



# AIMS-NEI NEWS BRIEFS

May 2011

The African Institute for Mathematical Sciences-Next Einstein Initiative (AIMS-NEI) News Briefs is a production of the Global Outreach initiative at Perimeter Institute

## AIMS-South Africa

AIMS-South Africa, the first AIMS centre, was set up in 2003 to offer high quality postgraduate level education in the mathematical sciences to African students on their own continent. It accepts 55 students each year from across Africa, each on a full scholarship, to build expertise in Mathematical Sciences.

### Postgraduate Diploma Programme

The 2010-11 Postgraduate Diploma students have just finished their review courses. Each student selected 11 out of the 18 review courses on offer, which introduced them to a range of fields in which they will be able to specialise during their further studies.



Extra-curricular activities have included special lectures in Stellenbosch and a number of hikes in the mountains of the Cape Peninsula with visiting lecturers.

### Public Lectures

AIMS-South Africa launched its public lecture series in collaboration with the Cape Town Science Centre in October 2010 when Professor Bruce Bassett presented the first lecture at the Civic Centre in Muizenberg. According to Prof Bassett: "We now know that about 95% of our Cosmos is made up of energy we cannot see. Everything we can see in the universe, everything we know and love, is therefore a tiny minority..." Public lectures from a number of other distinguished scientists have followed.

### SAMS Award

Professors Fritz Hahne and Neil Turok have been jointly awarded the South African Mathematics Society (SAMS) Award for the Advancement of Mathematics 2010, in recognition of their efforts in establishing AIMS. According to the chair of the SAMS Award committee Prof Jamshid Moori, "Mathematics in South Africa and Africa as a whole has benefited a lot from the AIMS initiative, so the award is very well deserved. They have made fundamental contributions to building AIMS which has rejuvenated the mathematical sciences at a national level, and serves as model to be emulated."

### Research Centre

AIMS-South Africa is hosting six research visitors at present, including four new arrivals in March 2011.

Douw Steyn from the University of British Columbia joined AIMS-South Africa at the beginning of October and is spending seven months in the Research Centre as Senior Visiting Researcher.

Also in March, Kinvi Kangni, Conrad Tabi, Lubna Mohammed-Salih and Roberto Trotta all arrived from Cote d'Ivoire, Cameroon, Sudan and the United Kingdom respectively, and in April, Gigi Thomas arrived from Botswana.

We wish them all a good stay at AIMS South Africa.

### MoU between AIMS-South Africa and CSIR

On Friday 5 November 2010, Dr Thulani Dlamini, Group Executive for Research and Development at the South African Council for Scientific and Industrial Research (CSIR), and Prof Barry Green (Director) of AIMS-South Africa signed a memorandum of understanding at the CSIR premises in Pretoria.

### AIMS-South Africa Annual Report 2009-10

The [AIMS-South Africa annual report for 2009-10](#) is available for download.



## AIMS-Sénégal

AIMS – Sénégal is joining the AIMS network this year, founded by distinguished mathematicians Professors Mamadou Sanghare and Vincent Rivasseau, the institute is progressing rapidly thanks to IDRC, Google and Sénégalaise government funding and the support of organisations such as IRD.

### The Class of 2011-12

The first round of selection has taken place and over 25 applicants from across the continent will join a group of 10 top Sénégalaise students to complete the first batch of students. Teaching will start in September 2011 with lecturers such as Fields Medallist Cedric Villani highlighting the course. AIMS-Sénégal will be the first bilingual AIMS centre.

While construction preparations continue, a temporary home for the institute has been secured in Mbour. This facility will accommodate lectures, a computer lab, staff offices and visitor accommodation. Student and tutor accommodation will be located close-by.

The first AIMS-Sénégal council meeting was held on 2-3 March 2011 where representatives from Sénégalaise, French, German, Chinese and Canadian universities convened to discuss academic and operational matters for AIMS-Sénégal including the programs to be taken by the first batch of students.

### A Director Appointed for AIMS-Sénégal

Formerly General Administrator for AIMS-Sénégal, Professor Mamadou Sanghare has been appointed as AIMS-Sénégal's first Director from 1 January 2011. Before joining Professor Rivasseau in the founding of AIMS-Sénégal, Professor Sanghare was Professor of Mathematics and head of the Doctoral School at the University Cheikh Anta Diop of Dakar. He also created the Laboratory of Algebra, Cryptography, Algebraic Geometry and Applications which is renowned in Sénégal and abroad owing to the outstanding results it has achieved. As Director, Prof. Sanghare will be in charge of the overall operation



*Professor Mamadou Sanghare*

of the institute. He will be assisted by Mr. Jean-Pierre N'Guessan, formerly Project Manager who will now act as Administrator for the Institute. Other staff members are joining the team in preparation of opening in September.

