



AIMS

African Institute for
Mathematical Sciences
CAMEROON



TRAINING AFRICA'S TOP MATHEMATICAL SCIENTISTS



Innovative Training, Research & Home-grown
— Solutions for a Prosperous Continent —

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

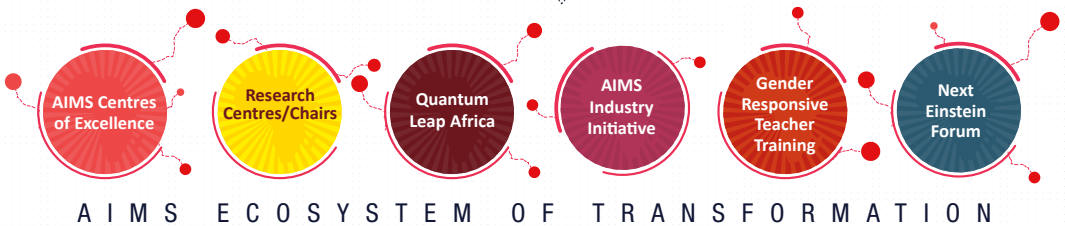


Technical advances
& discoveries



Public engagement for
the continent's scientific
emergence

HOW ARE WE DOING THIS?



PROFILE OF AIMS ALUMNI

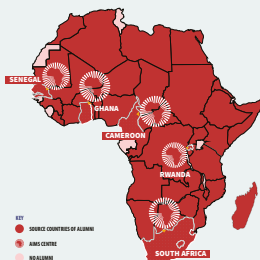


OVER
2200
ALUMNI
FROM 43 COUNTRIES SINCE 2003

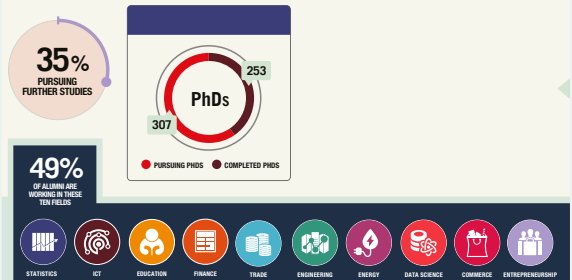
OVER
70%
OF OUR ALUMNI REMA
ON THE CONTINE



ALUMNI ARE FROM **43 COUNTRIES**



ALUMNI POST AIMS



In Partnership with

AIMS – ACCELERATING KNOWLEDGE-LED DEVELOPMENT IN AFRICA

The African Institute for Mathematical Sciences (AIMS) is a pan-African network of centres of excellence for post-graduate training in mathematical sciences, research and public engagement in Science, Technology, Engineering and Mathematics.

Founded in 2003 in South Africa by acclaimed physicist Prof Neil Turok and later replicated in Senegal, Ghana, Cameroon, Tanzania and Rwanda, AIMS is leading Africa's socio-economic transformation through:

- Innovative scientific training (the development of human capital);
- Technological advances and cutting-edge scientific discoveries; and
- Public engagement for the continent's scientific emergence.

Africa's youth are at the heart of the innovation and transformation ecosystem which consists of a set of academic and non-academic programs expertly tailored to provide AIMS learners with a unique post-graduate training experience on the continent.

AIMS offers a Master's in mathematical sciences, including a co-operative option with a direct link to industry, the African Master's in Machine Intelligence (AMMI), as well as research programs, with over 100 researchers conducting studies across the network. In addition to the AIMS Industry Initiative and a gender-responsive Teacher Training Program currently implemented in Cameroon and Rwanda, AIMS equally created two critical initiatives: Quantum Leap Africa, a think tank looking into the coming quantum revolution and the Next Einstein Forum to propel Africa on to the global scientific stage.



FIVE FACTS ABOUT AIMS-CAMEROON



AIMS-Cameroon is the fourth centre of excellence (out of 5 centres) of the AIMS network to be created under the framework of the Next Einstein Initiative in 2013;



AIMS Cameroon has trained 305 students, with 106 of them being women – 276 in the structured Master's and 29 in the Co-operative Master's, with 9 Co-op students who graduated in February;



AIMS-Cameroon has hosted over 135 world-class lecturers from more than 24 countries around the world;



Qualified students receive full scholarships;



AIMS-Cameroon is the first centre in the network to pilot the Teacher Training Program, launched in 2016.



