



**AIMS
NEI**

**African Institute for
Mathematical Sciences
NEXT EINSTEIN INITIATIVE**

June 2013

AIMS Network News

NOTE FROM THE EXECUTIVE DIRECTOR

Celebrating a working model for Africa

The last decade has been a time of tremendous transformation at AIMS. We began as a dream, a simple hope that scientific and mathematical prowess would be acknowledged and nurtured in African youth. To date, we have trained over 450 students from 35 African countries, and have moved beyond a single centre to a network of Pan-African Centres in Ghana, Senegal and South Africa.

In ten years, AIMS has grown from offering a Post Graduate Diploma (PGD), to a fully funded Master's Degree. With this growth, AIMS has realized that it can offer more than training students to enter academia. AIMS plays a key role in African development, and encourages students to find solutions to many of the environmental, social and economic problems on the African continent. AIMS does not just reward those who are highly skilled, but those who have a vision of change.

I am pleased to report, that the media and the global community at large, have begun to catch on to the AIMS scientific revolution, and incorporate it into their own coverage. For example, in March, AIMS was represented at the BBC Africa Science Festival in Uganda. This event included pre-eminent scholars from around the globe. The BBC embraced the idea that the scientific landscape in Africa is drastically changing, and that the AIMS is a key player in that change. They see the AIMS model as futuristic and a huge departure from the status quo at traditional institutions.

Africans leaders such as the President Paul Biya of Cameroon commented on the need for the AIMS model. In his Youth Day speech, President Biya stated: "...the African Institute for Mathematical Sciences is planning to establish a Centre of Excellence in our country to build the capacity of our scientific community. This mark of trust by a prestigious

knowledge institution should not only consolidate our own trust in ourselves, but also spur our youth to choose studies in the scientific and technical fields in which they are naturally gifted."

In May, their Excellencies, the Right Honourable David Johnston, Governor General of Canada, and Mrs. Sharon Johnston were in Ghana for a state visit. During this visit, AIMS-Ghana was actively represented at all events, and the Governor General stressed the important of this AIMS Centre. Likewise, the German Foreign Minister, Dr. Guido Westerwelle, accompanied by a delegation of about 40 people, visited AIMS South Africa in April. In Senegal, the Senegalese Minister of Higher Education and Research, Pr. Mary Teuw Niane, attended an AIMS workshop that exchanged ideas on Differential Geometry and Partial Differential Equations. In another event, Mathematics of Planet Earth 2013, sponsored by the Simmons Foundation, Climate Scientist, Professor Inez Fung from the University of California, Berkeley led a talk on "Climate Math".

The ten-year anniversary and Global Alumni Reunion will be a time to celebrate the achievements of AIMS, alumni, lecturers and partners. We thank you all for your continued support and talent. To you all, I say Wonderful Celebration!

Sincerely,

Thierry Zomahoun



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NETWORK NEWS

Governor General of Canada visits Ghana

From May 13 to 16, their Excellencies, the Right Honourable David Johnston, Governor General of Canada, and Mrs. Sharon Johnston were in Ghana for a state visit.

During the well-publicized 3 day visit, AIMS-Ghana was actively represented at all events by Prof Francis K.A Allotey, founding trustee and Prof. Edward Ayensu, Chairman of the Board of Trustees. The Canadian High Commissioner to Ghana, Her Excellency Mrs. Trudy Kernighan and her husband, were very gracious and ensured that AIMS was represented at all the activities organized for the Governor General. During a state dinner hosted by the president of Ghana, His Excellency John Dramani Mahama, the Governor General noted the importance of AIMS to Ghana. President Mahama in turn thanked the Canadian Government for supporting AIMS with financial assistance. There was a panel discussion at the University of Ghana on the topic "Education and the Role of

Higher Institutions in Promoting Economic Advancement and Development (Ghana)". Honourable Johnston, explained that post-secondary institutions such as universities, colleges and other learning institutions, frequently play a critical role in spurring innovation and generating new ideas and solutions for development. This he said can be done by "developing and building on local, regional and national strengths and expertise."

The Governor General's entourage included Mr. Peter Braid, MP for Kitchener, Waterloo, who has been instrumental in helping AIMS secure the funding from the Canadian Government. In the presence of their Excellencies Hon. Johnston and Mrs.

