

SUB-SAHARAN  
AFRICA  
*Young Talents  
Awards*



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AFRICA

*Young Talents  
Awards*

|  
2019



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L'ORÉAL - UNESCO FOR WOMEN IN SCIENCE

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*Women's scientific research:  
a crucial issue  
for Sub-Saharan Africa*

EDITORIAL



*In 2018, there were just 2.4% African scientists  
among the world's researchers,  
of which scarcely 30% were women.*

This is a tiny figure when we consider the extent to which science and innovation are indispensable levers of growth for the continent, which is currently navigating an extraordinary period of change.

If the level of economic development and population growth in Sub-Saharan African countries is unprecedented, we must not, however, forget that they still face significant challenges: climate disruption, poverty, unequal access to education and even resource scarcity. In this context, the contribution of women scientists will prove critical to achieving inclusive research, capable of addressing these major issues.

This year, the Fondation L'Oréal is supporting, through the tenth edition of the L'Oréal-UNESCO *For Women in Science* Sub-Saharan Africa Young Talents Awards, 15 PhD students and 5 post-doctoral students from 15 countries. They were chosen by a jury of eminent experts from more than 400 candidates. These computer scientists, engineers and biologists are proof of the diversity of women's scientific excellence in Sub-Saharan Africa. They are devoted to solving issues that are particularly pressing on the continent, including improving nutritional well-being, the fight against neonatal mortality, tuberculosis and malaria.

These young women share an exemplary determination that remains unaltered by the obstacles they face. Some of these difficulties are inherent to the world of scientific research in Sub-Saharan Africa, such as the lack of finance and techniques to complete research effectively. Others are specifically linked to being a woman – the perpetuation of certain social expectations make achieving a balance between professional and family life particularly difficult. There is also a lack of role models, and a certain reticence sometimes among research directors to employ women.

In these conditions, it is with particular delight that, through the regional *For Women in Science* programme, we will provide the 20 selected researchers with financial support this year. The PhD students will receive €10,000, while the post-doctoral students will receive €15,000, enabling them to continue their work. We are also offering them a leadership training programme, complementary to their academic journey, which will help ensure they are better equipped to pursue their career and break the glass ceiling more easily.

Following this training, a graduation Ceremony will take place on 21<sup>st</sup> November 2019 in Dakar, in the presence of an audience drawn from across the African continent. Those in attendance will include representatives of public authorities, UNESCO, scientists, influential women, universities, intellectuals, thought leaders and organisations promoting gender equality. The Senegalese capital is positioning itself as a focal point around science in Africa for some years, and is preparing to welcome, in a strong indication of its prowess, another ceremony: the International Galien Award, which recognises the world's most promising pharmaceutical advances.

As you explore these pages, we hope that you will enjoy discovering the journeys of these 20 brilliant researchers, in their search for innovative solutions. They are real ambassadors inspired by the will to create change through and for science.

Because the world needs Science, and Science needs women.

*“These computer scientists, engineers and biologists are proof of the diversity of women’s scientific excellence in Sub-Saharan Africa”*

Alexandra Palt  
Executive Vice-President of the Fondation L'Oréal





*The 2019  
Young Talents*



*Central  
Africa*



*Carine  
Kunsevi-Kilol*  
Doctoral candidate

SUN Immunology Research Group, Faculty of Medicine and Health Sciences,  
Stellenbosch University, South Africa

### *Combating tuberculosis contamination in diabetics*

After initially wanting to become a doctor, this young Congolese woman, born to a family of eight children, finally chose scientific research. This led her on a long journey from obtaining her scientific baccalaureate in Kinshasa (specialising in biology and chemistry) to her current doctoral studies in South Africa.

Her father, an accountant, had always supported his daughter in her desire to embrace a career in science, and it was he that offered her the opportunity to go abroad to pursue her studies. Once she was accepted for a Master's degree at South Africa Stellenbosch University, she began taking English classes and focused on biomedical sciences. At the same time, she had to work as a laboratory technician and undertake other 'odd jobs' to support herself for five years. *"Neither at the time of my marriage, in 2016, nor even when I became mother to a little boy in 2018, did I stop conducting my experiments until my ... ninth month of pregnancy. Fortunately, I can count on my husband who supports me. He oversees everything at home."*

She will defend her doctoral thesis at the end of 2020, which is part of a bigger project funded by the United States' National Institutes of Health. Indeed, research on the morbidity of type 2 diabetes, which is very damaging to the immune system and linked to tuberculosis contamination, is being conducted across the world. This is a sensitive subject for Ms. Kunsevi-Kilola, one of whose sisters suffered with tuberculosis.

Her research requires a considerable technical platform since it involves determining the association between tuberculosis and diabetes in macrophages, through bronchoalveolar lavage, inside the lungs of diabetic patients. *"Taking blood for tuberculosis research is easier than doing bronchoalveolar lavage, but we know that the tuberculosis bacterium, when inhaled, first lodges in the lungs, where it meets the alveolar macrophages, which are there to immunise us."*

Keen to pursue post-doctoral studies in South Africa, Ms. Kunsevi-Kilola nevertheless dreams of returning to the Democratic Republic of Congo to create a research laboratory and introduce the advanced technologies she has seen in other countries. *"The message I want to convey through the L'Oréal-UNESCO For Women in Science Sub-Saharan Africa Young Talents Awards is that there is no career in Africa today that women cannot embrace, be it medicine, law or science. I am ready to encourage young Congolese girls to join me."*

*“Determining the association between tuberculosis and diabetes inside the lungs of diabetic patients”*



*Ines  
Ngoh*

*Doctoral candidate*

Disease Control and Elimination theme/Malaria Population Biology Group/MRC Unit, the Gambia at London School of Hygiene & Tropical Medicine (LSHTM), the Gambia, University of Buea, Cameroon

### *Understanding genetic variations, used by natural populations of malaria parasites*

Being born in Limbe, in the English-speaking South-West region of Cameroon, Ines Ngoh initially wanted to explore a career in medicine, before finally deciding on teaching and research. *"I am an inquisitive person, fascinated by discovery. I always want to be able to explain how and why things happen the way they do. By the time I'd reached secondary school and served as the health prefect of my college, I'd made the conscious decision to study and pursue a career in sciences."*