OUR PROGRAMS

ACADEMIC PROGRAM

The AIMS Master's in mathematical sciences consists of courses grouped in teaching units. The program offers a Master's II, targeting students with at least a Master's I or an equivalent diploma, or four years of undergraduate studies in the Anglo-Saxon system. Students with a background in mathematical sciences, physics, computer science or related sciences are eligible. Each year, the academic program is validated by the academic council, based on the proposal of the Academic Director. Based on feedback from academic stakeholders and industry, the proposed courses can be slightly modified from one year to the next.

The AIMS-Cameroon Master's in mathematical sciences is delivered under two streams: a regular or classical program designed for research and a co-operative program which is industry oriented, with a work placement phase.

AIMS Structured Master's Program



AIMS Co-op Master's Program



Academic Program Features



The curriculum runs through three semesters;



Core courses are mandatory for all students for both programs;



Semester I: Skills Courses are compulsory and designed to provide introductory and foundational material to the students for both programs, to achieve predefined outcomes, with little flexibility in their content. In this phase, both programs have all courses in common;



Semester II: Review Courses include a wide range of topical issues and allow for flexibility in course design for each program. The structured program includes courses like PDEs, Statistical Inference, Functional Analysis, Differential Geometry, Quantum Mechanics, Calculus of Variations etc. While the Co-operative program includes courses in Machine Learning, Data Analysis, Financial Statistics, Biomathematics, etc. Students are required to complete two out of the three or four available review courses in each time slot. The ongoing communication skills, entrepreneurship and leadership skills, as well as computing classes, are compulsory for both programs;



Semester III is designed for **work placement for Co-op students** and the research phase for both programs. Co-op Students are supposed to spend six months of internship in a local or international company, to gain hands-on experience and prepare for future career opportunities. Co-op students are required to submit internship reports at the end of the work term. The research phase begins one month before the work placement and resumes in November at the end of the internship phase. Students enrolled in the structured program are required to define their research projects by January- February. During this phase, they get familiarized with the project, get to know their supervisor and start reading in/during their free time. As from mid-March to the end of the program in June, structured program students focus solely on research;



After defending their research projects before a jury composed of professors from universities in Cameroon and abroad, research students graduate in June, while Co-op students graduate in February of the following year.

MASTERCARD FOUNDATION SCHOLARS PROGRAM

Since 2014, the Mastercard Foundation, together with AIMS, is leveraging the AIMS model to develop Africa's next generation of leaders through education. In a bid to propel socio-economic change, the Mastercard Foundation Scholars Program at AIMS focuses on driving transformative leadership by encouraging scholars to engage in the development of their communities and the continent at large. The program targets socioeconomically disadvantaged students with brilliant academic records and leadership potential.

Features of the Mastercard Foundation Scholars Program at AIMS



Selected Mastercard Foundation Scholars each year;

Transformative leadership and give-back activities;



Advanced training for employment (scholars enrolled for structured and co-op Master's programs);



The Mastercard Foundation Scholars Entrepreneurship Fund (MCF-SEF) will support scholars to activate and augment their social entrepreneurial projects. This is a pilot effort that will run for two years;



The Mastercard Foundation Scholars' Research Fund is supporting Scholar-led research that will produce quality knowledge to inform the implementation of the Scholars Program as well as its expansion and evolution in line with the Young Africa Works strategy. The Foundation is committed to engaging Scholars and unleashing their potential as knowledge creators who will enrich our learning and help maximize impact. One alumnus was awarded this fund in 2019.



RESEARCH CENTRE

The Research Centre at AIMS-Cameroon came into existence in 2017 with the appointment of Prof Gisèle Mophou as the German Research Chair in Mathematics and its Applications, funded by the Alexander Von Humboldt Foundation and DAAD in collaboration with universities in Cameroon. Its mission is to conduct and foster exceptional research as well as national, continental and international collaborations.

The Research Center focuses on Shape Optimization and Control Theory, Deep Learning and Big Data, Optimal Control, Nonlinear and Nonlocal Partial Differential Equations, with a broad range of application to real-world problems such as environmental pollution, coastal erosion, urban, networks as well as problems arising in some local companies. The AIMS-Cameroon Research Center stimulates research by bringing Researchers and Students close to well-known scholars. It organizes Conferences and Workshops and supports a Visitor Program. It supports educational programs and Master programs via tutorials, summer schools, and active involvement in Department of Mathematics at University of Buea. Since 2019, the Research Centre, previously led by Prof. Gisele Mophou and presently under the care of Dr. Jean-Daniel Djida, has published more than 55 articles in internationally recognized peer-reviewed journals and 7 articles have been submitted.