Sharon Johnston, the Vice President of Ghana, Mr. Kwesi Bekoe Amissah-Arthur and Prof. Francis Allotey, President Mahama reaffirmed his promise to contribute financially to AIMS-Ghana.

"...post-secondary institutions such as universities, colleges and other learning institutions, frequently play a critical role in spurring innovation and generating new ideas and solutions for development. This can be done by developing and building on local, regional and national strengths and expertise."



The Advancement Task Force to Support AIMS Network Initiatives

The Advancement Task Force for the AIMS Network met in Berlin from May 22 – 24, 2013.

AIMS is represented at Africa Day in Canada

government of Canada at the Palais de Congres in Gatineau, near Ottawa, to celebrate Africa Day on May 29, 2013. The event featured special guest Kenneth David Kaunda, the first President of Zambia and past chairperson of the African Union and was attended by ambassadors and diplomats representing more than thirty African nations as well as Canadian Minister for Foreign Affairs John Baird and Minister of Veteran Affairs and Minister of State for La Francophonie

Thierry Zomahoun and Adele Newton, AIMS-NEI Advancement Director for North America joined African ambassadors and officials from the

This meeting brought together the members of the Advancement task force which comprises: the Founder of AIMS, AIMS-NEI Executive Director, the Director of AIMS-South Africa and the Directors of Advancement for Africa, UK, Germany, Nordic European Countries and North America.

The objectives of the Advancement Task Force are to: raise the profile of AIMS through global momentum, develop mid-to-long term strategic partnerships, and increase and diversify funding sources through coordinated fundraising.

Given the challenges common to all start-up organisations, the creation of the Task Force has become necessary as the AIMS network continues to expand across the African continent. With the recent addition of AIMS Ghana and Senegal -and an existing South Africa- we need more resources.

The analysis of the current financial situation of the network helped to identify Task Force priorities for this year, including fundraising for approved budget and restricted funds. Other discussions during the Berlin meeting included new strategies and projects including the Friends of AIMS (a new fundraising strategy) and the creation of the Next Einstein Forum. A key output from this meeting was the creation of a Call for Action: *Smart Investment in Science and Innovation for Development*, which targets governments, policy makers, world leaders and AIMS partners to join AIMS in changing the state of the mathematical sciences on the African continent.

Steven Blaney.

Each country served their national dishes and delicacies and the entertainment was a mix of song and dance performed by artists from Burundi and Morocco.

The event highlighted the close, important and expanding relations between Canada and Africa, including many achievements in just the last year. Canada is committed to assisting Africa create the conditions for greater prosperity and security.



German Foreign Minister visits AIMS – South Africa

German Foreign Minister, Dr Guido Westerwelle, accompanied by a delegation of about 40 people which included 10 business representatives, 8 government officials and the media, visited AIMS South Africa on April 28, 2013.



They had a short tour of the AIMS-South Africa facility, as well as presentations by AIMS-South Africa and AIMS-NEI including two students who gave short talks about their time at AIMS.

The German Government is a strong supporter of AIMS, through DAAD, PhD Scholarships, Postdocs and recently a Research Chair at AIMS-Senegal.

The visit was part of the Minister's itinerary during a four-day

trip to Ghana, South Africa and Mozambique. According to a media report, Dr Westerwelle stated, *"Germany believes that tying in the private sector in the endeavour to fight the triple challenge of poverty, unemployment and inequality is crucial. These nations are promising partners in this fight and the visit is intended to strengthen the political and economic ties necessary for progress on this front."*

AIMS Ten-Year Reunion: Celebrating African Development through Mathematical Science Education

The African Institute for the Mathematical Sciences Next Einstein Initiative (AIMS-NEI) will be holding their first ever Global Alumni Reunion, titled "Transforming Africa Through Knowledge-Based Enterprise".

This reunion marks the ten-year anniversary of a successful Model for Development and will be held from June 27 – 29, 2013, at the Muizenberg Pavilion in Cape Town, South Africa.