After pursuing undergraduate studies in biochemistry, Ms. Ngoh left her country: *"I had to put in a lot of extra hard work during this period, as I was expecting my first child. I was in a foreign country away from the support of any family member and was often discriminated against in group discussions, journal presentations and even laboratory sessions for being pregnant."*

Thanks to a generous child support fund from the University, she was able to undertake her Master's degree in Biomedical Science at the University of Nottingham, United Kingdom, completing her studies as effectively as possible while becoming a mother. For Ms. Ngoh, who now has three children, striking a balance between work and her personal life has been daunting. *"The travel that keeps me away from home, the long hours of work even when I am home... The pressure of societal prejudice on my ability to be a mother. I had to step away from education for four years [2012 to 2016] to be able to look after my children before I could think about going for my PhD."*

In 2017, she began her doctoral research with the Disease Control and Elimination theme/Malaria

Population Biology Group/MRC Unit, the Gambia at LSHTM, focusing on using transcriptomics to understand genetic variants that drive the degree of disparity in erythrocyte invasion pathways used by natural populations of malaria parasites. To this end, characterisation of putative invasion antigens and large-scale population phenotypes are required in order to guide the prioritisation of antigen targets for the development of interventions (particularly vaccines) that block erythrocyte invasion by *Plasmodium falciparum* parasites.

Now, Ms. Ngoh faces a new challenge in being close to her family - seeking adequate funding for her post-doctoral project - as well as a university with infrastructure and facilities that will enable her to continue collaborative research in Cameroon. *"I have constantly been away from my family since 2017. That is why I wish to spend the next years being around my children and husband as much as possible, even though it is going to be challenging."*

*“Using transcriptomics to understand genetic variants linked to natural populations of malaria parasites”*



*Francine  
Tankeu*  
Doctoral candidate

Biochemistry Laboratory, Faculty of Sciences, University of Yaounde 1, Cameroon

## *Treating leukemia by allying biochemistry to the power of plants*

Biochemist Francine Tankeu developed a love of science from an early age. Born in Bafoussam, Cameroon, she is one of seven siblings, all of whom are scientists. In addition, her younger sister *“was born with imperforate tear ducts, which required a lot of care in the early days of her life. However, at the time, there was no pneumologist where we lived. My father had to travel twice a week to get my sister treated. This initially inspired me to think about becoming a doctor.”*

However, it was not medicine but biochemistry that Francine Tankeu decided to study after secondary school, when she became a student at the University of Yaoundé 1. *“The loss of a friend to cancer really led me to want to use research to solve public health problems.”*

Her journey as a woman scientist has not been easy, and female researchers still face many prejudices in Cameroon today. *“The majority of teachers prefer to work with male doctoral students due to their perceptions of women female doctoral students’ inevitable responsibilities, as they see family commitments and motherhood as a brake on the advancement of women’s studies.”* Despite the persistence of this glass ceiling, Ms. Tankeu, recently married, decided to continue her doctoral studies. Through her research, she is testing ethanolic extracts of *Syzygium guinéense* leaves, usually used as a spice in Cameroonian cuisine, on a panel of cancer cells from different origins (cancers of the cervix, breast and leukemia).

In her thesis, which she will defend in 2020, she seeks to demonstrate the anti-leukemic properties *“in vitro*

*and in vivo”* of this spice, in order to confirm its potential as a natural source of new molecules to fight against acute myeloid leukemia, also known as bone marrow leukemia. To do this, she transplants, via preclinical tests, acute myeloid leukemia cells, in order to follow the evolution of tumour volume within precise biochemical parameters. Her objective is to understand at what level the molecules present in these extracts begin to act. Ms. Tankeu also conducts toxicological studies to help ensure the safe use of these fractions. *“The preliminary results already obtained showed that two fractions of the ethanolic extract of Syzygium guinéense leaves are good candidates for the development of new molecules against acute and chronic myeloid leukemias.”*

Her most pressing daily challenge, however, is linked to the insufficient quality of the technical platform where she conducts her research. But Ms. Tankeu remains optimistic. *“I dream of a long career in research, but also to work at a university permanently. I hope to encourage many young Cameroonian women to study science by acting as a role model and sharing my knowledge. To achieve this goal, I will strengthen my capacities through new scientific experiments and training, and the L’Oréal-UNESCO For Women in Science Sub-Saharan Africa Young Talents Awards is an important step on that journey.”*

*“Demonstrate  
the anti-leukemic  
properties of a spice”*



*East  
Africa*



*Becky  
Nancy Aloo*  
*Doctoral candidate*

Life Sciences Laboratory, Nelson Mandela African Institution  
of Science and Technology, Arusha City, Tanzania

## *Identifying novel species of Irish potato rhizobacteria to enhance yields*

Born in Kisumu, Kenya, to a family of teachers, Becky Nancy Aloo grew up alongside her four younger siblings, encouraged by her mother to pursue her interest in biology. She later married a teacher and has four children. Having determined to be a scientific researcher, she eventually moved to Arusha City, in the North of Tanzania, to enrol for her PhD. *"It takes a lot of courage and determination to meet research requirements with family demands. Sometimes, I have some difficulty accepting that, especially when I need to travel. My children are proud of their mother as I am proud of them. They know a lot about the bacteria I am studying."*

Through her PhD research, she is exploring the 'Irish potato', a common potato popular for making French fries. However, it has low nutrient uptake ability due to poor root development and is also one of the most fertiliser-intensive crops. *"Farmers often apply a lot of chemical fertilisers to maximise yields, leading to environmental degradation, water pollution and greenhouse gas emissions. So we must find alternative fertilisation mechanisms."*

At the Nelson Mandela African Institution of Science and Technology Life Sciences Laboratory, she evaluates native Irish potato rhizobacteria in order to identify certain unique species that can be formulated into bio-fertilisers and used to enhance yields of this potato. *"The bacteria are characterised, evaluated and screened for plant*

*growth-promoting abilities. Promising strains are further subjected to screen house experiments to identify novel species that can be formulated into bio-fertilisers and used for field trials."*

Being a great admirer of African women who have attained doctoral degrees, she sees herself further researching ecological engineering and lecturing at the University of Eldoret, in Kenya, once she completes her thesis in 2020. Her aspiration is to use Science to help solve some of the societal problems facing humanity and mentor young girls to study science. *"Being given the L'Oréal-UNESCO For Women in Science Young Talents Awards has strengthened my resolve to build on my mentoring experience to become a role model for young women scientists. I want to encourage more girls to take up science courses and careers, and I believe we must seize the opportunity to do this, as perceptions of women in sciences are changing too slowly."*

*"Find alternative  
fertilisation mechanisms  
for the Irish potato"*



*Dr. Nowsheen  
Goonoo*

*Post-doctoral researcher*

Biomaterials, Drug Delivery & Nanotechnology Unit, Centre for Biomedical and Biomaterials Research (CBBR), Moka, University of Mauritius

*Avoiding amputations by enhancing healing in diabetic wounds*

As the daughter of a nurse in Mauritius, Dr Nowsheen Goonoo first wanted to become a medical doctor, before choosing chemistry for her undergraduate and post-graduate studies. *"I wanted my research to be applied to improve health and help the local community."* She has since done this with great success. For example, part of her undergraduate research led to the University of Mauritius securing its first patent in 2013.

