49** new recognitions/awards with a total monetary value of **8.7million** received by DELTAS Africa researchers.

## Reversing Brain Drain Through DELTAS Africa



Lily Paemka, DELTAS Africa postdoctoral fellow

Ten years ago, Lily Paemka left Ghana for the United States to pursue her PhD studies and stayed. Her talent and skill could have been lost to Ghana forever had the West African Centre for Cell Biology of Infectious Pathogens (WACCBIP) not been established.

“I’m glad to be back,” Paemka says. “It feels great. Since I’ve been back, there have been more opportunities here than I even anticipated. First of all, I get to see my family and I get the opportunity to train young scientists, which is exciting. Even though I haven’t been back that long, I already feel it’s fulfilling.”

She returned to Ghana in 2017 to conduct research on a type of breast cancer that is most aggressive among Black women. The strain, known as Triple Negative Breast Cancer (TNBC), has a mortality rate of around 50% among Ghanaian women and Paemka focuses her talents and the resources provided by DELTAS Africa-funded WACCBIP on characterising the genetic risk factors of the disease. Her research aims to better understand the genetic architecture of breast cancer among Black women.

“I wanted to focus on breast cancer because it’s one of the leading causes of death among Ghanaian women and data suggest women here get breast cancer 10 years earlier than women in the developed world,” she says. “So, the idea is to identify genes that predispose Ghanaian women to the disease and find genetic markers that can be used to identify therapeutic targets, and of course develop drugs, ultimately.”

DELTAS Africa offers conducive research environments to conduct research and develop world-class researchers, opportunities that are not easily available on the continent.

Paemka’s story, which is increasingly becoming common, shows the impact investing in health research can have on efforts to reverse brain drain.

WACCBIP has achieved this kind of success by recruiting scientists working on genetic markers for autism and hearing loss, those examining factors that increase the risk of sickle cell patients developing cardiovascular conditions, and investigators discovering new targets for malaria vaccines. Some of these diseases are mostly endemic in Africa and so may fail to attract global investment.

Through DELTAS Africa, The AAS and partners are investing in the creation of conducive environments for scientists to increase rates of returning or retention on the continent to research on Africa’s health priorities.

The programme also contributes opportunities for scientists like Paemka to transition from an early career scientist to a senior scientist and attract more funding to research on Africa’s priorities, as well as train younger scientists.

DELTAS Africa is demonstrating the value of investing in science to strengthen research ecosystems and ensure that more African researchers stay on or return to the continent.

## Human Hereditary and Health in Africa

Wellcome awarded a grant of \$11M to the African Academy of Sciences to manage the Wellcome-funded phase II of its component of the Human Hereditary and Health in Africa (H3Africa) programme. Phase 1 of H3Africa, a major genomics research programme, was implemented and managed by Wellcome and the US' NIH. The AAS is continuing the established partnership with the NIH and Wellcome to deliver Phase II.

H3Africa is dedicated to the development and implementation of activities to achieve its overall goal of increasing the number of African scientists in genomics and population based research, improve infrastructure for genomics research on the continent and promote intra-Africa collaboration.

In February, H3Africa issued a call for proposals, comprised of two stages: a preliminary one where applicants were asked to provide a two-paged concept note, screened through an internal triage that led to 16 candidates being invited to submit full applications. This resulted in the selection of four awardees who were required to undergo a due diligence process through the GFGP assessment tool. This assessment required them to evaluate 4 functional areas of including; finance, procurement, governance and human resource.

Activities for 2018 include a risk management workshop, an inception meeting and the H3Africa consortium meetings, creating a working group to advance the Biobank Africa agenda and engaging the Beijing Gemone Institute as it seeks to enter the African market.

## H3Africa Objectives

Encourage contemporary research approach by African Scientists to the study of genomics and environmental determinants of diseases of importance to the continent

### 01 African Scientists

Increase the number of African Scientists in genomics and population based research



### 02 Collaborations

Promote collaborative networks focused on genomics based research within the continent



### 03 Research Infrastructure

Improve infrastructure for genomics research on the continent- Bioinformatics and Biorepositories





# Innovation and Entrepreneurship

## Grand Challenges Africa

Grand Challenges Africa (GC Africa) seeks to support innovations that address Africa's health and developmental challenges. The scheme aims to promote Africa-led scientific innovations to help countries better achieve the Sustainable Development Goals (SDGs) by awarding Innovation Seed Grants of up to \$100,000 and Innovation Transition Grants of up to \$1 M to develop the continent's most impressive solutions.

In 2017, GC Africa undertook the following activities to realize its goal of spurring innovation in Africa:

## Partnership with Medical Research Council

The AAS created a partnership with the South African Medical Research Council to fund, conduct and facilitate innovation. The partnership will catalyse and strengthen intra-continental research collaboration between South African researchers and their peers on the continent. There were no awardees for the first round of applications in 2017, funding was rolled over to the second call for the seed grants.

## Inaugural Sentinel Meeting

GC Africa held its first ever Sentinel Meeting in Lusaka, Zambia in August 2017 where 22 early to mid-career scientists from several African countries were nominated to present their research projects to a team of potential funders.

This session brought together African researchers supported through DELTAS Africa, H3Africa and Grand Challenge partners to explore ideas on how academia in Africa can work to improve translation of knowledge generated on the continent into products and policies that will impact health.

Based on the success of this gathering, meetings will now be held once every year.

## Grand Challenges Annual Meeting 2017

GC Africa and partners hosted a session at the 2017 Grand Challenges annual meeting titled: *Strengthening African R & D: A dialogue with African Diaspora in the United States*. Its main aim was to recognise the global health and development community, particularly those focused on R&D and innovation and the African diaspora in the US that contributes to the global health and development community. Participants discussed the diaspora's expertise as leverage for the development of Africa's research and innovation ecosystem.

