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## The Alliance for Accelerating Excellence in Science in Africa

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### Overview

#### The African Academy of Sciences

The African Academy of Sciences (AAS) is a pan-African organization headquartered in Nairobi, Kenya, with a triple mandate: first, as an honorific society to recognise excellence by honouring African science and technology achievers; second as a think tank for African science and third, as a development-oriented mobiliser of the entire African science and technology community with the fundamental role of facilitating the development of scientific and technological capacity for science-led development in Africa. It is the only continental academy in Africa, enjoying the support and recognition of the New Partnership for Africa's Development (NEPAD) and the African Union as well as several governments and major international partners. The AAS elects Fellows, who are proven science, technology and innovation leaders, policy advisors and thinkers most of whom live and work throughout the continent. The Academy also gives prizes, funds research that is relevant to Africa's challenges, and works with policymakers to develop science strategies.

The current Strategic Plan of the AAS (2013-2018) identifies six STI areas of focus, namely

- Health and Wellbeing
- Climate Change
- STEM (Science, Technology, Engineering and Mathematics)
- Water and Sanitation
- Food Security and Nutritional Wellbeing
- Sustainable Energy

In order to deliver on its strategic goals the AAS has partnered with NEPAD to establish a new platform- **the Alliance for Accelerating Excellence in Science in Africa (AESA)**.

#### AESA

The Alliance for Accelerating Excellence in Science in Africa (AESA) is a new platform for developing science strategies and funding research in Africa. Established by the African Academy of Sciences (AAS) and the New Partnership for Africa's Development (NEPAD), AESA supports the development of research leadership and promotes scientific excellence and innovation to overcome some of Africa's health and developmental challenges.

AESA received US\$5.5 million as seed funding from three global development partners: the Wellcome Trust, the Bill and Melinda Gates Foundation, and the UK's Department for International Development (DFID). NEPAD has also contributed US\$500,000 to the initiative. AESA is using these funds to develop world class capacities through recruitment of key staff, systems, structures and strategies. In January 2015, the African Union Heads of State and Government Summit endorsed the establishment of AESA.

This is an important achievement, as no such political support has been obtained in Africa prior to this for a health sciences platform.

Within a year AESA has moved from a visionary idea to an established platform supported by a core team of staff and with partners who has already made awards to the value of approximately \$100 million. Initially, AESA is primarily serving as an executing partner, running open calls for proposals, facilitating proposal development workshops, managing grants, and mentoring grantees. A think-tank function is also being established, to evolve AESA to become a strategic thought leader, working in partnerships to set and align a programmatic agenda for the continent. Through its activities, AESA seeks to shift the centre of gravity for leadership on Africa's scientific and innovation challenges to the continent itself. AESA will also work with its funding partners to track and evaluate their investments in African science.

## Partnerships

AESA seeks to establish and strengthen partnerships guided by three key areas of focus:

- **People:** support the brightest African scientists with the best ideas through competitive grant award mechanisms in key priority areas of research, and within the R&D pipeline, support career paths from early, mid and eventual senior research leadership roles. Through this platform and the various programs implemented, the platform will attract and encourage the best minds in Africa to work in global public health.
- **Places:** Building scientific capacity and excellence will foster the right environments to attract and retain excellent people.
- **Programs:** support the mobilization of sufficient resources from multiple sources that will sustain adequate funding of STI programs in Africa in order to realise positive impacts in global health and development.

## Wellcome Trust and DFID: Developing Excellence in Leadership, Training, and Science (DELTAS)

The DELTAS programme is an initiative to produce world-class scientific research in health by helping to develop the next generation of African researchers and research leaders. DELTAS was conceptualised as a programme to run from AESA with multiple partners, with initial funding from the Wellcome Trust and DFID. The programme is aimed to support four strategic areas: 1) scientific quality, 2) research training, 3) scientific citizenship, and 4) creating world class research environments. The call was launched in October 2014 and proposals were invited for health-focused scientific programmes addressing the strategic aims. Following the review of 145 eligible preliminary applications and subsequently 30 invited full applications, 18 applicants were invited for interview to the DELTAS Committee meeting, organised in partnership with the Wellcome Trust and adhering to the Trust's rigorous grants funding policies and procedures. This took place in Nairobi from 5-7 May 2015 at the African Academy of Sciences. An independent international expert committee recommended 11 applications for funding, resulting in a success rate for the scheme at 7.5%. The successful applications, summarized in the Annex, span the continent and propose compelling solutions to a wide range of pressing research and health challenges.