During her doctoral studies, she developed a new class of biodegradable and biocompatible material which could be used in the biomedical field. In particular, by applying fundamental principles of polymer chemistry, she could control the rate of degradation, flexibility and brittleness, as well as inflammatory responses of these novel materials. A Swiss company subsequently used the materials to create prototype annuloplasty rings. Dr Goonoo has investigated the performance of these fabricated rings through a series of tests.

She is now working on diabetic foot ulcers (DFUs), a major issue in Mauritius, leading to approximately 450 amputations each year. *"DFUs and other diabetes-related complications are adding significantly to the economic burden of Mauritius. This is mainly due to ulcer management and slow healing, which leads to prolonged admissions and surgical interventions. Hence, there is an urgent need to reduce the healing time of DFUs, thereby reducing the number of hospital admissions and amputation rates."* By exploring the potential of using natural

polymers extracted from locally available land and marine resources as a component of nanofibres, she hopes to improve healing in diabetic wounds.

Dr Goonoo is also contributing to improving the stature of Mauritian research on a global scale. *"Recognition of the high level of research being conducted in Mauritius by international organisations is changing perceptions locally"*. However, the lack of role models in sciences has *"brainwashed"* Mauritian women into thinking they are only suited to artisanal activities, rather than high tech jobs, she believes. *"Thanks to the progress of research, there are now lots of opportunities in the Centre for Biomedical and Biomaterials Research, such as large scale cultivation of seaweeds, working on skin, bone or tendon regeneration."* So, Dr Goonoo is actively encouraging them by participating in science fairs, community outreach activities and by giving talks in secondary schools.

*“Reducing the number of hospital admissions and amputation rates”*



*Ruth  
Kihika*

*Doctoral candidate*

Behavioural and Chemical Ecology Unit, icipe/Department of Chemistry,  
Kenyatta University, Kenya

## *Identifying gene targets that correlate with biochemical pathways responsible for plant resistance to parasites*

Born in Nairobi, Kenya, Ruth Kihika, was raised by her grandparents from an early age. When she began attending a public primary school in a rural village, she could see the lack of facilities available for science. *“My fascination for science started very early, thanks to my primary and high school science teachers. I knew that I wanted to study chemistry.”*

The further she progressed in her studies, the fewer the number of female students and lecturers Ms. Kihika encountered. She eventually identified her field of research, chemical ecology, while completing her Master’s degree in sciences. For her PhD, she decided to focus on root knot nematodes (RKNs), a worm that parasitises numerous crop species and presents a risk to food security in Kenya and across Africa by inhibiting the ability of its host plants to absorb water and nutrients.

*“The global yield losses associated with RKNs infection is estimated at US\$ 157 billion annually. The economic impact for African smallholder farmers is yet to be established, but they can experience crop production losses of 40-100%. The mitigation measures deployed to control these parasites have had minimal success in addition to the most effective nematicides being discontinued due to their negative impacts on the environment and non-target organisms”.* To address this challenge and contribute to the development of alternative, sustainable strategies, Ms. Kihika is investigating chemical communication in plant-RKN interactions by targeting the infective host-seeking stage of the RKNs, which represents a potential weak link in their life cycle.

She is therefore studying *“susceptible and resistant tomato plants”* in order to determine biochemical pathways that can be manipulated to engineer RKN-resistant crops, and to identify naturally occurring compounds with nematocidal effects for use in semi-field set-ups. *“This will lead to the identification of gene targets that correlate with biochemical pathways responsible for plant resistance to RKNs. In this way, we will eventually be able to develop resistant tomato varieties and provide recommendations on candidate compounds for field testing.”*

A great admirer of Kenyan Nobel Prize winner Wangari Muta Maathai, this mother of two boys is married to *“a very supportive husband”*. However, balancing family and working life in the research world is sometimes difficult. After completing her thesis in two years’ time, she wants to pursue post-doctoral studies. *“My grandmother was a leader in the Green Belt movement. She mobilised the community to adopt agroforestry for environmental conservation. This is the type of research I want to do. It motivates people and presents a great opportunity to contribute to society. The L’Oréal-UNESCO For Women in Science Sub-Saharan African Young Talents Awards is a great first step to achieve my goal.”*

*“Develop resistant tomato varieties and provide recommendations on candidate compounds for field testing”*



*Dr. Jacqueline  
Kyosiimire-Lugemwa*

*Post-doctoral candidate*

MRC/UVRI & London School of Hygiene & Tropical Medicine (LSHTM),  
Kampala, Uganda

*Generating comprehensive data on the pre-existing immune status and its effect on vaccine responses*

The loss of both her parents while in secondary school was devastating for this biologist born in Uganda. It took Dr Jacqueline Kyosiimire-Lugemwa a while to recover and find her zeal to study again. She started her career with a Diploma in Science and Technology. When she began working at the Uganda Virus Research Institute (UVRI), her passion for research was reborn and she managed to return to academia. *“After two years of working, I was determined to go back to university and pursue a degree in Biomedical Laboratory Technology. That was the best decision I made at that time.”*

It was a long journey from her workplace in Entebbe to Makerere University in Kampala, and due to heavy traffic, she would often arrive late to class. Nevertheless, she had to maintain her job to pay for her undergraduate classes. *“After five years later, my supervisor’s colleagues at Imperial College London wanted to support someone to take lead on a project Little did I know that this project would lead me to a PhD offer.”* After graduating with her BSc Dr Kyosiimire-Lugemwa got married and had children. *“It was challenging, but the support from my husband and family has been great.”*