## AIMS-Ghana

AIMS-Ghana is projected to open its doors to students for the 2012-13 academic year. Prof. FKA Allotey, a highly respected Ghanaian mathematician and statesman has been the driving force behind the development of the institute in Ghana.

### Location

AIMS-Ghana has a home! At the latest steering committee in December, it was decided to site AIMS-Ghana on a 20 acre parcel of land donated by the Saltpond Redevelopment



Institute. The piece of land is on a hilly plot overlooking the town of Saltpond and the ocean. Besides being an area of outstanding natural beauty, the Saltpond region is the seat of the Ghanaian independence movement and the location of Elmina Castle, the earliest European building in sub-Saharan Africa.

Architecture work has begun and construction is planned to start in late 2011.

### Appointments

Three new members have graciously agreed to join the International Scientific Advisory Committee which is working to support the development of AIMS-Ghana: Prof. Ludwig Faddeev (Dirac prize winner and ex-president of the International Mathematical Union), Prof. Lars-Erik Persson (former president of the Swedish Mathematical Society) and Prof. Dame Jocelyn Bell-Burnell (Herschel Medallist and ex-president of the Institute of Physics) join Sir Michael Atiyah on the committee.

### Project Manager Appointed

AIMS-Ghana has appointed a Project Manager as of March 2011. Nana E. Amponsah is a civil/environmental

*Nana E. Amponsah*

engineer with expertise in statistical data analysis, site investigation and characterization as well as water resources management. Before joining AIMS-Ghana, she worked with Gradient, an environmental consulting firm in Boston, USA. She received her Master's Degree from the College of Environmental Science and Forestry, State University of New York where she was a research and teaching assistant. Her Master's thesis utilized regional and global frequency methods with ground and satellite data to generate design rainfall depths in Ghana. She also served as a teaching assistant at the Kwame Nkrumah University of Science and Technology in Ghana, where she received her Bachelor of Science in Civil Engineering.

In the coming months Nana will be working on the architecture competition for the design of the institute and then overseeing construction, alongside working with all of AIMS-Ghana's supporters to bring in more funds and partners for AIMS-Ghana's development.

*Nana says: I look forward to being a part of a system that promises to enhance the image of Africa through the training of local Math and Science experts for industry and government.*

### Directorship Position Opened

Applications for the directorship of AIMS-Ghana are open. Details on the application process can be found at [www.nexteinstein.org/ghana](http://www.nexteinstein.org/ghana).

## AIMS-Ethiopia

### Plans

A number of activities are planned for the coming year in Ethiopia. The first meeting of the Academic Council, planned for mid-2011, will bring together AIMS-Ethiopia supporters from across the country with AIMS-NEI supporters and staff from around the world. This meeting will allow AIMS-Ethiopia to define its charter and move towards registration. Appointment of staff will be expected to follow soon afterwards.

## AIMS Alumni

A database has been created to keep track of the post-AIMS studies and careers for all students since 2003. This

includes the degrees obtained after AIMS, professional development and their current engagements.

The table below gives a summary of the current information available for the alumni.

Graduates from the AIMS-PGD	305
Masters Achieved	120
PhDs Achieved	15
Masters in Progress	110
PhDs in Progress	114
Currently Working in Academia	47
Currently Working in Industry	21

Of the 15 PhD holders (two of whom are women), 7 are currently lecturing in their home universities or in other African universities.

*Among the 305 graduates, we have been able to update information for 287 students. All alumni who have not been contacted by their representatives for their year are requested to contact [alumni@nexteinstein.org](mailto:alumni@nexteinstein.org). If you know a graduate who has changed their email address please send us their details or tell them to contact us. Your relationship with AIMS does not end on your graduation. We love to hear from you, so please do stay in touch.*

## AIMS-Next Einstein Initiative

AIMS' Next Einstein Initiative is coordinating the development of the new centres across Africa; everything from selecting countries to fundraising and overseeing implementation. In order to make this possible a number of new staff have been recruited to the team, based in Mui-zenberg alongside AIMS-South Africa.