This meeting will bring together over 250 participants comprising leaders from educational systems, research institutes, governments, the scientific community, civil-society organizations and AIMS alumni, to address how Mathematical Sciences education can transform the African Continent. There will be many high profile speakers from Africa, Europe and America. The event is supported by IDRC and the Robert Bosch Stiftung Foundation, Perimeter Institute for Theoretical Physics (PI) and International Centre for Theoretical Physics (ICTP).

ALUMNI

AIMS Alumni Attend Star-Studded Event in Pasadena, California

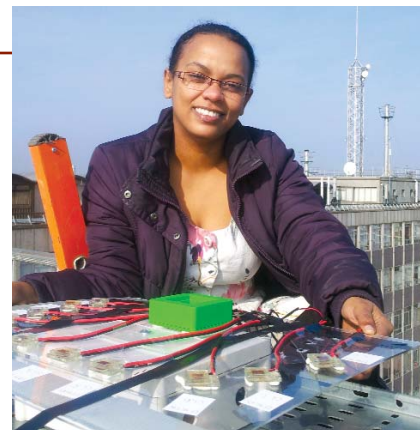
Four AIMS alumni: James Malm, Kidist Zeleke, Martial Ndeffo and Esra Khaleel, attended a dinner hosted by AIMS-NEI in Pasadena, California on April 17, 2013.

The event brought together influential new potential AIMS-NEI champions to learn about the achievements and goals of AIMS-NEI and to discuss strategies for expanding support for the organization in North America and internationally. Special guests included Professor Stephen Hawking as well as prominent representatives from the motion picture industry, including Morgan Freeman and his production partner at Revelations Entertainment, Lori McCreary; James Younger, Executive Vice President at Revelations Entertainment; Sidney Poitier and his wife, Joanna and Quincy Jones. The Canadian government was represented by David Fransen, Canadian Consul General in Los Angeles and Dame Barbara Hay, and the United Kingdom's Consul General in Los Angeles.



Alumna Profile Hind Ahmed

Since her graduation at AIMS, Ms. Ahmed has gone on to study at the prestigious Singularity University, NASA AMES, in California, USA. She holds an Honors degree in Physics (Jan 2004), a Postgraduate Diploma in Mathematical Sciences (June 2006), a Masters degree in Material Physics (June 2008) and a professional Masters in Micro/Nano Electromechanical System (MEMS/NEMS) (Sep 2009). She has worked as a physics tutor at The University of Cape Town, an engineer researcher at LANDI RENZO in Italy, and a teaching assistant at both AIMS, South Africa and The Dublin Institute of Technology, Ireland. Her overall interests are in Nano-technology and Applied Physics and Engineering, with focus on how to use these technologies to address humanities biggest problems, such as the creation and access to energy, food, and water. She recently completed the research study, *Luminescent Downshifting Layers as Smart Light Collecting System for the Efficiency Enhancement of Photovoltaic Cells*, which addresses photovoltaic technologies. Ms. Ahmed, originally from Sudan, feels that her main goal is "to make a success of my life so that the young African girls can have a role model to look up to and strive to empower themselves."



My main goal "...to make a success of my life so that the young African girls can have a role model to look up to and strive to empower themselves."

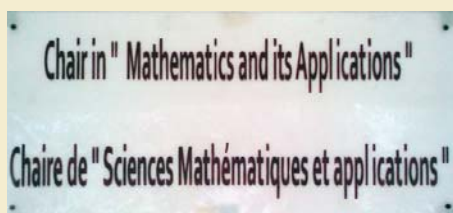
Hind Ahmed

RESEARCH

New research chair at AIMS- Senegal

AIMS Senegal has appointed a new research chair, Senegalese Humboldtian and mathematician, Mouhamed Moustapha Fall.

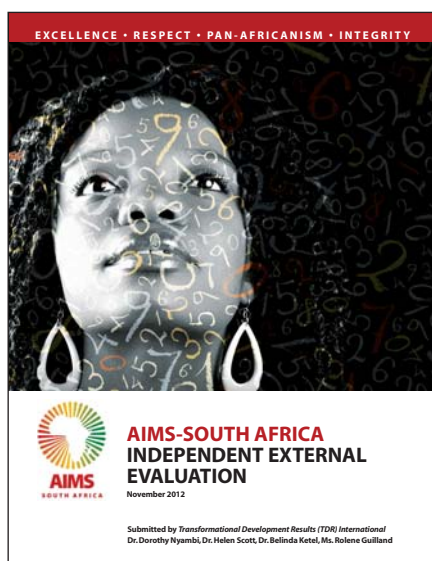
The endowed chair is the core element of the "Humboldt Collaborative Centre", which is being funded over the next four years by the Federal Ministry of Education and Research to the value of 520,000 EUR. The Humboldt Foundation and the German Academic Exchange Service (DAAD) are acting as partners in the project to promote networking between AIMS Senegal and German universities as well as with other AIMS centres. Mr. Fall's research interests include partial differential equations and differential geometry.