### **Grand Challenges Africa**

AESA is working closely with the Gates Foundation to lay the groundwork for a Grand Challenges Africa programme administered through AESA to commence in early 2016. Grand Challenges is a global family of partners and initiatives aimed at focusing research and resources on global health and development challenges. AESA's initial Grand Challenge-related work includes supplemental monitoring and mentoring of existing Grand Challenges grants from USAID, Grand Challenges Canada and the Bill and Melinda & Gates Foundation to accelerate the progress of these investments.

This opportunity will allow Africa to join the Grand Challenges family of initiatives (Grand Challenges Canada, Brazil, India etc.) that are fostering innovation to solve key global health and development problems for the world's poorest people, many of whom are found in Africa.

The Grand Challenges approach will focus attention and effort on key health priority problems in Africa to accelerate research and achieve impact in health and development. Grand Challenges programs are guided by a shared set of principles that GCA will also encompass and embrace, including: 1) defining effective challenges, 2) open calls for proposals with a transparent review process, 3) focusing on impact rather than basic research, 4) active grant management, and 5) global access to products.

### **Accelerating Excellence in Good Financial Grants Management**

An exciting and promising opportunity for the AAS has arisen through engagement with the International Financial Governance Consortium (IFGC), founded in January 2012 by the Medical Research Council (MRC), the European & Developing Countries Clinical Trials Partnership (EDCTP) and the Wellcome Trust. The IFGC had identified a number of financial management challenges that funders and recipients face in sub-Saharan Africa and more generally in low and middle-income countries. The group has unanimously agreed that to create a paradigm shift in financial governance of funded recipients there needs to be a) an agreed framework for the development of excellence in financial grant management that will enable the assessment of the financial management capacity of grant recipients (by funders and the grant recipients themselves) and b) agreed standards that grant recipients can apply to grant funds received. The AAS was identified as the organisation of choice across the funders to implement this vision. This initiative allows AESA to undertake a key mandate to monitor and evaluate financial investments made by AESA partners in supporting African science more effectively.

**Table 1: Summary of applications recommended  
for funding**

<b>Lead Applicant</b>	<b>Title</b>	<b>Lead Institution</b>	<b>Country</b>	<b>Amount Awarded</b>
<b>Dr Samson M Kinyanjui</b>	<b>Initiative to Develop African Research Leaders (Ideal)</b>	<b>KEMRI-Wellcome Trust Research Programme</b>	<b>Kenya</b>	<b>£8M</b>
<p>This initiative is a training programme from intern to postdoctoral level, seeking to attract young graduates of the greatest potential. The programme will provide high quality training and retain outstanding scientists, supporting their development as research leaders within the region and internationally. The programme is underpinned by an approach that emphasises competitive recruitment, supervision, mentorship, infrastructure, multi-disciplinary approaches, transferable skills, clear career paths and strong management As well as strong international collaboration, the programme aims to increase engagement with local universities to develop their capacity to provide high quality environments for researchers trained by the programme.</p>				
<b>Dr Gordon A Awandare</b>	<b>WACCBIP-Wellcome Trust DELTAS Programme</b>	<b>University of Ghana</b>	<b>Ghana</b>	<b>£5.1M</b>
<p>This programme seeks to expand the scope of the research training programme led by the West African Centre for Cell Biology of Infectious Pathogens (WACCBIP) at the University of Ghana, to develop a research training programme in Human Genetics which builds on the experience of H3Africa. It will establish a post-doctoral programme for fellows based in West African institutions including a mentoring system and short courses in research ethics. The strategy is to improve understanding of disease mechanisms for both communicable and non-communicable diseases by incorporating human genetics into the existing pathogen biology research programme. This proposal is supported by a coalition of local, regional and international partners with expertise in human genetics and pathogen biology research.</p>				
<b>Prof Tobias F Chirwa</b>	<b>Sub-Saharan Africa Advanced Training Programme for Leadership and Excellence in Biostatistics</b>	<b>University of Witwatersrand</b>	<b>South Africa</b>	<b>£3.5M</b>
<p>This programme seeks to develop expertise in biostatistics across the continent, in order to facilitate greater use of data from demographic and health surveillance sites and health and demographic surveys and thereby improve health. The strategy is to address the gap in biostatistical expertise in sub-Saharan Africa by developing a training programme in methodological and applied biostatistics for Masters and PhD students; building a network of biostatisticians and statistically informed researchers across nine African countries; and integrating this network within existing statistical societies.</p>				
<b>Prof Alison Elliott</b>	<b>Makerere University UVRI Centre of Excellence for Infection &amp; Immunity Research and Training (MUII-plus)</b>	<b>Uganda Virus Research Institute</b>	<b>Uganda</b>	<b>£4.6M</b>
<p>This programme will consolidate and expand an existing collaboration between Makerere University and Uganda Virus Research Institute (UVRI) to strengthen infection and immunity (I&amp;I) research and training with support from the London School of Hygiene and Tropical Medicine and Cambridge University. The strategy</p>				