### New Staff

#### Carolina Ödman-Govender – Director of Academic Development

Carolina Ödman-Govender was born in Switzerland, of Swedish descent. She studied physics engineering at the Swiss Federal Institute of Technology in Lausanne before completing a PhD in theoretical cosmology at the University of Cambridge. After her PhD, she

*Carolina Ödman-Govender*



worked with UNESCO and came as a tutor to AIMS in its first year. After completing a post-doc in Rome, she joined Leiden Observatory in the Netherlands where she initiated and led an international astronomy outreach programme: *Universe Awareness*. She moved to South Africa in July 2010, joining the South African Astronomical Observatory and the AIMS Cosmology research group as an SKA research fellow. She is one of the organizers of the *Astronomy* workshop series, which explores the new media dimension of astronomical research and outreach. Her interests revolve around science and development.

Carolina says: *AIMS is a fantastic learning experience for everyone who comes through the institute. Every year, a new generation of outstanding people reach a potential that could have remained untapped. With the vision of the Next Einstein Initiative even more great minds will emerge, who will, I believe, initiate real change around the world.*

### Trust Chibawara - Operations Associate

Trust will support the startup and establishment of new AIMS centres and the AIMS-NEI secretariat.



*Trust Chibawara*

Trust Chibawara is from Zimbabwe; he obtained a BSc Honours Degree in Mathematics from Midlands State University. In 2007-08 Trust was an AIMS PGD student and his interests were in Financial Mathematics – his essay on Optimal Investment Strategies for Risky Assets was supervised by Prof. Ekkehard Kopp and Dr. Alet Roux. After finishing his PGD, he obtained a scholarship to do a Master's Degree in Financial Mathematics at the University of Stellenbosch which was completed in March 2010. Trust was a tutor at AIMS-South Africa until December 2010.

Trust says: *Being at AIMS has made me realise that, science has one common language that gives us the opportunity to interact with everyone, without religious, political, cultural or social barriers. With this experience, I have acquired more confidence in myself, in the things that I can do and learn. I believe this was just a major step I took in becoming a future leader.*

### Vicky Mbalo-Ngcwama – Office Manager

Vicky will manage the AIMS-NEI Secretariat Office in Cape Town, including administrative, finance and logistical tasks.



*Vicky Mbalo-Ngcwama*

Vicky was born in East London, Eastern Cape and grew up in Mdantsane and Gugulethu in Cape Town. She is married and blessed with one beautiful daughter. She attended Dr. Nelson R. Mandela high school in Cape Town and has completed diplomas in Computing and Public Relations from Damelin College, Project Management (EduTrain) and certificates from other institutions and finally a Bachelor of Social Science from the University of Fort Hare.

Vicky says: *I love to see people getting the right skills, knowledge, education and development and AIMS is the place to be for those who need empowerment in Maths and Science. It gives me a space to be the best performer. AIMS provide me with a platform to interact with many people from all over the world. The opportunity to network with various students makes AIMS an outstanding international organisation. I love the saying: "If you think education is expensive, try ignorance and compare the two."*

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### About the AIMS-Next Einstein Initiative ([www.nexteinstein.org](http://www.nexteinstein.org))

AIMS was founded in 2003 in South Africa as a pan-African centre to address the impact of the critical shortage of mathematical and scientific expertise in Africa. AIMS-NEI will create a coordinated network of centres of excellence, recruiting outstanding graduates from all over Africa to learn math and science together. As demonstrated by AIMS-South Africa ([www.aims.ac.za](http://www.aims.ac.za)), their shared passion for science will bridge cultural and national divides and build a joint commitment to an improved future for Africa. Most will continue on to Masters and PhDs in fields relevant to African development. Some will follow academic careers, helping to build teaching and research capabilities in African universities. Others will proceed to leadership roles in government, industry and enterprise. AIMS-NEI News Briefs is supported by the Global Outreach initiative of Perimeter Institute for Theoretical Physics, promoting the emergence of centres of scientific excellence in the developing world.

### About Perimeter Institute ([www.perimeterinstitute.ca](http://www.perimeterinstitute.ca))

Perimeter Institute for Theoretical Physics (PI), in Waterloo, Ontario, is a leading international centre for research in foundational physics. PI's Global Outreach program, with AIMS-NEI as its centrepiece, is devoted to promoting and sharing expertise with emerging centres of excellence in physics and maths worldwide. PI Global Outreach serves as the North American coordinating partner for AIMS-NEI, facilitating the participation of other public and private partners in that endeavour.