About 80 stakeholders from global partners and the African diaspora converged and deliberated on how a strong African R&D ecosystem will be crucial to unlocking the transformative solutions needed to tackle the continent's biggest health and development challenges and achieve the Sustainable Development Goals (SDGs).

In addition, GC Africa sponsored 11 participants from the Lusaka sentinel meeting and its first maternal, child and neonatal health (MCNH) grantees to participate in a meeting Keystone held in parallel to the GC annual meeting.

## Setting funding priorities for antimicrobial resistance

Under the auspices of GC Africa, The AAS organised a roundtable discussion in Nairobi on setting funding priorities for antimicrobial resistance (AMR) in Africa. Twenty-nine participants from across the continent, including government officials and researchers attended the event, which discussed the current status of AMR and identified gaps

in knowledge and capacity. The outcome of the discussion informed the 2018 Grand Challenges Africa call for proposals announced in the first quarter.

### Proposal Writing Bootcamp

In collaboration with the Ifakara Health Institute and Institut de Recherche en Sciences de la Santé (IRSS)/Centre in Burkina Faso, GC Africa organised a proposal development 'BootCamp' workshop in Burkina Faso in October to train 24 early career researchers from Benin, Botswana, Burkina Faso, Cameroon, Kenya, Nigeria, Mozambique, Rwanda, Senegal and Zimbabwe to prepare successful grant proposals.

The workshop aimed to improve the quality and increase the number of project submissions from African researchers while stimulating interaction and collaboration between researchers and institutions.

### Development of an e-marketplace

The development of an e-marketplace to bring innovators and potential funders together (brokers, investors, equity funders or business associates) is at an advanced stage and is being prepared for launch.

### First awardees for MNCH grants

The scheme funded its first innovators comprising eight researchers in Kenya, Madagascar and Senegal who were selected from among about 400 applicants from 20 African countries to tackle maternal, neonatal and child health on the Continent in September. Each winner received about US\$100,000 for two years to implement projects that range from a portable system to detect the Zika virus to the diagnosis of maternal bacterial infections.



*Sam Kiware from Ifakara Health Institute facilitating the bootcamp in Burkina Faso*

## GC Africa awards for maternal, neonatal and child health

### Kenya



**Dahabo Adi Galgallo, Innovator**

GPS tracking to enable provision of pre-and antenatal care for expectant mothers in pastoralist and nomadic communities



**Jesse Gitaka, Lecturer/Research Fellow, Mount Kenya University**

Multiplex diagnosis for bacteria infections



**Angela Koech Etyang, Physician Scientist, Centre of Excellence in Women and Child Health and Instructor, Department of Obstetrics and Gynaecology, Aga Khan University – Nairobi**

Point of care tests to improve antenatal screening



**Christine Musyimi, Head of Research Ethics and Scientific Publications Office, Africa Mental Health Foundation**

Engaging traditional births attendance to reduce maternal depression



**Eric Ogola, Epidemiologist, Jaramogi Oginga Odinga University of Science & Technology and PhD Student, University of Nairobi**

Algorithms for deciding which antibiotic to use in blood-borne infections in children less than one month old.

### Madagascar



**Niaina Rakotosamimanana, Head of the Mycobacteria Unit, Pasteur Institute of Madagascar**

Diagnostics for tuberculosis in pregnancy

### Senegal



**Diawo Diallo, Medical Entomologist, Institut Pasteur de Dakar, Senegal**

Rapid Zika detection to aid MNCH



**Muriel Vray, Epidemiologist, Institut Pasteur of Dakar, Senegal**

Develop Hepatitis B assays



# Networking Early Career Scientists



There are no words to express how valuable the experience of attending the annual Grand Challenges Annual Meeting has been for me.

The Strengthening African R &D: A dialogue with African Diaspora in the Unites States was well planned, though-provoking and inspiring. The other exciting scientific tracks made it difficult to decide where to be and our Zambia group often ended up splitting and then filling each other in on what happened in the different sessions. Every session I attended was amazing. However, the final session for the Strengthening African R&D track was the highlight of the conference for me. One speaker in a roundtable discussion said that, “In this

field, you can leave your ego and arrogance at the door. You walk in humbly. In this game, there are no winners. It is not a question of whether people will die, the question is how many people will die.” This brought home the reality of the research, the impact, on human lives and on alleviating human suffering. I find myself reflecting on these words, and expect to do so regularly going forward. Research and the translation of research, hand in hand, going forward.

I usually leave conferences feeling energised and excited. This is the first time that I feel not only both of these things, but more so, I feel humbled. Thank you to The AAS for sponsoring my attendance.

*Written by Meesbah Jiwaji, a National Research Foundation Research Career Advancement Fellow at Rhodes University in South Africa, one of the 11 participants from the inaugural Sentinel Meeting sponsored by GC Africa to attend the Grand Challenges Annual Meeting in the US.*

## Rising Research Leaders

The African Academy of Sciences is committed to developing a future generation of African scientists through quality training, supervision and mentorship who will lead Africa’s science-driven transformation. The AAS is currently running three programmes under the Rising Research Leaders banner. These programmes offer postdoctoral and postmasters training to support globally competitive research in African universities and contribute to the creation of knowledge-based economies on the continent: and training in STEM.

## AESA-RISE Postdoctoral Programme

In April, the AAS announced the AESA-RISE Postdoctoral Programme. The programme is building on the foundation of the Science Initiative Group (SIG)’s Regional Initiative in Science and Education (RISE), which has for a decade prepared PhD- and masters-level scientists and engineers in sub-Saharan Africa through competitively selected, university-based research and teaching networks. AESA-RISE was enabled by a \$2 M grant from the Carnegie Corporation of New York. The programme launched a closed call for applications in June to provide up to \$144,000 to each



successful fellow for three years.

