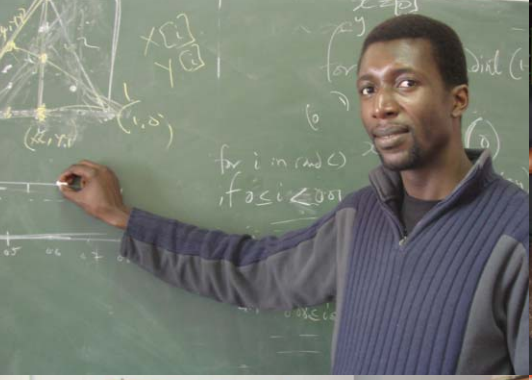
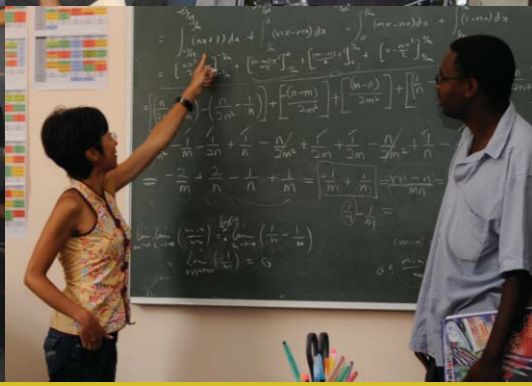
The African Institute for Mathematical Sciences (AIMS)

AIMS
African Institute for Mathematical Sciences
NEXT EINSTEIN INITIATIVE

EXCELLENCE • RESPECT • PAN-AFRICANISM • INTEGRITY



Who we are

The African Institute for Mathematical Sciences (AIMS) is a pan-African network of centres of excellence for post-graduate training, research and public engagement in mathematical sciences. We enable Africa's brightest students to become innovators that propel scientific, educational and economic self-sufficiency.

Vision:

Our vision is to lead the transformation of Africa through innovative scientific training, technical advances and breakthrough discoveries which benefit the whole of society.

Mission:

Our mission is to enable Africa's brightest students to flourish as independent thinkers, problem solvers and innovators capable of propelling Africa's future scientific, educational and economic self-sufficiency.

Values:

EXCELLENCE • RESPECT • PAN-AFRICANISM • INTEGRITY

Our Genesis

We believe that the next Einstein will be African and that he or she will develop solutions that will cross borders and change lives.

The first AIMS centre was created by South African-born physicist Neil Turok in 2003 to transform higher education in Africa by using mathematical sciences to tackle global challenges. Neil and AIMS' supporters are driven to uncover Africa's own Einstein. We believe Africa can become a world-leading continent but only if its young people become innovators, using their minds to advance human society and their continent.

"The only people who can fix Africa are talented young Africans. By unlocking and nurturing their creative potential, we can create a step change in Africa's future.""

Neil Turok, AIMS Founder, TED Talks 2008

Mathematical science's applications range from modelling, optimization, statistics, big data and machine learning (artificial intelligence) that can be applied across all sectors: urban planning, communications, transport, energy and health, to describing the tiniest subatomic particles we know of, like Higgs boson or indeed the entire cosmos. It underlies every modern technology. Yet, it is completely cross-cultural and free to share. Applied math is a foundation for the growth of science, technology and development across Africa. AIMS focuses on training, research and public engagement to apply science as a tool for socio-economic development in Africa.

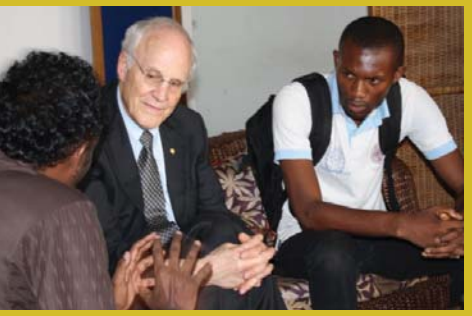
"AIMS is re-inventing the university for the 21st century with its approach and a curriculum that aligns education and development."

Thierry Zomahoun, President and CEO

The United Nations Educational, Scientific and Cultural Organization (UNESCO) has certified and endorsed AIMS as the first and only network of centres of excellence for Mathematical Sciences in Africa, propelling AIMS into the global dialogue on Science, Technology, Engineering and Mathematics (STEM) education for development.