is to promote Africa-relevant I&I scientific excellence; provide career training for African I&I research leaders (through a wide range of fellowships covering all levels); utilise and enhance the Makerere & UVRI I&I research environment; and engage in outreach. A particular new focus will be given to bioinformatics and emerging and re-emerging infectious diseases.

<b>Prof Thumbi Ndung'u</b>	<b>Sub-Saharan African Network for TB/HIV research Excellence (SANTHE)</b>	<b>University of KwaZulu-Natal</b>	<b>South Africa</b>	<b>£7.3M</b>
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This programme will develop a network focused on training scientific researchers in HIV and TB infection in four institutions. Led by KwaZulu-Natal Research Institute for TB and HIV (K-RITH) it would develop a partnership with the Rwanda-Zambia HIV Research Group (RZHRG), the KEMRI-Wellcome Trust Research Programme (KWTRP), and the Botswana-Harvard AIDS Institute Partnership (BHP). The strategy is to expand on a leading HIV and TB research programme spanning basic, clinical and translation research; develop a programme across all institutional partner sites to equip researchers with relevant knowledge and research skills; facilitate a strong institutional network for research excellence through the provision of pilot grants and establish a programme in clinical research and community engagement.

<b>Dr Dickson Chibanda</b>	<b>AMARI: African Mental Health Research Initiative</b>	<b>University of Zimbabwe</b>	<b>Zimbabwe</b>	<b>£4.1M</b>
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This programme seeks to provide fellowships for mental health researchers in Ethiopia, Malawi, South Africa and Zimbabwe, with the aims of developing effective and appropriate treatments for mental, neurological and substance use disorders and supporting the integration of MNS research within existing public health programmes. The strategy is to train research fellows from multidisciplinary backgrounds; build leadership skills focusing on management and mentorship; develop strategies for advocacy and systems change within each country and develop a support platform for training, supervision and networking. This programme focuses on the very important topic of mental, neurological and substance disorders, and on producing research that will help to address the major gaps in access to treatment in sub-Saharan Africa.

<b>Prof Abdoulaye Djimde</b>	<b>Developing Excellence in Leadership and Genetic Training for Malaria Elimination in Sub-Saharan Africa (DELGEME)</b>	<b>University of Science Techniques and Technologies of Bamako (USTTB)</b>	<b>Mali</b>	<b>£5.5M</b>
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This programme is driven by the leaders of the African Plasmodium Diversity Network (APDN) which includes research and academic institutions from fifteen countries in sub-Saharan Africa. The main aims of the proposed training programme are to i) train, retain and develop graduates, doctoral and post-doctoral fellows on genomics and bioinformatics across malaria endemic countries and ii) develop programs to enhance the understanding and dissemination of genetic data relevant to malaria intervention and eradication programmes. The Malaria Research and Training Center (MRTC) within USTTB is a leading research and training centre on malaria in sub-Saharan Africa. It is partnering with; the Medical Research Council (MRC) Gambia, the National Institute for Medical Research (NIMR) in Tanzania, the United States Army Research Unit- KEMRI, the Noguchi Memorial Institute for Medical Research (Noguchi), the Bernhard-Nocht Institute for Tropical Medicine (BNITM) and the Faculty of Medicine of the Universite des Sciences de la Sante (USS) of Libreville.