Seven candidates were selected for due diligence to enable them to begin their fellowships during the first quarter of 2018.

### Climate Impact Research Capacity and Leadership Enhancement

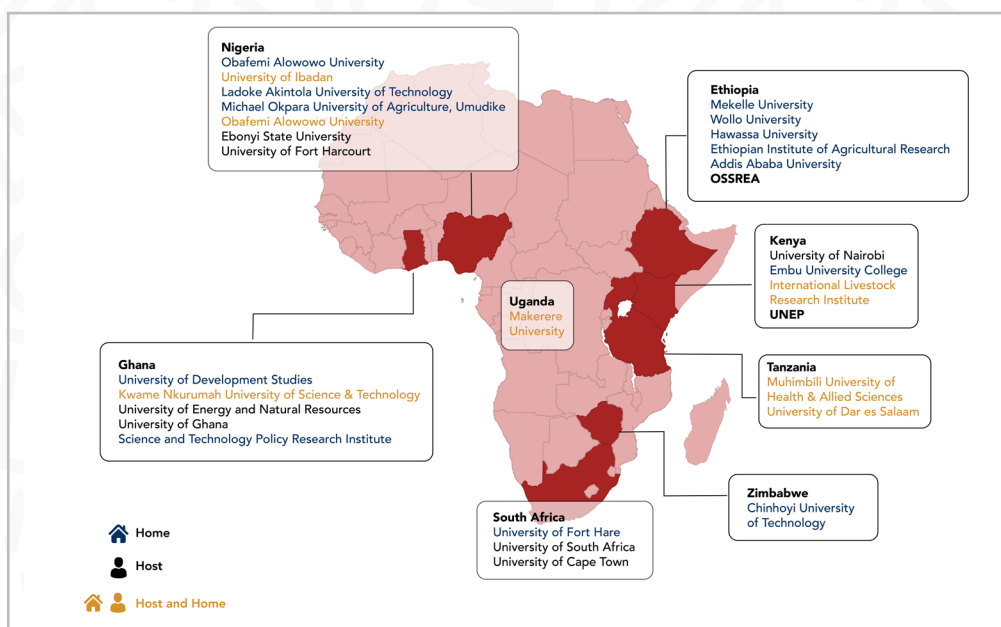
The AAS has been implementing the Climate Impact Research Capacity and Leadership Enhancement (CIRCLE) programme since 2014 in collaboration with the Association of Commonwealth Universities and with the support of the DFID to develop the skills and research output of early career African researchers in the field of climate change and its local impacts on development. The project grant is completed but discussions are ongoing on the future of the programme. The programme successfully achieved

its objectives, awarding 96 post-masters and postdoctoral fellowships to African researchers to spend a year at guest institutions. This earned it an A+ rating from a review conducted by DAI Europe on behalf of DFID.

CIRCLE activities in 2017 included:

- Cohort 2 and 3 Meetings: An end of fellowship meeting for cohort 2 was held in Nairobi from 6-8 February 2017. A pre-fellowship workshop for cohort 3 was held in Nairobi from 8-10 February 2017. By end of December 2017, all the CVFs had successfully completed their fellowship and returned to their home institutions
- CIRCLE Champions meeting, which was held in Nairobi in December to discuss the type of support the 31 institutions involved in CIRCLE can provide to early career researchers to develop their careers.

### CIRCLE Institutions



# CIRCLE Impact

Number of Fellows		Gender	Cohort 1	Cohort 2	Cohort 3	Total
Cohort 1 (2015)	34	Female	14	15	19	48
Cohort 2 (2016)	29	Male	20	14	14	48
Cohort 3 (2017)	33	<b>Grand Total</b>	<b>34</b>	<b>29</b>	<b>33</b>	<b>96</b>
<b>Total</b>	<b>96</b>					

Degree	Cohort 1	Cohort 2	Cohort 3	Total
Masters	15	10	11	36
PhD	19	19	22	60
<b>Grand Total</b>	<b>34</b>	<b>29</b>	<b>33</b>	<b>96</b>



**375**

Conferences/  
seminars  
attended by  
all cohorts



**142**

CIRCLE  
Research  
presentations



**180**

Articles  
submitted or  
under review  
in peer  
reviewed  
journals based  
on CIRCLE  
research



**382**

Articles  
submitted  
or awaiting  
publication  
in a peer review  
journal



**62**

Articles  
published by  
peer reviewed  
journals based  
on CIRCLE  
research

## Developing Africa's Scientific Leaders



Mercy Derkyi, a social development worker entered into a career in academics in 2013. She joined the University of Energy and Natural Resources, Ghana as a lecturer. Her late entry with academics required her to survive the 'publish or perish' requirement in academia.

The Climate Impact Research Capacity and Leadership Enhancement (CIRCLE) was one of the ways Derkyi enhanced her research capability and publication. She was one of the first fellows of CIRCLE in 2015, which enabled her to spend a

year at the Regional Institute of Population Studies at the University of Ghana researching on 'how men and women farmers mitigate and adapt to climate change'. The one-year CIRCLE programme provided her with mentors to guide her in research and career development. Her research confirmed that women and men have poor access to agricultural resources, climate change information and service centres, and that coupled with socio-economic challenges are impacting how they adapt to this global phenomenon. Her results are published in AAS Open Research on 'Smallholder farmers' perception of climatic and socio-economic factors influencing livelihoods in the transition zone of Ghana' and ACU April 2018 Bulletin 'Intersecting issues: climate change, gender, and development' (p 6-7)

Derkyi's research inspired her to initiate the establishment of the Centre for Climate Change and Gender Studies at the UENR together with other colleagues where research, capacity building and co-creation and dissemination of knowledge on integrating gender into developmental issues such as climate change are carried out. At the centre, she and her team are working hard to ensure their scientific research influences policy especially on women, who comprise 70 % of agricultural workforce in Africa yet remain poor. Their research provides adequate support to deal with climate change for enhanced livelihoods.