Focusing her research on how the human immune system fights disease has brought many opportunities. Her doctoral dissertation explored *“Immunologic, Virologic and Genetic Studies of HIV-1 infected Long-term Non-progressors (LTNP) in Uganda”*. As a Co-Principle investigator, she obtained a grant from the Medical Research Council in London to finance four years of research on Microbial translocation and immune activation. In 2015, she

received the IAVI Investigator Initiated Research funding award to undertake research on the *“Effect of pre-existing immune status on Hepatitis B vaccine-mediated immune responses among HIV negative adult Ugandans”* and was accepted as Principal investigator. *“This project was inspired by my curiosity as to why some people generate favourable immunological responses to vaccines yet others don’t.”*

In 2018, she received a fellowship from the Quantitative Biosciences Institute at the University of San Francisco (UCSF) for women scientists from developing countries to study the *“Differential expression of Proteins among HIV infected Long Term Non Progressors and Rapid Progressors”*. She subsequently spent one year at the Krogan Lab, UCSF in San Francisco, California. *“I will now focus on broadening my research on the pre-existing immunity and effects on vaccine responses by addressing further modulatory and regulatory effects and strengthening my collaborations.”*

She is very optimistic concerning her own future as well as about research led by African women scientists. *“I feel that the world is opening up to supporting African women scientists in a special way. However, the opportunities available are still too few. I appreciate the help from women and men who support female scientists, like my supervisors and mentors.”*

*“Understanding how  
the human immune  
system fights disease”*



*Dr. Henintsoa Onivola  
Minoarivelo*

*Post-doctoral candidate*

Biomathematics Group, Mathematics Division,  
Stellenbosch University, South Africa

*Using mathematical modelling and computational simulations to predict the fate of insect pollinators*

As far as Dr Henintsoa Onivola Minoarivelo can remember, mathematics has always been a part of her life. Growing up in Madagascar's capital, Antananarivo, she graduated at the local university before enrolling at the African Institute for Mathematical Sciences (AIMS) for a postgraduate diploma. This meant moving to South Africa. Being selected by AIMS, which promotes the best mathematical scientists all over the continent, was a great support for her scientific career.

She subsequently undertook her MSc at the University of Stellenbosch in South Africa, continuing there to pursue her PhD, and specialising in a discipline at the interface between mathematics and ecology, which did not exist in Madagascar, in order to explore the evolution of interaction between animals and plants. *"Mathematical ecology unifies diverse empirical observations in the natural world into mathematical models based on algorithms. With the help of computational simulations, mathematical models are used to predict possible future scenarios of the ecosystem under different circumstances. The predictions help to manage pressing challenges faced by ecosystems more effectively."*

For her post-doctoral studies, conducted in the Biomathematics Group of Stellenbosch University, Dr Minoarivelo is focusing on the interactions of common insects like bees with the environment. *"Climate change is currently one of the major problems causing biodiversity loss. In the present project, we use mathematical modelling and*

*computational simulations to describe the way species interact between themselves in a community, and to predict the fate of these interactions in the face of climate change."* Indeed, the interactions of insect pollinators with their pollinated plants are crucial to global food security, producing one third of the world's crop production.

Dr Minoarivelo is married, and had her first child two years ago while working as a post-doctoral fellow. *"I did not have proper maternity leave. So it was hard. But I have no doubt that female scientists can achieve as much as their male counterparts. Moreover, opportunities for women scientists are increasing in Africa."*

*"Use mathematical modelling to describe the way species interact between themselves in a community"*



*Southern  
Africa*



*Celia Moffat  
Joel Matyanga*  
Doctoral candidate

Clinical Pharmacology Laboratory, Harare, University of Zimbabwe, Zimbabwe

## *Using the interactions between a herbal traditional medicine and first line treatment of HIV/AIDS*

Celia Moffat Joel Matyanga got her love of figures from her father, a school headmaster, who passed away when she was a teenager. From her mother, a nurse, who raised her five daughters as a widow, it was the love of healing people. *“As much as it was hard to grow up in a family with only one breadwinner, my sisters and I were very determined to make our mother proud.”* And she has done by obtaining her undergraduate degree in pharmacy, her Master's degree in pharmacology and, now, a PhD from the Clinical Pharmacology Laboratory of the University of Zimbabwe in Harare.

For her research, she chose a traditional medicine derived from a native African plant with pharmacological properties. The herbal medicine, known as 'African Potato', is traditionally used to boost the immune system and also for its healing properties in people living with HIV. *“Studies have shown that people taking drugs for HIV/AIDS also use herbal medicines. Patients do not inform their health care providers that they also take herbs, so there can be adverse drug-herb interactions. It is not known if there are interactions between African Potato and some antiretroviral (ARV) drugs.”*

Through her thesis, which she is set to complete in the next two years, Ms. Moffat Joel Matyanga will try to determine if African Potato alters the drug levels. *“My research also aims to determine if using African Potato is safe in people living with HIV/AIDS and taking ARVs. This study will be conducted in HIV-infected patients. It will complement work done*

*by other researchers and serve as a pilot study to determine whether African Potato can be used alongside the first line treatment of HIV/AIDS.”*

Ms. Moffat Joel Matyanga is the mother of two children, five and seven, and lives with her mother. *“In Zimbabwe, where the pressure of household duties is tremendous, the challenge of balancing studies with motherhood is still present for female researchers, especially in sciences.”*

However, she remains optimistic, considering the infinite potential of research in her field, and wants to pursue post-doctoral studies in Africa. In the meantime, she is a lecturer for pharmacy undergraduate students. *“Very often, girls are afraid to study sciences. They should be encouraged more starting from high school, and have access to mentoring.”*

*“Determine if African Potato, an herbal medicine nowadays used for its healing properties in people living with HIV, alters the drug levels”*



*Mweete  
Nglazi*

*Doctoral candidate*

University of Cape Town, South Africa

*An analysis of overweight and obesity in South Africa:  
the case of women of childbearing age*

With the encouragement of her mother, a high-ranking civil servant with a Master's degree in Economics, she entered the University of Zambia in 2001 to study microbiology as a major. *"Sciences being male-dominated, people tend to think that you have to prove yourself more if you're a woman. Otherwise, they may discriminate against you on certain aspects."* Mweete Nglazi undertook a Master's degree in Public Health at the University of Cape Town in South Africa, financing her own studies, with her parents' support. Her father is a retired Area Manager in the airline industry. Her older siblings are also highly educated, but she is the first in her family to aspire to obtain a PhD.