As of 2015, we have centres of excellence in South Africa, Sénégal, Ghana, Cameroon and Tanzania. The AIMS Next Einstein Initiative (AIMS-NEI) is working to establish 15 centres of excellence across Africa by 2023.

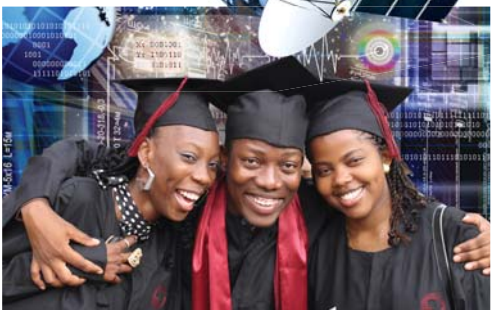
Attracting the best academic minds including Nobel Laureates and Fields Medallists



David Gross, Nobel Laureate 2004.

Klaus von Klitzing, Nobel Laureate 1985.

Cedric Villani, Fields Medal 2010.



Global science cooperation is needed to address global challenges. From 1996 to 2012, Africa's scientific research output tripled. Whether modelling for climate change adaptation, anticipating future food and water shortages, or tracking and stopping public health emergencies such as Ebola, local solutions require local experts with strong mathematical science skills.

Investing in AIMS is an investment in Africa's future prosperity. A more prosperous continent means not only having highly-skilled partners in Africa with whom businesses can collaborate and trade, but it also enhances global stability and security. A more prosperous Africa will grow into the world's most important consumer market by mid-century as Africa is poised to be home to 40 per cent of the world's young people by 2050.

Recent advancements in computational science, big data, statistics and business analytics have bolstered the $4.7 trillion global telecommunications and the $3.5 trillion global information sectors. These developments are driven by ever more powerful computers, the information expansion and the prevalence of complex algorithms. Mathematical sciences is at the fulcrum of these fields in particular, and of society in general, with its prominence growing more substantial every day.

Achievements

Leveraging our donors' investments

At AIMS, we recruit the best and brightest minds from across Africa. Many come from difficult circumstances, unstable regions or discouraging environments. Without the program, many of our graduates would be unable to offer the contribution that they now do. Sixty per cent of our graduates remain in Africa and that number rises each year.

- AIMS' annual output has increased dramatically from 55 graduates in 2010 to 220 highly skilled mathematical scientists working across industry, academia and government, motivated to solve Africa's challenges. They are internationally recognized researchers and skilled innovators in energy, agribusiness, manufacturing and healthcare.
- AIMS is bridging the skills gap. By 2015, AIMS produced 960 graduates from 42 African countries, including 31% women with plans to increase this number by half, transforming the face of math and science experts and confirming that women are critical to innovation and solving global development challenges.
- Two thirds of AIMS graduates are pursuing PhDs in Africa; 131 are teaching at universities in 26 African nations, becoming academic leaders in math and science to future generations, our AIMS scholars abroad even prioritize their research on African challenges such as Ebola, Malaria and HIV.

As a 2013/2014 Islamic Development Bank Merit Scholarship winner, Sudanese computer scientist **Eltayeb Elbushra Ahmed**, is earning his PhD from the University of Sussex and University College of London. He is investigating improved models to track patient treatment from medical records, revolutionizing health care across Africa.

Tabitha Mundia of Kenya developed *MKesho*, the world's first ever mobile money statistical scorecard that the Equity Bank used to grant credit to people who couldn't access a bank. In 2012 she joined the International Finance Corporation (IFC) at in Washington DC. She is a quantitative risk analyst who uses mathematical tools to achieve the vision of the IFC: the end of extreme poverty by 2030.

Chika Yinka-Banjo from Nigeria, was the 2013 recipient of the prestigious L'Oreal-UNESCO Sub-Saharan Africa Fellowship Award for Women in Science. She is using mathematical science to develop robots that improve the safety of mining practices.

AIMS has 75 alumni from Sudan (40 women), the second highest country of origin for our alumni. **Zakariya Mohammed** is one of nine AIMS alumni lecturing at the University of Khartoum. He is also the Head of the Statistical Consulting and Research Services Unit at Northern Border University.