CIRCLE also trained Derkyi to write the grant proposals, which have enabled her to win some remarkable grants together with collaborators.

Five years after joining academia, Derkyi is now an independent researcher and was just named a senior lecturer.

"I am grateful to CIRCLE for providing me with the skills that have helped shape and develop me as a scientist and scientific leader," she says.

## STEM Education

The AAS in collaboration with the Stellenbosch Institute for Advanced Study (STIAS), the MRC Developmental Pathways for Health Research Unit at the University of the Witwatersrand, the International Society for Developmental Origins of Health and Disease (DOHaD) African Chapter and other partners,



*Students participating in a journal club session at the AAS-STIAS DOHaD Summer School in South Africa*

organised a Summer School from in November on *Developmental Origins of Health and Disease Translational Science: from Cell to Society*. The summer school was hosted by STIAS.

Students comprised 25 young scientists from seven African countries. The curriculum was delivered by both African and international experts: Prof Abdallah Daar, University of Toronto, Canada and AAS Fellow; Prof Shane Norris, University of the Witwatersrand, South Africa; Prof Atul Singhal, University College London, United Kingdom; Prof Moffat Nyirenda, London School of Hygiene and Tropical Medicine, United Kingdom; Prof Eugene Sobngwi, University of Yaoundé 1, Cameroon; Prof Andrew Macnab, University of British Columbia; Prof Justine Davis, King's College; Prof. Peter Byass, Umeå University; Dr Juliet Pulliam, SACEMA and Prof Venant Tchokonte-Nana, Stellenbosch University

Topics covered included developmental origins of health and disease; the importance of DOHaD for African research; DOHaD Africa Chapter; research gaps, study design and opportunities; analysing longitudinal data; maternal health, developmental biology and stem cell science; and public health policy and the SDGs.



*Students during a lecture session at the AAS-STIAS DOHaD Summer School in South Africa*



## Critical Gaps in the Research Landscape

The Good Financial Grant Practice (GFGP) programme falls under this goal. In 2017, community and public engagement, research management systems and science communication were added to the portfolio.

### Good Financial Grant Practice

#### Phase 1: Development of the new international standard for Good Financial Grant Practice

In October, the African Organization for Standardization (ARSO) held its first Technical Harmonisation Committee (THC) meeting to review the first Technical draft of the GFGP standard in Nairobi, Kenya. Delegates at the THC (photo below), included representatives from nine African National Standards boards: Botswana, Cameroon, Ghana, Kenya, Nigeria, Rwanda, Tanzania, Zambia and Zimbabwe, together with representatives from ARSO, The AAS, and the British

Standards Institute.

During the three days of its meeting the THC members reviewed and reached consensus addressing the about 200 comments raised by the THC members, maintaining the fundamentals of the standard and its structure. None of the accepted comments caused any fundamental changes to the standard or its structure. A second THC meeting was scheduled for February 2018 and followed by a public consultation period. Adoption was projected for the ARSO General Assembly meeting in June, 2018.

#### Phase 2: Development of a portal-based system to assess compliance to the standard

The objective is to develop a portal in which a grantor will request a grantee to complete a question-based assessment of grantee compliance to the requirements of the standard. In October, funding for Phase 2 of the GFGP programme was



Participants at the THC meeting to review the GFGP standard in Nairobi, Kenya

secured from the Medical Research Council (UK), the Department of Health (UK) and the European and Developing Countries Clinical Trials Partnership (EDCTP).

An initial version of the assessment portal was released in mid 2017 and the Department of Health has been piloting its use in 22 countries across four continents. A refined version will be available for testing in April 2018, and the production version will be available for launch of the new standard in 2018.

### **Phase 3: Financial Self Sufficiency**

The objective is that when the system is launched, continued financial support will be secured through a subscription model in which grantors will pay an annual subscription to enable their grantees to access the assessment system and complete their pre – award compliance assessments. To develop interest in the grantor community, the GFGP team presented its model at numerous conferences and meetings in Africa, Europe and the USA, which has provided encouragement that the subscription based financing model will be successful.

### **Community and Public Engagement**

Health-related scientific research offers great promise to address development challenges facing Africa, yet its very nature also challenges personal and societal beliefs, choices, and cultural norms. This poses the potential for misunderstanding science as an endeavor of “outsiders”; by communities in which it is conducted, and in which its results are implemented. Engaging non-academic/non-scientist research communities and wider publics in the work scientists do is therefore critical. The vision is for ordinary citizens across Africa be more engaged with, and excited about science and its outcomes by transforming the way researchers/scientists on the continent

relate and interact with the public as they share their ideas and seek new perspectives about their work. To achieve this, The AAS has developed a community and public engagement (CPE) strategy, applying a two-pronged approach – a capacity strengthening aspect aimed to build researchers/scientists skills in CPE, and a targeted and sustained public campaign profiling the role of science in people’s everyday lives.

### **Activities in the last months**

A strengths and gaps survey was conducted among the 11 DELTAS and four H3Africa grant holders to determine capacity to implement CPE initiatives, as well as inform development of a capacity development program. Areas of inquiry included; dedicated staff to implement CPE, effort time of staff for CPE activities, existence of a budget, existence of an engagement strategy/plan to guide implementation, coordination of engagement efforts across lead institutions and sub awardees, training needs/priorities, and place of CPE in overall organizational structures. Findings will be made available in 2018.