AIMS-NEI Releases First External Evaluation Report

AIMS- South Africa has recently completed its first independent external evaluation commissioned by AIMS-NEI and carried out from November 2011 to March 2012 by Transformational Development Results (TDR International).

This evaluation sought to address both learning and accountability as AIMS-NEI rolls out its growth plan to replicate centres of excellence for mathematical sciences. The evaluation was intended to identify the results achieved to date, contribute to lesson learning for enhanced performance of AIMS-SA and inform the development of future centre-specific strategies for AIMS-SA and other new centres within the AIMS network. Furthermore, the evaluation sought to address the relevance, efficiency, effectiveness, impact and sustainability of AIMS-SA on the continuum towards attaining its goal of responding to the development challenges of Africa through an increase in the number of African graduates in mathematical sciences.



AIMS IN THE MEDIA

What if Africa were to become the Hub for Global Science?

By Julian Siddle, BBC Radio Science Unit. March 26, 2013

Excerpt: And from the African Institute of Mathematical Sciences (AIMS), itself an institute with strong links to the global physics community, there is the Next Einstein Initiative. This is currently setting up centres of excellence in Africa for the mathematical sciences, and is connected to some of the most forward-thinking academics in the fields of maths and physics across the continent, as well as in Canada, the UK and the US. Next Einstein Initiative executive director Thierry Zomahoun says: "So far, we have set up institutes in Senegal and Ghana, with more planned in Cameroon, Tanzania and Benin.. "And the idea is literally to create an environment in which an African Einstein could develop." Perhaps the areas where Africa's scientific contributions are most striking is in our understanding of Malaria and HIV.

Institute Aims to Find 'African Einstein'

By Nontando Mposo, iol SciTech. February 8, 2013

The search is on for the next scientific genius.

The African Institute for Mathematical Sciences (AIMS) in Muizenberg, which finds and then trains top scientists and mathematicians from across Africa, has a new programme to nurture scientific and technical talent.

This was announced by the Canadian High Commissioner to South Africa, Gaston Barban, at the Aims centre in Muizenberg this week.

Aims was founded in Cape Town 10 years ago by Neil Turok while he was professor of mathematical physics at Cambridge University. The programme annually recruits students from all over Africa for a postgraduate training and research programmes taught by international lectures.

With a R181-million cash injection from Canadian Prime Minister Stephen Harper in 2010, Aims has established five centres across Africa, including in Senegal and Ghana. Every year, 110 talented students graduate from the Aims network on a full scholarship.

Director of Aims SA Professor Barry Green said after an online pan-African recruitment process, 60 students were chosen for this year from among 500 applicants from 33 countries.

"We believe in growing a network of students who will develop to be key role players in mathematical sciences in South Africa and Africa.

"The programme seeks to nurture Africa's brightest graduates in the hope of discovering an 'African Einstein'."

Last year, 31 percent of the 442 graduates from 35 African countries were women.

Barban said: "The Aims New Einstein Initiative is on its way to become a truly pan-African centre for excellence. I am pleased to see the private sector supporting the placement programme. This is a win-win initiative for both companies and the graduates."



