



**AIMS**

African Institute for  
Mathematical Sciences  
RWANDA

# TRAINING AFRICA'S TOP MATHEMATICAL SCIENTISTS



# OUR VALUES



**EXCELLENCE**



**RESPECT**



**PAN-AFRICANISM**



**INTEGRITY**



# AIMS

African Institute for  
Mathematical Sciences  
NEXT EINSTEIN INITIATIVE

## WE ARE CONTRIBUTING TO AFRICA'S SOCIO-ECONOMIC TRANSFORMATION THROUGH:



Innovative  
scientific training

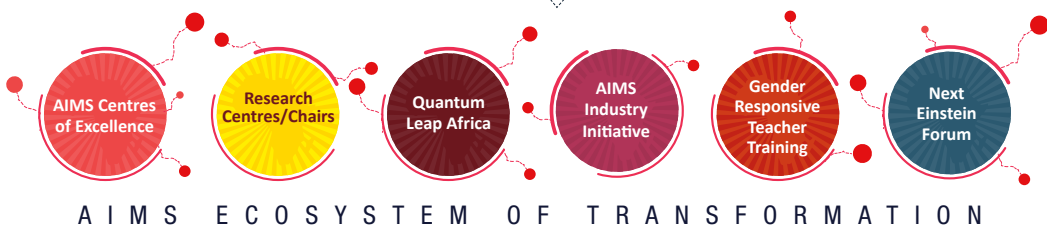


Technical advances  
& discoveries



Public engagement for  
the continent's scientific  
emergence

## HOW ARE WE DOING THIS?



## PROFILE OF AIMS ALUMNI



OVER  
**2200**  
ALUMNI  
FROM 43 COUNTRIES SINCE 2003

OVER  
**70%**

OF OUR ALUMNI REMAIN  
ON THE CONTINENT



ALUMNI ARE FROM **43** COUNTRIES



### ALUMNI POST AIMS





# ABOUT AIMS RWANDA



**244**  
students trained  
since inception

AIMS Rwanda was launched on 27 August 2016 as the fifth centre of excellence for postgraduate studies in mathematical sciences.

Since inception, the centre has trained a total of 244 students. Our academic staff comes from all over the world, giving a global learning experience to our students. AIMS fosters an environment of constant learning due to its 24 hour nature of the university that allows constant tutor-student interaction.

Its Pan-African nature helps the students learn about different cultures and opens up their minds and curiosity to solve problems across the continent post their education.

# AIMS RWANDA STATISTICS



- ▶ Number of alumni since inception:

**244**  
alumni  
(91 F, 153 M)



- ▼ Students come from **26 African countries.**

- ▶ Percentage of women graduates since inception (AIMS Rwanda):

**38%**

**Number of Alumni that remained in Africa from AIMS Rwanda: 67%**



Number of Alumni that pursued further studies after AIMS Rwanda:

**40%**



- ▶ The current number of students in 2020 -2021 Cohort AIMS Rwanda is **44 (17 F, 27 M)**

# FACTS ABOUT AIMS RWANDA



AIMS Rwanda was the **fifth centre of excellence** (out of 5 centres) of the AIMS network to be created under the framework of the Next Einstein Initiative in 2016



AIMS Rwanda has trained **244 students**, with **91 of them being women**



AIMS Rwanda was the first center in the network to host African Master's in Machine Intelligence (AMMI)

All our students dedicate 20 hours to mandatory community service activities each year.



AIMS Rwanda programs are especially designed to attract female scientists into the STEM pipeline, contributing to Rwanda's gender expected outcomes as defined in the country's initiative to promote girl education.

# A GLANCE AT AIMS RWANDA PROGRAMS:

## Structured Master's Program

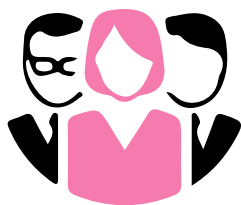


AIMS Rwanda offers an intensive structured Master's degree in mathematical sciences entailing 10 months of course work and research, followed by an oral defence. The program provides a strong grounding in end-to-end skills, from problem formulation, estimation, prioritization, and generally applicable mathematical and computing methods in big data, computer security and financial mathematics, to clear and concise scientific report writing. The aim is to equip students with the necessary tools and confidence for policy analysis and decision making. All candidates go through a rigorous application process, and should have a 4-year degree in mathematics or science discipline with a significant mathematics component. All selected candidates benefit from full scholarships.