A guidance document on community and public engagement was developed and currently under review from seasoned engagement professionals. A final version will be shared with engagement staff/focal point persons of DELTAS & H3Africa during a capacity development workshop in 2018.

To facilitate cross-sharing and learning, a database and mailing list of engagement staff or focal point persons of The AAS’ DELTAS Africa and H3Africa programmes has been developed. This is being expanded to include the of GC Africa and AESA-ARISE programmes. CPE sharing and learning opportunities will be shared in real time.

## Transforming research management in Africa

In 2016, The AAS co-hosted a workshop on Building a Strong Research Ecosystem for Sustainable Development with the Bill & Melinda Gates Foundation, DFID and Wellcome at the Grand Challenges Annual Meeting in London. The meeting drew over 100 participants whose input is contributing to the Academy's strategic thinking on research management. Some of the findings highlight the absence of specialty research managers can threaten the delivery, integrity and quality of research. For example, many researchers funded by The AAS have to dedicate a disproportionate amount of time on administration due to the absence of research managers.

Research Management is a core component of any research ecosystem; as such, The AAS seeks to enshrine research management at the heart of the research support system, supporting institutions and their researchers by delivering a co-ordinated programme of development for non-academic professionals, defining career pathways, enhancing personal skillsets, developing peer support networks, and creating communities of practice.

Research management has been defined as embracing 'all administrative and operational functions/activities an

institution does to support the output of its researchers, other than the conducting of the research itself.' These functions are not always provided from a single unit.

The research management programme design will recognise, and build on previous initiatives in the area and where possible utilise existing expertise. The programme employs an approach which addresses key systemic issues. Based on a consultation exercise, The AAS proposes to base the programme around four interconnected strands. These are:

- **Strengthening research management functions** across successive generations of institutional leadership and senior academic staff
- **Sustainability** – finding mechanisms to help ensure that institutions can support their own research management functions, regardless of funder or government support; aligning funder policies to meet indirect costs
- **Standards** – reaching an understanding of common standards and good practice that constitute an acceptable level of provision, recognised both by institutions and funding partners
- **Developing individual capacity** – promoting the notion of the research management career pathway in institutions, supported by an appropriate infrastructure of networks and training opportunities.



# Promoting Science Communication and Advocacy

2017 also saw robust growth for The AAS with new initiatives for science communication and advocacy that include:

## AAS Open Research

In 2016, the General Assembly — the highest decision-making body of the African Academy of Sciences — mandated the secretariat to set up a pan-African open access platform to promote the visibility of research being conducted on the continent. To operationalise this, AAS Open Research was announced in 2017. This is an innovative publishing platform, powered by F1000, offering immediate publication of any research results worth sharing from AAS-affiliated and funded researchers within days. AAS affiliated researchers include its Fellows, Affiliates and those funded through the Alliance for Accelerating Excellence in Science in Africa (AESA).



*The AAS's Director of Programmes Tom Kariuki and AAS Senior Advisor Elizabeth Marincola at icipe to present AAS Open Research. Photo credit: icipe*

AAS Open Research

The outputs of AAS Open Research will range from traditional research articles and systematic reviews to non-traditional outputs, such as research protocols; replication and confirmatory studies; data notes; negative or null findings, and case reports.

Once published on AAS Open Research, all articles will undergo transparent peer review by experts from around the world. Revisions and reviews will be posted, providing visibility and credit for the contributions of reviewers as well as authors. Contributions will be published, after ethical and technical checks, within days and associated data will be fully searchable, readable, minable and reproducible without barriers.

A distinguished advisory board consisting of researchers from across Africa and abroad has been selected. AAS Open Research was also presented to different foras including the Annual DELTAS Africa Grantees Meeting, the KEMRI-Wellcome Trust Research Programme, the Makerere/UVRI infectious and immunity Centre of Excellence (MUII-plus) and *icipe*, to raise awareness ahead of its launch in April 2018.

**1** Transparent post publication peer review model

**2** Immediate publication within days

**3** Access to underlying data from all articles



## Africa Science Desk

The Africa Science Desk was launched at Highway Africa, the premier journalism event for Africa held in South Africa every year. This is a project to build the capacity of science journalism in Africa. Over a two-year period, The AAS, the African Federation of Science Journalists and the South African Science Journalists Association, through the support of the Bill & Melinda Gates Foundation, is providing funding to journalists in Kenya, Nigeria, Senegal and South Africa to produce science stories aimed at local or global news markets.

Early-career African journalists are paired with senior science journalists internationally and continentally who will provide the mentorship needed to improve the quality of science reporting in Africa.

The launch was preceded by a two-day science journalism training workshop, which drew close to 20 participants eligible for the Africa Science Desk and Malawi, Sierra Leone and Zimbabwe.

### Progress to date

- To date ASD has awarded 25 journalists almost \$28,000
- Out of these, 13 are women and 12 are male
- The journalists represent three countries as shown below

Country	Stories published
Kenya	9
Nigeria	10
South Africa	6

- 11 mentors have been engaged. An additional \$6,900 allocated to them
- 9 Reviewers have been recruited with

an incremental allocation of \$350

- In 2017, a total of 14 journalists were funded and published stories in leading media outlets, including the Punch, Premium Times Nigeria, Environment News and Nigeria Broadcast Corporation, The Authority and Daily Trust in Nigeria, KTN, The Star and the Daily Nation in Kenya and Die Burger and The Herald in South Africa.