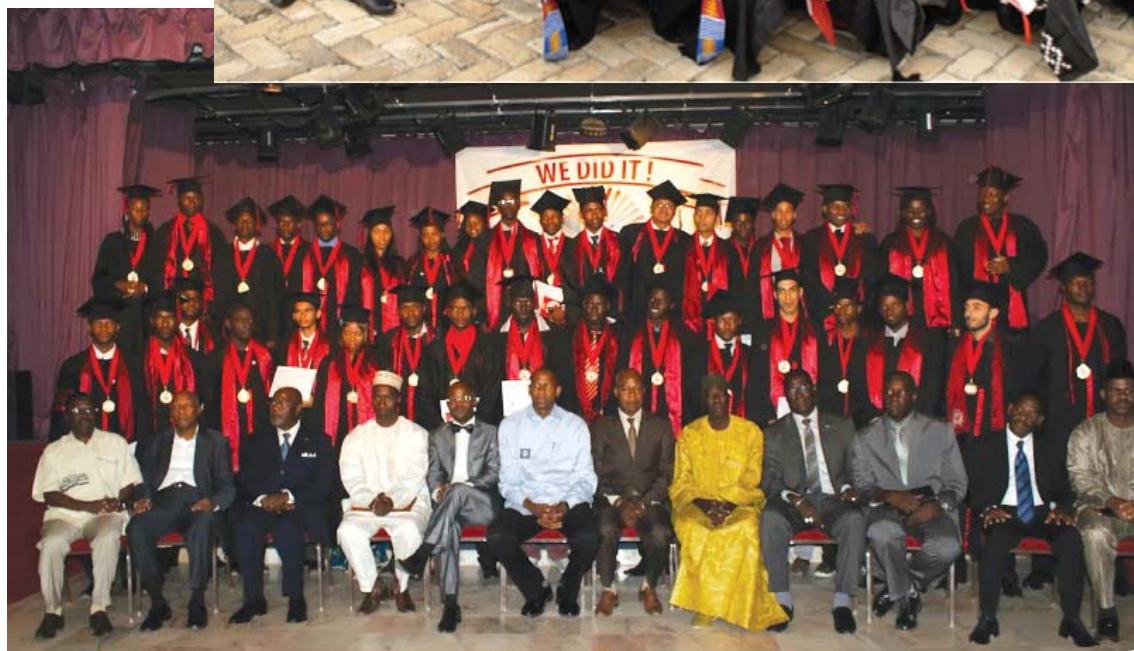
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Photo Briefs



Above: AIMS-Ghana 2012/13 Cohort Graduation Ceremony with Prof Francis Allotey and the Canadian High Commissioner, Trudy Kernighan.



Left: AIMS-Senegal 2012/13 Cohort Graduation Ceremony with Prof Mamadou Sanghare.

Below: The Prime Minister of Cameroon, Philemon Yang with AIMS-NEI Executive Director Thierry Zomahoun and AIMS-South Africa Director, Barry Green.



Above: Naser Faruqi of the Canadian International Development Research Centre addressing the audience at the opening of AIMS-Ghana with Minister of Environment, Science, Technology and Innovation, Dr Joseph Oteng-Adjei and Minister of Education, Prof Naana Jane Opoku-Agyeman.





Above Left: The AIMS-NEI Secretariat staff greet Neil Turok, Founder of the AIMS network.

Above: Jean Lebel, President of IDRC and Peter Braid, Member of the Canadian Parliament meet AIMS students at AIMS-South Africa.



Left: Mary Teuw Niane, Minister of Higher Education and Fallou Sylla, Mayor of Mbour meet Prof Mamadou Sanghare and students at AIMS-Senegal.



Recruit Africa's Top Talent from AIMS

The African Institute for Mathematical Sciences (AIMS) is a non-profit, pan-African network of centres for education, research and outreach. Selected on the basis of their talent from a pool of hundreds of applicants, AIMS has some of Africa's best graduates.

The AIMS Industry Initiative has been launched to increase engagement between AIMS and industry. It responds to industry's need for top talent equipped with technical skills, an innovative mind-set, and the determination to drive Africa forwards, whilst also exposing AIMS' student to the opportunities available to them, allowing AIMS to produce graduates who are ready to deliver from day one.

The initiative includes:

- Internships
- Industry Masters
- Industry PhD
- Research Collaboration
- Industrial Mathematics Workshops
- Student Mentoring

Mathematics is used across the scope of industry – from developing differential pricing models in the hotel industry to climate change models and

big data analytics. Engage with AIMS and explore how the mathematical sciences can give you the competitive advantage.

Learn more about what an AIMS Graduate can do for You.

Contact: Sarah Jackson, Director, AIMS Industry Initiative
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