## Co-operative Education Program

Culminating in the AIMS Master's in mathematical sciences, this work integrated learning program spans through 18 months: 10 months of course work, six months of internship with appropriate industry, followed by an oral defence. Building on the Structured Master's program, the Co-op program allows students to apply their scientific knowledge to real-world problems. This program targets students with a background in mathematics or related sciences, strong leadership skills, with an engagement to invest in their communities. The fully funded Co-op program is implemented with the support of the Mastercard Foundation, Global Affairs Canada and public and private sector industry partners.



## Master's in Mathematical Science – Climate Science Stream

In line with AIMS growing response to climate change, AIMS Rwanda offers a specialized master's in mathematical sciences with focus on climate science, preparing students to tackle climate change related challenges.

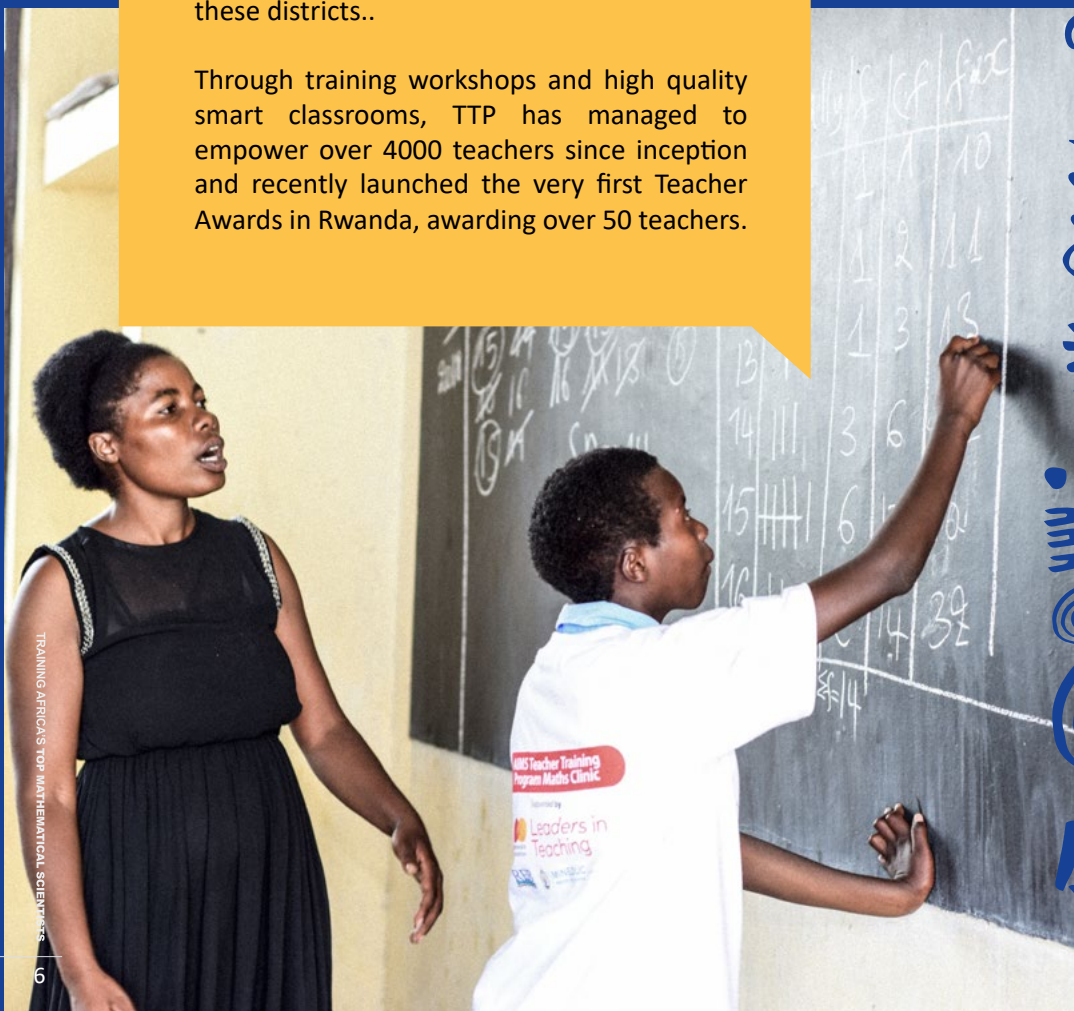


## Teacher Training Programme

The AIMS Teacher Training Program (TTP) started in Rwanda in 2018 with a goal of improving learning outcomes in mathematics and sciences for secondary school students.