Themes	Number of Stories
Health and Wellbeing	10
Climate Change	5
Food Security and Nutritional Wellbeing	5
STEM	2
Science Advocacy and Policy Agenda	1
Water and Sanitation	1
Sustainable Energy	1

## The Coalition for Africa Research and Innovation

Together with partners, the Bill & Melinda Gates Foundation, the US NIH and Wellcome, the AAS laid the foundation for the Coalition for African Research and Innovation (CARI). CARI is a platform, led by Africans, to place research and innovation at the forefront of Africa's drive to achieve the SDGs by accelerating a wide range of scientific breakthroughs in Africa that help more Africans lead better lives sooner.

To achieve its mission, CARI seeks to effectively address two underlying constraints which currently limit the continent's ability to harness research and innovation to drive economic growth:

1. **Lack of resources/underinvestment in African R&D:** Africa is home to 15% of the world's people, produces 3% of global GDP, and carries 25% of the burden of disease. Yet it accounts for just 2.6 % of world research output, 1.3% of research spending and 0.1% of patents.
2. **Fragmentation of resources and strengthening R&D capacity:** Individuals, organisations and governments that fund and conduct R&D in Africa lack a mechanism for systematic collaboration. As a result, they miss out on the efficiencies and network effects that collaboration can bring, and their activities leave no permanent capacity.

### CARI to date

CARI's influence on the African research and innovation landscape has grown significantly since its launch in 2017, demonstrated by several key achievements:

### Attracting high profile individuals to govern CARI

CARI has successfully enlisted senior political, industrial and academic leaders from Africa and across the globe to govern CARI through governance and working groups. These groups comprise prominent individuals with diverse expertise representing research leadership across Africa. They are contributing their skills, knowledge and funding to spearhead CARI's efforts to accelerate scientific breakthroughs for more Africans to lead better lives sooner.

The **CARI Leadership Group** is providing the scientific and governance oversight to CARI and is drawn from among policy makers, researchers and scientific thought leaders, development financiers,

international funders of global/regional R&D, and business leaders from select industries essential to driving research and innovation for spurring Africa's economic growth.

### CARI Leadership Group

- **Akinwumi Adesina**, PhD / President, African Development Bank
- **Arnaud Bernaert**, MBA / Head of Global Health and Healthcare Industries and System Initiative, World Economic Forum
- **Jennifer Blanke**, PhD/ Vice President for Agriculture, Human and Social Development, African Development Bank, Côte d'Ivoire
- **Francis Collins**, MD, PhD / Director, National Institutes of Health, USA
- **Jeremy Farrar**, OBE, FRCP, FRS, FMedSc / Director, Wellcome Trust
- **Chris Karp**, MD / Director of Discovery & Translational Sciences, Bill & Melinda Gates Foundation
- **Ibrahim Mayaki**, PhD / CEO, NEPAD Agency
- **Trevor Mundel**, MD, PhD / President, Global Health Division, Bill & Melinda Gates Foundation
- **Paul Stoffels**, MD / Executive Vice President, Chief Scientific Officer, Johnson & Johnson
- **Phil Thomson** / President, Global Affairs, GlaxoSmithKline
- **Nelson Torto**, PhD /Executive Director, The African Academy of Sciences
- **Sir Andrew Witty** / Former CEO, GlaxoSmithKline

## Building African and international backing for CARI

Through the **Partnerships, Advocacy & Public Relations Working Group**, led by Nelson Torto, Executive Director of The AAS, CARI has been introduced to large and varying audiences where it has received the backing of a wide range of stakeholders, including the annual South African Science Forum, whose contributions are being synthesised into a business case for the platform. This Group exists primarily to elevate the health & development R&D policy dialogue in Africa in order to significantly increase the level of investment in health and development R&D over the next decade.

## Making the case for CARI at the World Economic Forum

CARI figured prominently at the World Economic Forum in Davos in January and was again presented at the WEF South Africa in May 2017. It was also featured at the Science Forum South Africa in December. These provided a high-profile platform to build a case for CARI among policymakers, business people and philanthropists whom CARI seeks to align to direct resources, focus, and mindshare to R&D.

## Securing investment in African R&D

CARI has secured funding to operationalise the platform and conduct scoping studies, accessing funding opportunities from the private sector through the Pharma Working Group led by Paul Stoffels, chairman of Johnson & Johnson, and through the Bill & Melinda Gates Foundation. This Group has invigorated CARI by providing a space for pharmaceuticals to work together in pre-competitive collaboration. It seeks to facilitate stronger collaboration among

African scientific institutions and the global pharmaceutical industry to create health solutions, initially by conducting a clinical research and translation inventory, mapping Africa's commercial science capacity, and identifying ongoing programmes, gaps and opportunities for investment. The inventory will inform priority investment areas for African R&D to maximise impact by focusing on areas of greatest opportunity for the Continent. It has already revealed the need to extend clinical and translational research to address leading non-communicable causes of death, such as ischaemic heart disease and stroke, in addition to tuberculosis and malaria. The inventory will have a lasting impact on a transformed R&D ecosystem and thereby on the lives of African people.

A second scoping study by researchers at the London School of Economics has been funded by Wellcome to identify best practice mechanisms for biomedical R&D development, assessing their ability to attract investment, as well as geographic efficacies in supporting R&D.

In November, the BMGF awarded The AAS a grant of \$150,000 to support CARI advocacy work over the next two years. This investment seeks to boost the efforts to increase research and development funding and the broader African scientific agenda with key stakeholders on the continent and around the world. The investment covers several activities, in the form of advocacy and increased awareness, that will seek a greater political and resource mobilisation for R&D in Africa. In addition, it seeks to facilitate greater focus, at a global level, on the importance of R&D for Africa's sustainable development.

## Timeline of implementation of CARI





# Communication Snapshot

The AAS ran a social media campaign using the hashtag #Africanwomeninscience, which invited women and male scientists to share

stories about inspirational women scientists on the International Day of Women and Girls in Science in February.