Dr. Antoine Tambue, a Cameroonian and AIMS Alumnus 2007, is an African Research Education and Teaching Excellence (ARETÉ) Chair. ARETÉ offers scientists overseas, the chance to return to Africa and contribute to growth through discoveries and teaching. He is working to precisely forecast energy production in oil, gas and geothermal reservoirs and predict the spread of pollution in groundwater reservoirs.

Cameroonian **Martial Ndeffo Mbah** is a research scientist at the Yale School of Medicine. In 2014, his work was supporting the Liberian Government in fighting Ebola through transmission models designed to prevent its spread. He has also been exploring the prevention of schistosomiasis in women to decrease the spread of HIV in Africa.

AIMS in the Lab

Research at AIMS is leading with discoveries that promote prosperity. We encourage freedom and applied, development-driven science that will impact humanity; support local and global projects; and forecast and respond to emerging challenges and opportunities.

- AIMS has a robust Global Research Chair Program hosting six Research Chairs in cosmology, physical biosciences, mathematical finance and scientific computing
- The AIMS ARETÉ Junior Chairs Program with the Bosch Foundation provides seed funding to African scientists to return to Africa to conduct their research and contribute to Africa's growth.
- The AIMS ***Research for Africa*** program with the IDRC debuted in 2014 with five targeted grants, to catalyze, strengthen and grow the current research projects through more postgraduate opportunities for alumni and students, these grants are in applied/interdisciplinary or industry research geared to commercialization.
- AIMS scholars have been published or cited in peer-reviewed science journals 305 times in the past five years.

Government and Institutional Support

AIMS has attracted various donors committed to science for development in Africa including:

- $20 million (CAD) from the Government of Canada (including $2 million from IDRC)
- $26 million (CAD) from the UK government
- €5 million (EUR) from the German government
- €2.6 million (EUR) the Robert Bosch Foundation
- $25 million (USD) from The MasterCard Foundation
- $2 million (USD) from Google

In addition, the governments of South Africa, Sénégal, Ghana, Cameroon and Tanzania have all committed to provide long term patronage to AIMS centres in their countries.

This support represents only a small portion of what is needed to sustainably develop the homegrown workforce and scientific capacity that will affect major change across the continent.

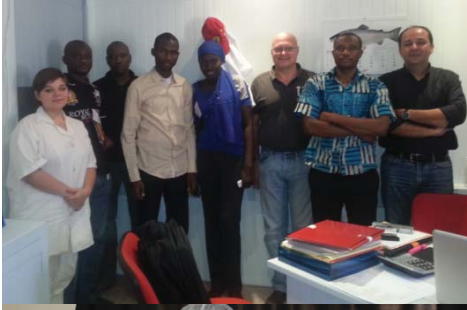
Robert Bosch Stiftung Canada

DAAD Google Alexander von Humboldt Stiftung/Foundation

IDRC CRDI The MasterCard Foundation SCHOLARS PROGRAM UKaid from the British people

AIMS in the field and around the globe

- AIMS is contributing to global science, technology, engineering and mathematics (STEM) dialogue at forums such as the Canada-Africa Business Summit, the Sixth Ordinary Session of the Conference of Ministers of Education of the African Union, International Economic Forum of the Americas and the World Economic Forum on Africa resulting in new partnerships with the African Development Bank, the African Union, and the World Bank.
- The Canadian Department of Foreign Affairs, Trade and Development is exploring projects with AIMS for women in science and maternal, newborn, and child health.
- AIMS has expanded to three advancement chapters (Canada, UK and Germany) to raise awareness, fundraise and build relationships with global stakeholders and a Global Secretariat that coordinates and ensures quality, transparency, growth and unified governance across the Network.



AIMS African Institute for Mathematical Sciences NEXT EINSTEIN INITIATIVE CANADA

AIMS African Institute for Mathematical Sciences NEXT EINSTEIN INITIATIVE UNITED KINGDOM

AIMS African Institute for Mathematical Sciences NEXT EINSTEIN INITIATIVE GERMANY

Partnering with Industry

The AIMS Industry Initiative strengthens Middle Eastern, North American, European and African enterprises through employment and career skills enhancement of students and alumni.

- Communitech, General Electric, Group Sonatel, IBM, Nestlé Group, ThoughtWorks and the World Wide Web Foundation are partners
- The MasterCard Foundation invested in a Co-op program for 80 scholars providing work-based learning opportunities and career pathways, the pilot program modelled on the University of Waterloo's renowned Co-op program was launched in Sénégal in 2015.