<b>Prof Oumar Gaye</b>	<b>Malaria Research Capacity Development in West and Central Africa</b>	<b>Universite Cheikh Anta Diop de Dakar</b>	<b>Senegal</b>	<b>£TBD</b>
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This programme will provide PhD and early and senior post-doctoral fellowships in areas of research of relevance to malaria elimination efforts West and Central Africa, and to improve institutional environments through specific activities. The strategy is to integrate individual training projects within existing research

programmes in the following areas: the emergence of insecticide and drug resistance; changing malaria epidemiology; the maintenance of transmission by hotspots; and the cost-effectiveness of interventions. This application builds on the achievements of the Malaria Capacity Development Consortium (MCDC) and the Gates Malaria Partnership (GMP) but shifts the leadership of the programme from London to Dakar and focuses on providing research and training activities in five countries (Senegal, Mali, The Gambia, Cameroon and Ghana). This programme is led from Université Cheikh Anta Diop (UCAD) in Senegal with support from partner institutions in the region and in Europe.

<b>Prof Bassirou Bonfoh</b>	<b>Afrique One-African Science Partnership for Intervention Research Excellence (Afrique One-ASPIRE)</b>	<b>Centre Suisse De Recherches Scientifiques - Cote D'ivoire (CSRS)</b>	<b>Ivory Coast</b>	<b>£TBD</b>
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The Afrique One-ASPIRE programme will expand research capacity in sub-Saharan Africa (SSA) through a structured programme of scientific training across five Thematic Training Programmes (TTP) with a focus on endemic zoonoses. The programme focuses on the animal-human-environment interface and links a group of seven core African institutions (across both East and West Africa) with two European institutions and an additional seven collaborating African institutions.

<b>Prof Alex Ezeh</b>	<b>Consortium for Advanced Research Training in Africa+ (CARTA+)</b>	<b>African Population &amp; Health Research Centre</b>	<b>Kenya</b>	<b>£TBD</b>
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This programme will support the development of a critical mass of researchers working in research-supportive environments to improve public and population health in Africa. CARTA+ seeks to maintain the pipeline of high-quality doctoral candidates and graduates, institutionalise aspects of CARTA to sustain its impact, and foster career paths for the best fellows through post-doctoral positions and a range of mentorship and support. The CARTA+ programme is co-led by the University of the Witwatersrand, South Africa (Wits) and partners with four African Universities (University of Malawi, Moi University, University of Ibadan and Makerere University); three research institutes (Agincourt Centre, Ifakara Health Institute, KEMRI-Wellcome Trust); and five Northern Partners (University of Warwick, University of Gothenburg, Canadian Coalition for Global Health Research, Swiss Tropical and Public Health Institute (Swiss TPH) and Umea University).

<b>Prof Nelson Sewankambo</b>	<b>THRIVE to Research Excellence (THRIVE-2)</b>	<b>Makerere University College of Health Sciences</b>	<b>Uganda</b>	<b>£TBD</b>
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THRIVE-2 builds on the THRIVE consortium, which was funded through the Wellcome Trust African Institutions Initiative (AII). THRIVE aimed to build a regional network of research excellence, with support from two leading UK universities (London School of Hygiene and Tropical Medicine (LSHTM) and the Cambridge University (CU)). THRIVE-2 focusses this regional collaboration on six regional partners: Makerere University, the International Centre for Insect Physiology and Ecology, Kenya (icipe), the National Institutes for Medical Research, Mwanza Tanzania (NIMRI), Kilimanjaro Christian Medical University College, Tanzania (KCMUCo), Gulu University, Uganda (GU) and Uganda Virus Research Institute, Uganda (UVRI). THRIVE-2 aims to focus on the creation of research leaders from PhDs and post-doctoral fellows and the following emerging research strengths: infectious diseases/neglected tropical diseases, maternal, neonatal and reproductive health and non-communicable diseases.