Later, she became an Operational Research Fellow at the Desmond Tutu HIV Foundation in the field of HIV/AIDS and tuberculosis, but could not continue due to a lack of funding. With a good track record of high quality peer-reviewed publications, she earned various positions in top academic and research institutions such as the University of Cape Town, the South African Medical Research Council and Stellenbosch University.

There, she worked on the South African National Burden of Disease Study and South African Comparative Risk Assessment, which were aimed at understanding the causes of death and morbidity for the South African population, as well as assessing the contribution of risk factors commonly associated with non-communicable diseases. *"Overweight and obesity in adults are burgeoning problems in Sub-Saharan Africa - particularly in South Africa - and contribute substantially to premature death and disability from non-communicable diseases."*

Her dissertation, to be completed by the end of 2020, will analyse and interpret nationally representative data on the prevalence, determinants and socio-economic inequality in overweight and obesity in South Africa. In this regard, she has focused on a specific segment of the population - non-pregnant women aged 15 to 49 - and on a specific period from 1998 to 2017. *"This topic has been well studied, however, few researchers have focused on women of childbearing age, and only limited studies have been conducted in South Africa. These women are at risk of obesity-related maternal and child health problems such as infertility, miscarriage, babies having congenital abnormalities and other adverse obstetric outcomes."*

Married to an academic, who is also pursuing a PhD in sociology, Mweete Nglazi sees a bright and committed future for herself. *"Being a teaching assistant, I really enjoy the contact with the students, especially young women. My wish is to be a professor and to work in a United Nations agency. I wish to do work that informs policy and contributes to people's wellbeing in South Africa, in my own country Zambia, and across the world."*

*"Analyse data on the prevalence, determinants and socio-economic inequality in overweight and obesity in South Africa"*



**Georgina  
Nyawo**  
*Doctoral candidate*

Division of Molecular Biology and Human Genetics, Faculty of Medicine  
and Health Sciences, Stellenbosch University, South Africa

## *Assessing the microbiome in patients with tuberculosis to develop novel diagnostic interventions and therapies*

As the youngest in her family, with all of her siblings holding university degrees, Georgina Nyawo was the only one to undertake a career in science. *"I love scientific experiments and I have always been very inquisitive. However, when you are a young woman in Zimbabwe with an opportunity to study further, there is a lot of pressure to take on the most common studies which provide job security more rapidly."*

In view of the hardships in Zimbabwe she decided to move to South Africa to pursue her undergraduate studies in biochemistry and microbiology. *"This made me less naïve despite my young age, as I became more aware of the situation around me."* Being in a foreign country, she knew that to succeed, she would need to perform better than her competitors, especially when it comes to finding funding for her research.

For her PhD, she joined the Clinical Mycobacteriology & Epidemiology (CLIME) group to be able to dedicate her research to tuberculosis. CLIME is part of the Centre of Excellence in Biomedical Tuberculosis Research at the Centre for Tuberculosis Research at Stellenbosch University's Faculty of Medicine and Health Sciences. *"Being still the single biggest infectious cause of death in the world, tuberculosis poses a major health concern in Africa. Understanding the effects that tuberculosis can have on microbial composition in patients (and vice versa) is therefore of great importance to human health."*

In her thesis to be finished in 2020, she will characterise bacteria inhabiting the human bodies in patients with tuberculosis and compare it with tuberculosis patients by using gene sequencing. Further, she will assess the host immune system in relation to the microbiome. *"This improved understanding may help explain variable clinical outcomes and lead to the development of novel therapeutic and/or diagnostic interventions that improve outcomes by monitoring or changing the microbiome."*

Ms. Nyawo already has a clear idea of how she wants to pursue her career in the future: *"As a female scientist, I believe it's important to empower young people. I have volunteered in different tutoring projects over the years, and I've noticed that it is important to start mentoring kids at an early age. I also want some foreign exposure and further training to build on my knowledge and identify opportunities for collaboration during my post-doctoral studies. Then, I will come back home."*

*"Understanding the effects that tuberculosis can have on microbial composition in patients"*



*West  
Africa*



*Regina  
Abotsi Esinam*  
Doctoral candidate

Department of Molecular and Cell Biology & Institute of Infectious Disease  
and Molecular Medicine, University of Cape Town, South Africa

## *Determining antibiotic resistance in potentially pathogenic bacteria present in the respiratory tract of HIV-infected children*

The youngest child and only girl in a family of six in the Ghanaian town of Anloga (Volta Region), Regina Abotsi decided to become a research scientist from an early age. *“As a child, I would always read the label and chemical composition of every single drug I came across. I was also intrigued by herbal preparations that seemed to have similar magical effects.”* Her father, who had already encouraged his sons to pursue scientific careers, was even more keen to encourage his daughter’s interest in science.

After completing her undergraduate studies in Pharmacology, she moved to South Africa for her postgraduate studies due to limited local funding opportunities in Ghana. Her postgraduate studies were largely funded by schemes that seek to promote African women in Science, Technology, Engineering, and Mathematics Science Technology.

Through her PhD, she seeks to investigate the long-term effect of azithromycin antibiotic treatment on the respiratory microbiota of HIV-infected children with chronic lung disease. Chronic lung disease (CLD) is the most common chronic complication of HIV-infected children under 15, the majority of whom - around 85% - reside in Sub-Saharan Africa. Three out of ten of these children present with a specific type of CLD called obliterative bronchiolitis (OB-CLD). Although the cause is unknown, it is suspected to result from frequent respiratory infections and chronic inflammation that is seen in HIV infection. *“How and the extent to which these phenomena can occur in this HIV-infected cohort in an African setting is unknown. Therefore, my project seeks to investigate the effect of long-term azithromycin treatment on antibiotic resistance and*

*the respiratory microbiota of children and adolescents participating in a clinical trial”.* The findings of Ms. Abotsi’s study will be central to providing evidence-based decision-making with regards to the use of azithromycin treatment for HIV-associated OB-CLD among children and adolescents in Sub-Saharan Africa.