AIMS African Institute for Mathematical Sciences INDUSTRY INITIATIVE

Be the solution

Corporations looking for the right philanthropic initiative can be part of the solution with AIMS. Your organization can be part of transformative change at home and internationally and encourage global goodwill with modest investments in building and supporting the AIMS network.

AIMS graduates, through the AIMS Industry Initiative, are a pool of professional talent that organizations can use to meet their human capital and research and development challenges. Industry can also partner with the Industry Initiative to take advantage of the skills and competencies offered by AIMS graduates. As African economies continue to develop, diversify and transform, companies that partner with AIMS make a strategic investment in what many economists have dubbed "the continent of the 21st century.

Join us in recruiting the best international professors and funding AIMS Master's-level training, mathematics teacher training and local research, so as to ensure Africa's successful transformation.

OPPORTUNITY	LEVEL OF SUPPORT
Fund an AIMS Centre for 1 year	**$3.75 million USD**
Fund a Research Chair for 4 years	**$2 million USD**
Fund a Research lab within AIMS (1 year initial start-up)	**$250,000 USD**
Co-op Master's Program Scholarship	**$75,000 USD**
Fund a centre Computer Lab	**$55,000 USD**
Full Master's Student Scholarship	**$48,000 USD**
Research Scholarship for junior researcher	**$30,000 USD**
Scholar International Exchange Program Research Grant	**$4,000 to 30,000 USD**
Research Grant	**$20,000 to 50,000 USD**
Tutor	**$20,000 USD**
Fund a scholar's annual tuition, or fund the infrastructure behind the student (laptop, tutors, facility), or support the Co-op Masters Program Bursary	**$18,000 USD**
Fund a scholar's board, lodging and travel expenses for a year	**$12,000 USD**
Fund a Centre Library for 2 years, or fund an International Guest Lecturer for 3 to 6 weeks, or fund a Post-AIMS Bursary	**$5,250 USD**

NEXT EINSTEIN FORUM

8-10 March 2016 | Dakar, Senegal

Connecting Science to Humanity

An AIMS initiative in partnership with Robert Bosch Stiftung

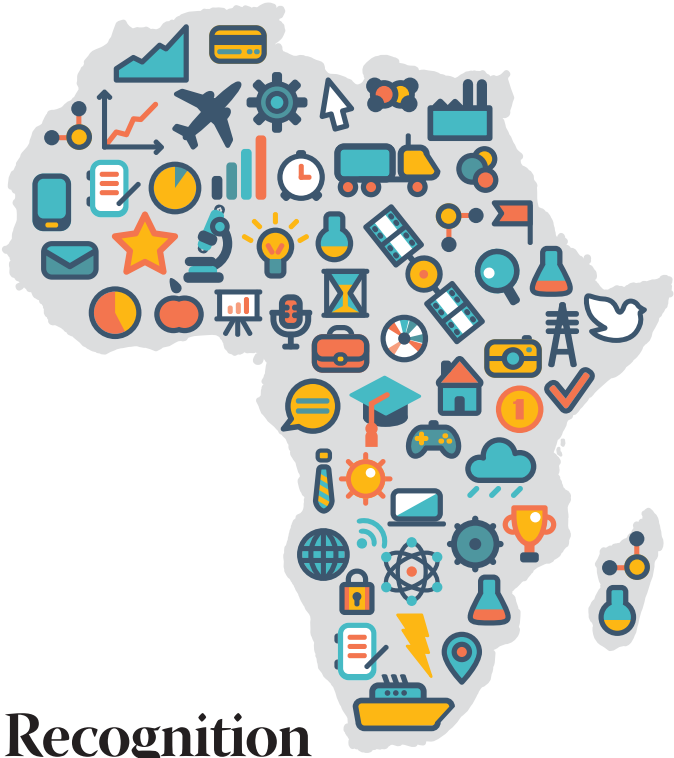
Next Einstein Forum Supporter Opportunities

The Next Einstein Forum (NEF), an AIMS initiative in partnership with the Robert Bosch Stiftung, is a new global forum for science in Africa that will propel Africa onto the global scientific stage.

The NEF will unite more than 500 outstanding thinkers and distinguished stakeholders from around the world together in Africa. NEF Global Gatherings, held every second year, will showcase 15 of Africa's top young scientists and connect them with leaders from Africa and the rest of the world in high-profile, invitation-only forums. These leading scientists, policy-makers, business people, journalists, civil-society representatives and entrepreneurs will highlight breakthrough discoveries and catalyze scientific collaboration for human development.