TTP operates in 14 districts in Rwanda and has managed to re-invent smart classrooms in these districts..

Through training workshops and high quality smart classrooms, TTP has managed to empower over 4000 teachers since inception and recently launched the very first Teacher Awards in Rwanda, awarding over 50 teachers.





# RESEARCH CENTRE

The AIMS Rwanda research centre is well-positioned to lead Africa into the 4th industrial revolution. The centre shares facilities with Quantum Leap Africa (QLA) which seeks to prepare Africa for the quantum revolution. QLA attracts students and researchers in the quantum science domain from all over the world and has recruited a Research Chair in Data Science and its applications.

Research at AIMS Rwanda focuses on fields like climate modelling, plant-interactions, human disease modelling, computational immunology, quantum physics/science, applied mathematics, and Bayesian methodology. Research team members comprise of postdoctoral fellows, visiting researchers, MSc, PhD students and interns.

The centre is ideally positioned to respond to current and emerging trends/challenges such as the COVID-19 pandemic, climate change, and food security. Recently, a COVID-19 pool testing method was developed and has been successfully used by Rwanda and beyond to track people infected with the SARS-CoV-2 virus, as well as to identify possible asymptomatic people within communities. This algorithm was developed by the AIMS Research team, under the leadership of Prof Wilfred Ndifon, the AIMS Chief Scientific Officer, in partnership with the Rwanda Biomedical Centre (RBC).

# OUR STUDENTS

AIMS Rwanda is currently hosting its 2020-2021 cohort, consisting of 44 students (17 women and 27 men) from 14 African countries.

- The students benefit from the experience of world renowned visiting professors who give lectures for a period of 3 weeks on a rotational basis.
- Permanent follow-up and capacity building is provided by the tutors who are available on campus, to enhance the 24-hour learning nature of the university.



## MEET THE **AIMS RWANDA TEAM**



**Prof. Dr. Sam  
Yala** Centre  
President



**Prof. Blaise  
Tchapnda**  
Academic  
Director



**Ariane  
Moira  
Rutayisire**  
Finance  
Officer



**Emmanuel  
Kanamugire**  
IT Manager



**Francois  
Papin  
Niyonkuru**  
Academic  
Support  
Officer



**Eng. Aime S.  
Kabandana**  
Facilities  
Manager



**Aime  
Ishimwe  
Beza**  
IT Intern



**Beathe  
Uwizeye**  
Administration  
Officer



**Sylvie Uwase**  
Office  
Coordinator



**Maurice  
Cyubahiro**  
Driver and  
Logistics  
Assistant



**Methode  
Tuyisenge**  
Driver and  
Logistics  
Assistant



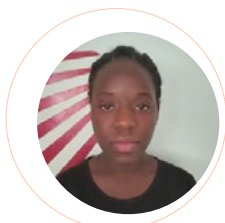
**Mutoni  
Sharon**  
Programs  
Officer Intern