Upon the completion of her dissertation, she will pursue further specialised training. Then, she would like to take up a post-doctoral fellowship so she can further equip herself with the latest skills and technologies in antimicrobial resistance and human microbiome research. *“I then see myself taking up an academic position in a research institute where I will lead innovative approaches in this domain and help train the next generation of young African scientists, especially women, through teaching, training and mentorship”.* Ms. Abotsi also sees herself establishing a non-governmental organisation to provide mentorship programmes for girls in deprived and marginalised communities.

*“Investigate the effect of long-term azithromycin treatment on antibiotic resistance and the respiratory microbiota of children and adolescents”*



*Fatoumata  
Ba*  
*Doctoral candidate*

Physiology Laboratory, UFR for Health Sciences, University of Gaston Berger, Saint-Louis, Senegal

### *Studying sleep to better fight metabolic diseases*

For Fatoumata Ba, the love of research and the passion for science is a family affair. *“At home, as a child, thanks to my brothers and sisters, who are engineers and doctors, I have always talked and heard a lot about science.”* Herself a brilliant student, she obtained her scientific baccalaureate at just 17 years old. She then decided to pursue medical studies, specialising in psychiatry. After a successful internship, which she finished first in class, she began her career in a psychiatric ward in Dakar. At the same time, she continued her studies in biological and medical sciences, then in physiology, a transversal discipline. *“I have now finally been able to combine my two passions, which are the study of sleep and that of epilepsy.”*

Ms. Ba intends to defend her doctoral thesis, for which she has great ambitions, in 2020. She was able to join the Physiology Laboratory at Gaston Berger University with a research assistant position, which has allowed her to research obstructive sleep apnea-hypopnea syndrome (OSAHS). This involves snoring, apnea or breathing pauses during sleep, which occur when the air no longer passes through the airways, disturbing the sleeper. The result is a state of intermittent hypoxia, a mismatch between oxygen requirements and intakes, which are harmful to organs, especially to the brain. *“Studies on sleep are very recent and almost unexplored in Senegal, due to lack of adequate equipment. My research focuses on measuring the effects of this syndrome on arterial function and the cardiovascular risks that may result.”*

Ms. Ba evaluates the pathophysiological factors responsible for the OSAHS from which the 20 patients of her panel suffer, as well as the consequences on their

metabolism, the alteration of the endothelial function (the layer of cells lining the interior of blood vessels) and arterial stiffness. Eventually, she wants to follow some 50 patients, expanding her sample so that her results are even more convincing. *“My dream is that, one day, the Physiology Laboratory at Gaston Berger University will become a reference in the study of sleep, thanks to the support of partner laboratories; and that it will develop expertise on the genetic and environmental factors to the origin of the OSAHS. One of the unexplored fields, for example, concerns the microbiota. Many diseases are linked to the dysfunction of this intestinal flora and we are equipping and forming teams locally. I will study that for my post-doctoral project.”*

For this mother of two girls aged nine and two, married to a doctor also specialising in psychiatry, it has not always been easy to combine a researcher’s curriculum with family life. *“I was ready to leave for a year in France for an associate role, but I gave it up when I learned that I was pregnant with my first daughter.”* While Ms. Ba has overcome this challenge, she recognises that pursuing a career in scientific research remains more complicated for women, *“hence the importance of continuing to pass the torch.”*

*“Measuring the effects of obstructive sleep apnea-hypopnea syndrome (OSAHS) on arterial function”*



*Dr. Mercy  
Temitope Bankole*

*Post-doctoral candidate*

Africa Centre of Excellence for Mycotoxin and Food Safety (ACEMFS),  
Federal University of Technology, Minna Niger State, Nigeria

*Healing open wounds faster and better  
thanks to a nanocomposite*

Filled with the creativity that science inspires, this Nigerian chemist, mother of three girls, “*who are all enamoured with my research field*”, has never stopped mixing molecules. A few years ago, Dr Mercy Temitope was badly injured by a domestic fire. After three months in bed, her wound had not yet healed. She had the idea to combine honey, known traditionally for its medicinal properties, with antibiotics to accelerate the healing. Later, she brought the idea of developing industrial patents for her innovation to the Federal University of Technology in Minna Niger State, where she is based.

After her undergraduate and graduate degree in applied chemistry, she dedicated her PhD to researching carbon nanotubes. For the first time, they were produced in a Nigerian laboratory, and further developed for wastewater treatment. Later, she became more attracted to gold nanoparticles for drug delivery. “*Pursuing career in science has given me the ability to address some of the major challenges, such as safe water, good health, zero hunger and new infrastructure. It has enabled me to contribute to advancing sustainable development.*”

Treating wounds effectively is a serious problem in Sub-Saharan Africa due to the emergence of multi-antibiotic resistance bacterial (MAR) infections to antimicrobial drugs, low penetration and local tissue reaction. Through her post-doctoral research, she is focusing on green synthesis and applying silver-gold doped iodine nanocomposite capped with honey to provide a better option for the treatment of MAR infections in open wounds. “*The nanoparticles will be green synthesised from Azadirachta indica*

*and Ageratum conyzoides extracts, doped with iodine and stabilised with natural honey. I am expecting the developed nanocomposite to give high surface area per unit mass. This will lead to greater antimicrobial activity and target delivery with low toxicity, anti-inflammatory effects and neovascularisation of the nanocomposite towards the mammalian tissues.*”

To play a significant role in Africa's development, Dr Mercy Temitope Bankole sees herself developing novel scientific materials to help meet people's needs, and mentoring others - particularly younger women - in order to sustain innovative scientific research and education. “*As an African woman, I want to see a future of revolutionary scientific impact and to be among the world's women Nobel laureates for science.*”

“*Combine honey  
with some antibiotics  
to accelerate  
the healing*”



## Najah Fatou Coly

Doctoral candidate

Biochemist and Molecular Biology, Faculty of Medicine, Pharmacy and Odontology,  
University Cheikh Anta Diop of Dakar, Senegal

### *Better understanding infections during delivery to fight neonatal mortality*

At first a pharmacist, Najah Fatou Coly gradually turned to biochemistry and molecular biology. She was inspired to be a scientist at an early age, when she observed her father, a laboratory assistant, who was often asked to relieve the evils of the neighbourhood, prescribing medicine. After obtaining her baccalaureate in sciences, she began a BSc degree in pharmacy, subsequently passing an internship contest in the fifth year to move towards research in biology.