To be held in Sénégal as a 3-day event from 8 to 10 March 2016, the first NEF Global Gathering will focus on the 3 pillars – Science, Society and Humanity.

OPPORTUNITY	LEVEL OF SUPPORT
Institutional Supporter	**$1 million USD**
Title Supporter	**$500,000 USD**
Platinum Supporter	**$100,000 USD**
NEF Membership – 3 years	**$30,000 USD**
Gold Supporter	**$20,000 USD**
Exhibition Booth	**$5,000 USD**



Recognition

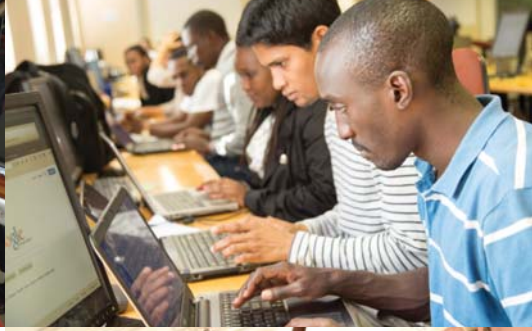
Your decision to invest in AIMS and the future of Africa will be your opportunity to participate in the transformation of Africa into a thriving, stable, secure and prosperous community of nations where its best and brightest minds provide the advanced discoveries that propel the future.

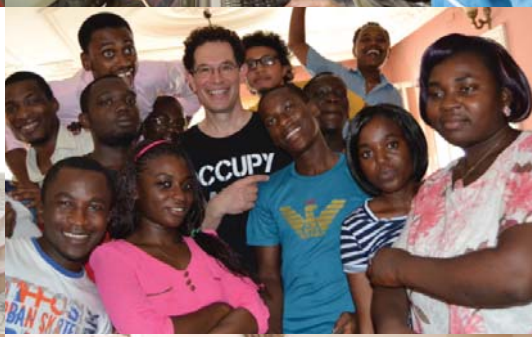
Be among the first to lead the next technological revolution that brings change through quantum technology and innovative space science and telecommunications. Encourage a burgeoning generation of young minds to apply mathematical sciences solutions to practical development challenges across the globe.

In return, you will partake in naming opportunities, public engagement activities, high profile special events and strategic marketing opportunities. Position your organization as a global influencer in science education, innovation, knowledge sharing and human capital development in the world's next hub of discovery.

Grow your reputation as a leader in inspired investment in the next emerging region for growth, trade and wealth generation.

Partner with AIMS to support the creation of a generation of young scientific leaders who will change the world and help us find the next Einstein in Africa.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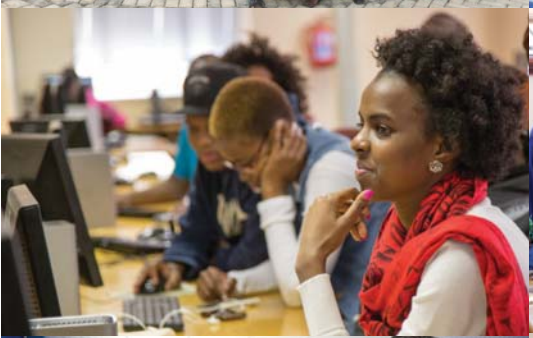



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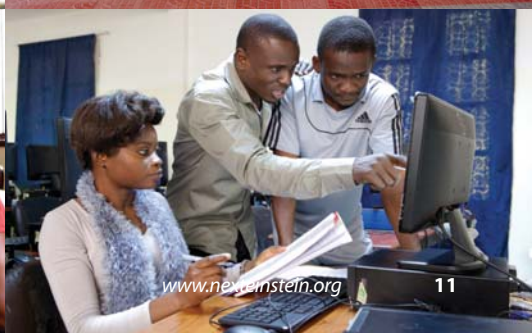

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AIMS | African Institute for Mathematical Sciences CAMEROON

AIMS | African Institute for Mathematical Sciences SENEGAL

AIMS | African Institute for Mathematical Sciences GHANA

AIMS | African Institute for Mathematical Sciences SOUTH AFRICA

AIMS | African Institute for Mathematical Sciences TANZANIA

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