Sample tweets are below:



Close to  
**120,000**  
visited The AAS  
website driven by the  
combined use of email alerts  
from the online newsletter,  
social media and google  
searches.

The AAS was  
mentioned in  
**354 articles**  
with a potential reach of  
**60 million users**  
across the globe  
148 of which were from media  
articles generated due  
to media engagement  
by the AAS.

# Delivering Think Tank Functions

Activities of the think tank unit comprised:

## Strategic plan development

The development of a strategic plan for the think tank unit to be implemented between 2018-2022 is currently under review.

## Translation of research to policy workshop

The one-day workshop offered training at the 2017 DELTAS Africa AGM to 60 DELTAS Africa trainees from the 11 programmes to improve their skills in translating research into policies and improving uptake in policymaking processes.

## Identifying gaps in science, technology and innovation in Africa

The AAS hosted research fellow Stefan Skupien from WZB Berlin Social Science Center in Germany in November and December. Skupien conducted an analysis of the data from a survey done by The AAS in 2016 to identify challenges and opportunities in science, technology and innovation in Africa. The analysis will contribute to the drafting of policy documents and briefs that will assist nations, RECs and the AU in implementing its STISA 2024 strategy, to help Africa achieve Agenda 2063.

## India-Africa collaboration

In April 2017, The AAS participated in an expert group meeting to define specific activities for the India-Africa Health Sciences collaboration, created as a follow up to the Third India Africa Forum Summit attended by heads of states in

2015. The AAS was selected as chair and lead for the pharmaceuticals group, which developed a concept note currently seeking funding. The Africa India Mobility Fund stems from discussions held at this meeting.



*Participants at a meeting on urban preparedness and resilience organised by The AAS and Chatham House in London*

## Africa Health Research and Innovation Strategy (AHRIS) Technical Working Committee Meeting

The AAS participate in the Technical Working Committee for AHRIS. In 2017, a meeting was held in Ghana to refine the draft strategy, which will be incorporated into the AU's Africa Health Research Strategy.

## The AAS and UK Collaboration on Development Science

The AAS provided input into the UK Collaborative on Development Science report on best practices and coherence for major funders of international development research in the UK. The report outlines different models and practices funders can implement to support equity in research partnerships – ranging from agenda setting and research management to benefit-sharing of the outcomes of research.



2017 AAS Affiliate Caroline Ngugi

## The AAS and IAVI

The AAS and IAVI are collaborating to improve the understanding of the challenges and opportunities that women face in STEM. Under this partnership, The AAS will carry out a study on factors which contribute to or inhibit the participation of women in STEM fields in Africa. It will be the first of its kind to identify gender factors affecting women in STEM in Africa. The study will identify the correlations among discipline, stage of career, geographies and inhibiting and facilitating factors, and will provide policy recommendations to address the identified challenges.

## Africa Beyond 2030: Leveraging Knowledge and Innovation to Secure Sustainable Development Goals

In 2017, The AAS drafted a report on the role of science, technology and innovation in achieving Sustainable Development Goals (SDGs). The report, titled *Africa Beyond 2030: Leveraging Knowledge and Innovation to Secure Sustainable Development Goals*, was recently published and can be found at [www.aasciences.ac.ke](http://www.aasciences.ac.ke)

# Human Resources and Operations

The AAS prioritised staff development through:

- Recruitment of nine additional staff members to support programmes, executive, operations and finance. This increased The AAS staff complement to 43 in 2017 from 33 in 2016. This is the net resignation over the course of the year of GC Africa Programme Manager Evelyn Gitau, The AAS Programme Manager Benjamin Gypampoh and Business Development Manager Sylvia Mukasa
- Improved medical benefits
- Deployment of a Human Resources Information System (HRIS) being implemented in phases for completion in 2018. The system will allow staff to apply for leave online and manage performance and payrolls, among other functions
- A successful organisational review and job evaluation completed and with implementation planned for early 2018
- A revamp of The AAS office to create an enabling working environment, a shared sense of belonging for staff and a vibrant brand.

The AAS is also planning to continue to develop its campus in Nairobi to offer world class facilities, including a conference centre.

## Constitution review

The AAS constitution review took effect with the input of different stakeholders while complying with the NGO Coordination Board of Kenya.

## ICT

Activities covered:

- An upgrade to Cisco IP Telephony System which replaced the old analogue telephone system. This has reduced operating expenses, improved communication, integrated to PC Systems and increased productivity.
- Launch of the Community of Practice to provide a space for The AAS-affiliated researchers to network and collaborate
- Migration of the aasciences.ac.ke and aesa.ac.ke web hosting and domain name hosting from Treeline Software UK and Kenet Kenya to one provider, Deep Africa Kenya
- Deployment of Sophos End Point Protection, a state of the art anti-virus solution.



## Other Key Events

### Solar Radiation Management

For the last six years, the Solar Radiation Management Governance Initiative (SRMGI), an international non-governmental organization, has led the world in expanding the conversation around solar radiation management to developing countries. With a focus on the issue that will define how solar radiation management develops in the immediate future – the governance of research – SRMGI has run engagement meetings in 12 different countries, in partnership with 20 local organisations including NGOs, science academies and universities. By building the capacity of people in developing countries to work on SRM research and governance, SRMGI is creating the conditions for more equitable, open, and informed consideration of the merits and drawbacks of SRM.

In June 2017, The AAS hosted a successful SRM workshop in Nairobi that brought together scholars, practitioners and students from various institutions in Kenya and beyond. The event received significant media coverage, in Kenya and abroad.