**Rwagasore  
Bernard**  
Communications  
Officer intern



## MEET THE **AIMS RWANDA TUTORS TEAM**



**Dr. Cornelia  
Mitcha**  
Tutor



**Dr. Armeline  
Dembo Mafuta**  
Tutor



**Dr. Razanajatovo  
Misanantenaina Valisoa**  
Tutor



**Jessica Weitbrecht**  
Tutor



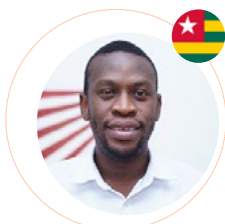
**Dr. Stive Roussel**  
Tutor



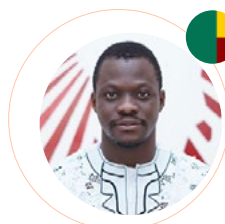
**Michel  
Murwanashyaka**  
Tutor



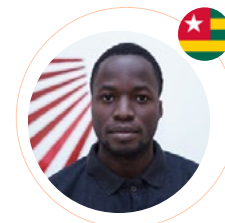
**Brian Kyanjo**  
Tutor



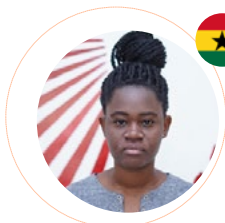
**Dr. Assionvi Hove Kouevi**  
Tutor



**Dr. Bourgeois Biova  
Irénee Gadjaboui**  
Tutor

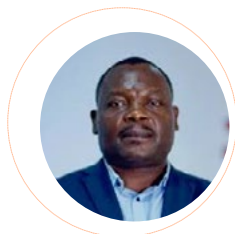


**Yao Gahounzo**  
Tutor Intern



**Jennifer Ahiabile**  
Tutor Intern

## MEET THE **AIMS RWANDA RESEARCH TEAM**



**Prof. Wilfred Ndifon**  
Chief Scientific Officer



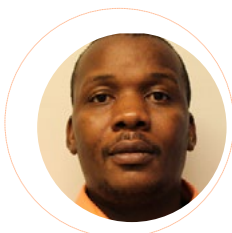
**Dr. Prince Osei**  
Director QLA



**Dr. Bamba Sylla**  
Research Chair



**Prof. Franca Hoffmann**  
AIMS-Carnegie Research  
Chair in Data Science  
QLA



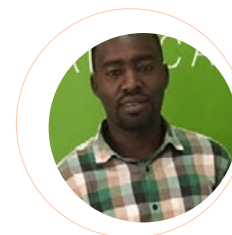
**Dr. Isambi Sailon  
Mbalawata**  
Research and Scientific  
Development Manager



**Teta Bahunde**  
Project Manager,  
AMMI



**Dr. Nana Ama Klutse-Browne**  
AIMS Canada Resident  
Researcher in Climate  
Change Science



**Dr. Abdoelnaser  
M Degoot,**  
Postdoctoral  
Researcher



**Dr. Christine  
Warugaba**  
Senior Administrative  
Officer, Research

## MEET THE **AIMS RWANDA RESEARCH TEAM**



**Dr. Rosita Yocgo,**  
Resident Researcher



**Dr. Alima Dajuma**  
AIMS Canada Postdoctoral  
Fellow, Research



**Dr Ndeye Yacine Barry**  
Postdoc In Climate  
Change, Research



**Dr. Moustapha Tall**  
AIMS Canada  
Postdoctoral Fellow,  
Research



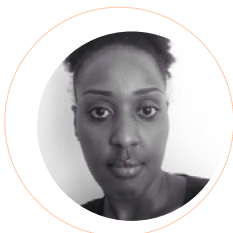
**Molly Mutesi**  
Project coordinator  
QLA



**Cedric Shema**  
Full Stack Developer,  
Research



**Dative Tuyisenge**  
Project Coordinator,  
HIMAI



**Carine Umulisa**  
Research Support  
Officer



**Methode Tuyisenge**  
Driver and Logistics  
Assistant

## Our academic partners



Carnegie  
Mellon  
University  
Africa



LUT  
Lappeenranta  
University of Technology

## International Partners

Johnson & Johnson

Canada



DAAD



Google



Imperial College  
London





## Other Supporting partners



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# SOLVE AFRICA'S GRAND CHALLENGES

## APPLY FOR THE AIMS WORLD-CLASS MASTER'S IN MATHEMATICAL SCIENCES

### Requirements:

Applicants should hold a 4-year degree in mathematics or any science discipline with a significant mathematics component.

### Why study at AIMS:

- World renowned lecturers from across Africa and around the world supported by a team of resident tutors.
- Students and lecturers live on campus to encourage a 24-hour learning environment.
- Group work and highly interactive learning setting.
- Emphasis on programming and data science with 24/7 access to computer labs and high speed internet.
- A diverse student body from across Africa.
- Candidates are highly accepted in employment and higher learning institutions upon graduation.
- All candidates get a full scholarship.

**APPLY NOW****DEADLINE:  
31 MARCH  
2021**

### How to apply:

Visit the **“Apply”** menu @ [nexteinstein.org](https://nexteinstein.org) and click on the program of your choice.

**Women and socio-economically disadvantaged persons are strongly encouraged to apply.**

 **Open to all African Countries**



African Institute for Mathematical Sciences - AIMS



@AIMS\_Next

A young African woman with dark hair and a wide smile is in the foreground, wearing a brown and tan patterned shawl. She holds a red and a blue marker over an open notebook on a blue desk. In the background, a young African man in a blue and white striped shirt is focused on his work at a similar desk. The setting is a classroom with blue walls and a purple curtain. The text "WE BELIEVE THE NEXT EINSTEIN WILL BE AFRICAN" is overlaid in white capital letters.

**WE BELIEVE THE  
NEXT EINSTEIN  
WILL BE AFRICAN**

TB- Out



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**NEXT EINSTEIN INITIATIVE**

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