Research Centre Features



Two PhD students working on pollution



Two Invited International Researchers



Seven invited PhD students for presentation of projects, six of them being AIMS Cameroon Alumni



One Post-Doc researcher funded by DAAD



Sixteen Workshops, Five Colloquiums organised



ALUMNI SPOTLIGHT

Ebude Antem Yolande Ebong | Cameroon **2017 | 2018 Mastercard Foundation Scholar**



Ebude is one of the graduates of the first cohort of the Cooperative Education program in industrial mathematics. Before joining AIMS, she studied electrical engineering with a focus on energy at Ecolé Nationale Supérieure Polytechnique Yaoundé. Growing up in a rural community, she was determined to provide quality products by improving industrial processes. Joining AIMS made it possible for Ebude to reinforce her analytical and innovative skills, making her more prepared for an industry career. Now enrolled for Professional Doctorate in data science at the Eindhoven University of Technology in the Netherlands, Ebude is poised to serve the African industries with both engineering and data science solutions. She remains grateful to AIMS for the opportunity to represent the network at UNLEASH 2018 in Singapore.

Woldegebriel Assefa Woldegerima | Ethiopia **2013 | 2014 Alumnus**



Prior to joining AIMS-Cameroon, Assefa studied Mathematics at Addis Ababa University where he obtained an M.Sc in Analysis. He was equally an Assistant lecturer at Mekelle University in Ethiopia. After graduating from AIMS-Cameroon with distinction, he returned to the AIMS-Cameroon center where he tutored and at the same time, obtained a PhD. in Applied Mathematics at the University of Buea, Cameroon in collaboration with Lehigh University, U.S.A. In his PhD thesis, he came out with results that can contribute to the ongoing and promising search for the development of vaccines against malaria parasite. Assefa is the second AIMS alumni to defend a PhD thesis.

Nessma Adil | Sudan **2018 | 2020 Alumna**



"When I came to AIMS, I aspired to academically advancement and expected to gain the knowledge and skills I needed to keep up with the rest of the world in science, and I am elated, I did! AIMS gave me a chance to experience a whole new atmosphere and to think in new ways based on all levels of mentalities. The diversity, which I believe is an essential factor, helped me find my place around others, know where I stand, and draw a path for where I want to be. I, therefore, seized every opportunity and took full advantage of every opportunity that added more to me as a person and as a change-maker. I was equally excited to learn about other countries and traditions, and this expanded my skills on how to affect others positively."

Ajibola, Olusegun Emmanuel | Nigeria **2019 | 2020 Mastercard Foundation Scholar**



With the AIMS platform, I expect to get a world-class learning experience from competent and internationally qualified lecturers. With this, I can be able to leverage my previous knowledge, expand my horizon and be able to deliver aptly in any sector I find myself in the future, either in industry or academia.

I came to AIMS to acquire knowledge that would be vital in addressing many of Africa's challenges, to learn how mathematics can be applied in an innovative way, to find solutions to the drawbacks we have both in my home country Nigeria and Africa at large.

AIMS Teacher Training Program

If Africa is to gain its rightful place in the global knowledge economy and secure its economic future, the significant focus must be put on increasing the quality of math and science teaching. Essential to this focus is a holistic and comprehensive approach that takes into account service delivery, partnerships with existing educational systems and the strengthening of the policy environment that supports teachers and STEM education. An effective teacher training initiative is one of the best ways to effect positive and lasting behavioral change that will contribute to an increased uptake in mathematics and sciences at a national level. The AIMS Teacher Training Program aims at raising the quality of mathematics and science education at the secondary level in Cameroon by providing teacher training and professional development courses, promoting best practices and distributing high-quality classroom resources to in-service and pre-service teachers.

AIMS TTP aims to:

- Improve the quality of the teaching & learning of mathematics in Cameroon;
- Increase the number of qualified teachers (female) in mathematics in Cameroon;
- Increase the number of students (girls) going for STEM education in Cameroon;
- Propose different career opportunities to STEM qualified students.

AIMS-TTP Achievements:

- 84 master trainers trained
- 1817 in-service teachers trained
- 944 pre-service teachers trained
- 337 cluster leads trained; they have been able to impact 749,984 + students in the country.
- Built, three Ultra-modern, cutting-edge tech laboratories in the Higher Teacher Training Institutes of Yaounde, Maroua & in the University of Buea
- Produced quality resources (Teachers' Guides, Curricula, Training Manuals) used during trainings
- Recruited 10 Resource Developers to develop digital lessons to be put on the AIMS-TTP eLearning and Community of Practice (CoP) platforms

Institutional Partners

AIMS-NEI has been able to thrive thanks to the commitment of our partners in advancing science and technology in Africa. Here are some of our key partners:



The Government of Cameroon has been a long-standing partner of AIMS-Cameroon from its inception, in terms of accreditation (on-going), funding and public engagement.



