

# Teaching at AIMS: African Institutes for Mathematical Sciences

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# Aims of AIMS

*AIMS was established in 2003*

Founders: Neil Turok & Fritz Hahne, are maths physicists.

Partnership project: Universities of Cambridge, Cape Town, Oxford, Paris Sud XI, Stellenbosch, Western Cape.

*“The idea that Neil unfolded seemed quite simple, very laudable and entirely unrealistic”*

*Chris Brink, VC University of Stellenbosch(2001-2007)<sup>1</sup>*

- + To promote mathematics and science in Africa
- + To recruit and train talented students and teachers
- + To build capacity for African initiatives in education, research, and technology

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<sup>1</sup>[1] AIMS: the first decade

## AIMS South Africa



# Students

- Graduates in maths areas from most African countries
- Main first languages are English French, Malagasy, Arabic
- At least a third are women

## AIMS Tanzania



## Students

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- Main first languages are English, French, Malagasy, Arabic
- At least a third are women
- Fewer than a third from country of AIMS centre
- 12 to 20 nationalities in each cohort
- have often struggled to get an education in countries where only primary education is mandatory
- often older than UK graduates, leave families behind, and try to save their allowances to send home
- **Motivation and commitment is high**  
One student walked from Angola to Cape Town.

# AIMS Ghana



## Course structure

- Instruction is in English.
- Intensive language teaching for French, Malagasy or Arabic speakers.
- Introductory skills courses, then
- Series of 6 three-week review courses:
  - Students choose two from three courses
  - Taught by visiting lecturers, often senior professors
  - Volunteers from Europe, North America, Africa
  - 30 hours contact time, 10 per week
  - about 15 to 18 hours lecturing
  - about 12 to 15 hours for tutorial work
  - Tutors assist with tutorials and do the marking.
- Research essay



# AIMS Cameroon



## Statistics courses, degrees ...

Why statistics and data science?

Sustainable development goals: Statistics and statisticians are essential.

Employment and enterprise opportunities

- **Courses** Statistical skills, inference, GLM, time series, maths finance, spatiotemporal, epidemic, climate modelling, ...
- Data science stream Cameroon, Machine learning Senegal
- M.Sc Malaria modelling, Rwanda Mathematical epidemiology, for teachers, ...
- African Data Science Degrees: design and implementation
- International Statistics and Epidemiology Project

## AIMS Cameroon



# African Data Science Degrees: Design & Implementation

AIMS Rwanda 26 March - 2 April 2023

The purpose of the workshop was to

- collaboratively draw out common challenges,
- strategies for successful implementation,
- possibilities for resource sharing,
- scalability and adaptability to specific local contexts.

This was an important first step in building a platform for knowledge exchange across institutions. North, west, south and east Africa were all represented.

## Workshop participants



# Opportunities

- Lecturers
- Tutors
- Essay supervisors, co-supervisors
- PhD supervisors, co-supervisors

Future:

- support for academics, discussed for South Africa.
- Syllabus and resources development, statistics stream.

[aims.ac.rw/our-centres](http://aims.ac.rw/our-centres)