Married to a pharmacist, like herself, Ms. Fatou Coly is the mother of two children, aged six and two years old. *"The adjustment was not easy because my first baby cried a lot at night, but with perseverance and the support of my husband, I was able to finish both my degrees. My passion for science and my desire to succeed encouraged me to overcome all the difficulties that arose."*

Having joined the Laboratory of Biochemistry and Molecular Biology at the Faculty of Medicine, Pharmacy and Odontology at the Cheikh Anta Diop University of Dakar, she plans to defend her doctoral thesis at the end of 2020. *"In Sub-Saharan Africa, 1 in 36 children die in the first month of life, compared to 1 in 333 children in the world's highest-income countries. In Senegal, this neonatal mortality is estimated at 19 per 1,000. 7% of these deaths are due to neonatal infections of bacterial origin."*

Managing these infections remains challenging due to the non-specificity of the markers used to make a diagnosis. Studies have shown that newborn babies of women with high concentrations of calgranulins and defensin amino acids have a higher risk of early sepsis. Ms. Fatou Coly's research therefore consists of highlighting those markers

in the peripheral blood of the newborn so that they can be used as early markers for the diagnosis of neonatal bacterial infections. The aim is to allow early management of such infections in newborns, thereby reducing the risk of neonatal mortality.

For her research project, she has obtained a grant from the France-Senegal 2019 Research Support Programme of the French Embassy in Dakar. *"After that, my main challenge will be to have an equipped research laboratory within the university that houses me in order to teach and pursue other projects. It will also be my time to look for international partners for future fruitful collaborations."* For Najah Fatou Coly, passing on knowledge to future generations is essential. She particularly wants to encourage girls by showing them that it is possible to succeed in science as a woman, wife or mother, and therefore to be independent. *"For that, you have to believe in yourself and in your abilities, and give yourself every means to succeed."*

Thanks to the L'Oréal-UNESCO For Women in Science Sub-Saharan Africa Young Talents Awards, she also intends to make herself known as a young woman researcher in Africa and, in particular, in Senegal. *"I hope this will open up opportunities for me to collaborate with international research teams. It may also give me the chance to access other scholarships."*

*"Allow early management  
of infections in newborns,  
thereby reducing the risk  
of neonatal mortality"*



*Funmilola  
Fagbola*  
Doctoral candidate

Simulation and Software Development Laboratories, Department of Computer Science and Engineering, Ladoke Akintola University of Technology, Ogbomosho, Nigeria

## *Detecting misinformation with proof and deep learning models, and nature-inspired algorithms*

Her interest in computer science arose, when, as a teenager in the city of Osogbo, in Osun State, Funmilola Fagbola witnessed the installation of an ATM machine. *"The idea for becoming a computer scientist occurred at this very moment. And my older brother, being himself a scientist was, of course, very supportive."*

To realise her dream, she had, first, to enrol in Computer Science and Engineering for her undergraduate and graduate degrees. But pursuing her academic journey, notably her Master's degree, which she completed with distinction, *"has not been a bed of roses."* Similarly, producing a research thesis and writing papers for publication in reputable journals was also challenging. Due to a lack of research funds, she could not access real-world data and saved costs by relying solely on open source datasets, server interfaces offered by online search engine, open integrated development platforms and free online libraries.

For her PhD studies, which she is due to complete in 2020, Funmilola Fagbola is focusing on detecting misinformation in online social networks. This is a highly challenging task due to the lack of credibility checks or means to verify senders' identities. Secondly, there is so much information sent every day and, among it, numerous bots, 'fake news', rumours and sheer disinformation. *"Most prevailing solutions to misinformation detection adopt deep learning models due to their high computational efficiency and accuracy. Although these approaches are highly proactive, the recent proliferation of*

*adversarial-inclined misinformation, for example, 'deep fakes' [completely untrue fake news], has revealed alarming trends in the growing ability of misinformation to resist detection."*

She has therefore developed an adaptive feature extraction and learning model that could, (i) capture features revealing the credibility weight of data; and (ii) generate a credibility inference and adversarial-proof model with nature-inspired algorithms and deep learning models.

Ms. Fagbola sees herself becoming a Professor of Computer Science with a strong track record of research publications in machine learning interdisciplinary domains with relevant applications to real-life problems. *"I also see myself owning a Non-Governmental organization (NGO) where young girls would be encouraged and supported to study science to help promote sustainable development in Africa."* In this role, she would also play a contributing role in achieving gender equality in scientific research, and remains committed to make this a reality.

*“Detecting  
misinformation in online  
social networks”*



*Fatou  
Joof*

*Doctoral candidate*

Medical Research Unit the Gambia Laboratories-Keneba field station,  
Open University, Banjul, The Gambia

*Developing new antimalarial strategies  
by tracking genetic mutations*

Although there are no scientists in her family, Dr Fatou Joof, from Banjul, capital city of the Gambia, always wanted to be a medical doctor. *“I was the first of my family to go to university. Despite all the hardships in the Gambia that prevent girls from going to school and, significantly, undertaking higher education, I always knew I wanted to study enough to be able to save people’s lives.”* She was first inspired to study medicine aged 12, when she looked through her first ‘First Aid’ booklet at school.

Dr Joof pursued her undergraduate studies in biology at the Mohamed 5 University in Rabat, Morocco, and went on to complete her graduate studies in Molecular Parasitology at Manchester University, United Kingdom. Thanks to the support of her parents, she eventually overcame the challenges posed by the distance. *“I always had a strong family support system. They never hesitated to send me a plane ticket to visit when I felt low or demoralised.”*

In 2011, she joined the Gambia’s Medical Research Council Unit and worked as a scientific officer. After moving to the Keneba field station in 2017, she began her PhD research on genetic mutations of red blood cells that malaria introduces to the human genome. *“In fact, since sickle cell and the other hemoglobinopathies appeared, no other human genetic mutation has been observed to offer such protection against malaria. However, currently very advanced technologies suggest that there could be more mutations strongly associated with malarial protection.”*

Indeed, host genetic factors play an important role in the outcome of a malarial infection. Recent genome wide association studies (GWAS) identified new

mutations associated with a decrease in risk of malaria. The most prominent of those mutations are on red blood cells. Through Dr Joof’s doctoral thesis, which she is set to finish in 2021, she shows that functional studies are needed to identify the mechanism through which the mutations may mediate protection against malaria. To do this, Dr Joof will demonstrate the impact of those mutations at three levels: (1) Protein expression, (2) Red blood cell function and (3) Malaria pathogenesis.