### Lindau Nobel Laureate Meetings

The AAS in partnership with the Council for the Lindau Nobel Laureate Meetings and the Foundation Lindau Nobel Laureate Meetings, signed an MoU to support the participation of early career African scholars at the Lindau Nobel Laureate Meetings. The meetings rotate among the three Nobel Prize disciplines of Chemistry, Physics and Physiology and Medicine. There is an interdisciplinary meeting revolving around the three natural sciences every five years and a meeting on Economic Sciences held every three years.

The AAS sent early career scientists to the Lindau meetings for the first time in 2017. One group attended the 67th Lindau Nobel Laureate Meeting dedicated to Chemistry in June, another group attended the 6th Lindau Meeting on Economic Sciences in August.

Participants reported that they were inspired and appreciated the opportunity to interact with Nobel Laureates at the prestigious meeting and discuss their research with peers.



*Eleni Yitbarek (right) at the 6th Lindau Meeting on Economic Sciences*

## The AAS Nominees at the Lindau Meetings in 2017

67 <sup>th</sup> Lindau Nobel Laureate Meeting dedicated to Chemistry: 25 – 30 June 2017				
Name	Nationality	Gender	Institution	Research Area of Interest
Ousmane Ilboudo	Burkina Faso	Male	University of Ouagadougou, Burkina Faso	Applied Analytical Chemistry
Blaise Kimbadi Lombe	Democratic Republic of the Congo (DRC)	Male	University of Wuerzburg, Germany	Natural Products Chemistry
Marian Asantewah Nkansah	Ghana	Female	Kwame Nkrumah University of Science and Technology, Ghana	Environmental chemistry
Collins Obuah	Ghana	Male	University of Ghana, Ghana	Catalysis and Bioinorganic Chemistry
John Onyango Adongo	Kenya	Male	Helmholtz Zentrum Berlin, Germany	Surface Modification by Electrodeposition of Metal Ion Chelates
Nolwazi Nombona	South Africa	Female	University of KwaZulu-Natal, South Africa	Electrochemistry and nanotechnology
Sarah D'Souza	Zimbabwe	Female	University of the Western Cape, South Africa	Nanoparticles, Marine natural products, Phthalocyanines
6 <sup>th</sup> Lindau Meeting on Economic Sciences: 22 – 26 August 2017				
Samar Abdelmageed	Egypt	Female	The British University in Egypt	Economics, Finance, Business Administration and Statistics
Eleni Abraham Yitbarek	Ethiopia	Female	University of Pretoria, South Africa	Measurement of poverty dynamics & social mobility

*“Hearing how the Laureates won their Nobel Prizes and what they’ve been doing since was inspirational and surprising. Some attributed their prize-winning work to serendipity! What made the meeting very special for me was that the Laureates emphasised that you should have a full life. In addition to family, academia and sitting on major board committees, most are involved in humanitarian efforts across the globe. After listening and chatting to them and hearing how they have been able to better so many lives, I feel motivated to make a difference in my small part of the world”* **(Sarah D’Souza, 67th Meeting on Chemistry).**

### **The AAS and Chatham House**

2017 saw the strengthening of ties between The AAS and Chatham House, a leading policy think-tank based in London. In December 2017, The AAS in collaboration with Chatham House and Sandia National Laboratories convened a meeting of key players in African countries to discuss the best way forward to build capacity for urban preparedness and resilience in the context of biological threats – including bioweapons use, natural outbreaks and biohazards – in high-risk African cities, such as: Abuja and Lagos (Nigeria), Accra (Ghana) and Johannesburg and Cape Town (South Africa). The meeting, which was held in London, was attended by 30 experts from across the globe.

### **The AAS and African Innovation Foundation MOU signing ceremony and roundtable**

The African Innovation Foundation (AIF) signed a Memorandum of Understanding (MoU) with The AAS in Nairobi in November to create more value and

enhance cooperation, interaction, and knowledge sharing in Science, Technology and Innovation in Africa. The agreement was signed by Ambassador Walter Fust, Chairman of the Board, AIF, and Prof Felix Dapare Dakora, President of The AAS, at a ceremony preceded by a roundtable on Catalysing African Innovations into Sustainable Enterprise.

### **Science Forum exhibition**

The AAS exhibited at the Science Forum to promote awareness of the Academy. The Science Forum is organised by South Africa’s Department of Science and Technology every year and draws close to 2,000 participants. The DST awarded The AAS with a Science Diplomacy Award for advancing African regional cooperation, integration and development at the event.

## Finance

Statement of income and expenditure and other comprehensive income  
For the year ended 31 December 2017

	Notes	2017	2016
		USD	USD
Restricted grant income	4	20,849,401	17,251,913
Unrestricted grant income	5	145,220	400,000
Other income	6	<u>442,955</u>	<u>668,829</u>
Total Income		<u>21,437,576</u>	<u>18,320,742</u>
Expenditure			
Programme expense	7	16,410,580	13,755,660
Employment Costs	8	1,510,240	1,258,659
Other administrative expenses	9	<u>3,228,206</u>	<u>2,857,757</u>
Total Expenditure		<u>21,149,026</u>	<u>17,872,076</u>
Surplus for the Year before tax		<u>288,550</u>	<u>448,666</u>
Income Tax	10	(58,640)	(454,165)
Surplus (deficit) for the year		229,910	(5,499)
Other Comprehensive Income			
<i>Exchange differences on translation of endowment investment to presentation currency</i>		<u>(99,361)</u>	<u>-</u>
Total comprehensive income for the year, net of tax		<u>130,549</u>	<u>(5,499)</u>

### Notes

1. The Audited financial reports have been approved by the GC
2. The financial reports are prepared on a cash basis with accruals made at year end for provisions relating to the year yet to be paid out.
3. Year 2016-2017 financials were prepared from a Dollar Accounting base.











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