Mastercard Foundation, in November 2014, partnered with AIMS to support 30% of all admitted students from 2015/2016 to 2018/2019, targeting 503 scholarships for the AIMS Co-operative and Structured Master's in Mathematical Sciences, as well as the Teacher Training Program in Cameroon. Launched in March 2018, the Mastercard Foundation Leaders in Teaching Initiative is supporting the AIMS Teacher Training Program in Rwanda.



The Alexander Von Humboldt Foundation, in partnership with DAAD, is supporting the Endowed Chair of Research in Mathematics & its Applications. This program is beneficial to doctorate and post-doctorate researchers across Africa.

TESTIMONIALS



“

Many thanks to AIMS for introducing me to this field of research, my journey at AIMS-Cameroon has been the base stone that brought me to this Ph.D. journey.”

Dr. Pauline Milaure

AIMS-Cameroon alumna of the 2014/2015 cohort and Model Validator at KBC, Belgium, Ph.D in Life Insurance and Financial Engineering.



“

Never underestimate the power of hard work. I intend to use these values imparted in me at AIMS as I go on to impact my community and Africa at large.”

Loyce Kayanula



“

AIMS has equipped me with time-management skills and has made me discover qualities in me that could be put to the benefit of my country.”

Hans Thierry

MEET THE TUTORS



Berthine N unga
Applied Mathematics
and Machine Intelligence
DRC



Zelleke Girma
Mathematical modelling
Ethiopia



Armand Noubissie
Number Theory
Cameroon



Sylvain Wagoum Nodem
Physicist



James Jr. Njong
Financial Mathematician

MEET THE AIMS-CAMEROON TEAM



Prof. Dr. Mama Foupouagnigni
Centre President



Honore B. Youfegnuy
Chief Operating Officer



Prof. Marco A. Garuti
Academic Director



Chuo Isabelle
Finance & HR Manager



Nathalie Wandji
IT Manager



Sylvain Wagoum N.
IT Assistant



Gilbert Attia
Facilities & Logistics Assistant



Sarah Njomo Teke
Wellness, Administrative, and Communications Assistant



Ngeche Doris N.
Program Officer



Daniel Tieudjo
TTP Director



Kenyan Hunter
TTP Program Coordinator



Yves Yuovop Sofo
TTP IT Coordinator



Emilia Babila
TTP Pedagogic Adviser-English



Patrick Njionou
TTP Pedagogic Adviser-French



Justin Agbessi
TTP Finance Officer



Andreas Mouzong
TTP IT Officer



Bin Denis
TTP Logistics Assistant



Larysa Fambuh
Communications Intern



Georges Din
Logistics Intern



Adirou Mforifoum
Logistics Intern



Daniel Matute Effange
Logistics Intern



George Mbella
Communications Intern, AIMS-Cameroon

AIMS-CAMEROON AT A GLANCE



AIMS-Cameroon graduates First Batch of Co-Op students



AIMS-Cameroon students with Cedric Villainy



Kenyan Hunter awarding Geometric Kits to trained teachers



Launching of the Maroua TTP Lab



Students visit the orphanage during Christmas



Field trip at SONARA



Master trainer on the e-learning & CoP platform



AIMS students visit CDC



AIMS-Cameroon Tutors



Pre-service teachers using the lab

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 blue and a red pen over an open notebook on a desk. In the background, a young African man in a blue and white striped shirt is focused on his work at another 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

CONTACT INFORMATION

Focal person for partnerships & internship placements

Honore Youfegnuy Bernard

Chief Operating Officer

honore.youfegnuy@aims-cameroon.org

Focal person for academic collaboration, visiting lecturers & tutors

Prof. Marco Garuti

Academic Director

marco@aims-cameroon.org

Focal person for general information, appointments & administrative matters:

Sarah Teke

Wellness, Admin, and Communications Assistant.

sarah.teke@aims-cameroon.org



AIMS

African Institute for
Mathematical Sciences
CAMEROON

Crystal Gardens, South West Region

P.O. Box 608, Limbe

Tel: [+237] 233 333 363 | www.aims-cameroon.org

Become a student at AIMS, apply from December 1 to March 31 annually:
<https://www.nexteinstein.org/apply/>.



@AIMSNext



AIMS Next Einstein Initiative



AIMS Next Einstein Initiative



@AIMSNext



DAAD