At this point in her life, she sees a bright future for her research on malaria and aims to pursue post-doctoral studies. *“Too many African researchers have to go abroad for some reason. I definitely want to stay in Africa, contributing to global health challenges and hopefully becoming a University lecturer transmitting knowledge to female students.”*

Asked about some of the challenges that African women face in undertaking a career in science, she remarks that *“women are usually primary care givers and in the absence of vital support, they tend to stay at home. And because of this, very often, women miss out on opportunities. Otherwise we would have the same opportunities.”*

*“Identify the mechanism  
through which the  
mutations may mediate  
protection against malaria”*



*Stéphanie Maubah  
Carène Konan*  
Doctoral candidate

Littoral Seas and Food Security Laboratory (LIMERSAT),  
Félix Houphouët Boigny University, Abidjan, Côte d'Ivoire

## *Geomatics at the service of the fight against malnutrition*

Her parents taught physical sciences in the city of Daloa, Côte d'Ivoire, where Stéphanie Konan completed her secondary education. After obtaining her baccalaureate in 2009, she began her higher education in geography. In 2011, following the post-election crisis in Côte d'Ivoire and the closure of her university, she switched to computer science, while pursuing a degree in geography.

She perceived then the opportunity to bring together geography and informatics by putting them at the service of an interactive cartography, which can lead to concrete applications. *"I saw the endless opportunity that geomatics offers and what it can bring in terms of research and development."*

While working towards her Master's degree, she joined the Littoral Seas and Food Security Laboratory, where she worked on the creation of a geographical information system, to help eradicate child malnutrition. She stayed on there to pursue her doctoral studies and plans to defend her dissertation by the end of 2019. *"We are facing a major public health problem in Côte d'Ivoire. Despite the efforts of the state through its National Nutrition Program, the epidemiological situation remains worrying, with an increase in malnutrition in the north of the country, where prevalence was close to 30% in 2016."* Ms. Konan has also completed an engineering cycle in software engineering and telecommunications networks.

Indeed, malnutrition is a serious condition and screening for cases of child malnutrition through geographic location thanks to a mobile app and an early warning mechanism for nutritional emergencies

could help eradicate this scourge. *"Among the causes of malnutrition is a relatively low awareness among mothers, which is partly due to their lack of access to education. Coming from a privileged family, with strong female role models who have accompanied me and supported me throughout my studies, I consider myself lucky. Also, I wish to put my research at the service of my country and beyond. Africa being very connected thanks to the increasingly wide use of mobile phones, it is relatively easy to develop applications and test them."*

Importantly, the tool that Ms. Konan has developed will include an educational component with images and information in the local language, proposing diets based on the geographical and seasonal availability of local foods. *"In addition to teaching, I also see myself working for international organisations and getting involved in public life. Above all, I want to be helpful."*

*"Create a geographical information system to help eradicate child malnutrition"*



*Dr. Cécile Harmonie  
Otoïdobiga*

*Post-doctoral researcher*

Microbiology and Microbial Biotechnology Laboratory, Joseph Ki-Zerbo  
University of Ouagadougou, Burkina Faso

*Improving productivity of lowland rice in West Africa*

Since her early childhood, Dr Cecile Harmonie Otoïdobiga has always wanted to be a biologist. She was inspired by her father, a technician in a laboratory of the Institute of Environment and Agricultural Research in Bobo Dioulasso, Burkina Faso, where she grew up. *"For me, looking into the microscope was like exploring!"*

Her father was supportive of her ambitions, despite being hesitant at first about his daughter embarking on a career in science, knowing the existing difficulties for women scientists in Africa. *"Of course, it's hard for a woman, especially when, like me during my doctorate, I had to spend time in the fields, far from my family, taking samples. But that did not stop me from reaching my goal."* Between the beginning of her PhD in 2013 and the end of her thesis, submitted in 2017, Dr Otoïdobiga got married and had two children, now aged four and two.

For her research, which she has conducted for more than eight years in the Microbiology and Microbial Biotechnology Laboratory at Joseph Ki-Zerbo University in Ouagadougou, she has chosen to focus on the *"impact of bacteria that reduce iron and sulphate-reducers on the productivity of rice valley bottoms, subject to sub-surface drainage."* There are three modes of rice production, the second most widely consumed cereal in the world after maize: lowland rice, rain-fed rice and irrigated rice. *"With the water stress we are experiencing in Sahelian countries, it is of course in the lowlands that we grow our rice more easily. In West Africa,*

*however, about 55% of the rice paddy area is affected by iron toxicity."* This contributes significantly to the reduction of rice productivity, with 40 to 100% yield loss.

Today, Dr Otoïdobiga wants to implement strategies in the field informed by the results she has obtained in the laboratory. *"If we get the right funding, we can test other varieties with better productivity."* Her dream is to become a full-time professor in biochemistry and microbiology, so she can continue her research and pass on the torch of science to young girls. *"Burkina Faso is still a very rural country. In addition to the fight against early school dropout and the cultural factors - early marriage among others - that impede the schooling of girls, we must also help them to build confidence in their intellectual abilities and support them throughout their school education. This is how we will change attitudes and produce many women scientists and leaders."*

*"Study the impact  
of bacteria on the  
productivity of rice  
valley bottoms"*



*Jesugnon Fifamè  
Murielle Féty Tonouewa*  
Doctoral candidate

Ecology, Botany and Plant Biology Laboratory, University of Parakou, Benin

### *Improving the Acacia wood supply chain in Benin*

While studying for her degree in Agronomy, obtained with the congratulations of the jury, Jesugnon Fifame Murielle Fety Tonouewa discovered a passion for scientific research, which has since gone from strength to strength. *“As a female researcher, it is not always easy to reconcile your academic and personal life. Fortunately, I was supported by my relatives and teachers.”*

This mother of two children, seven and two years old, decided to conduct her research within the Ecology, Botany and Plant Biology Laboratory at the University of Parakou, the largest city in northern Benin. Her doctoral thesis, which she plans to submit in 2020, focuses on *“the anatomical, physico-mechanical, energetic characteristics and carbon content of a tree, Acacia Auriculiformis, depending on the forestry treatment on several soils where it is planted in Benin.”* Since 1988, plantations of *Acacia Auriculiformis* have been developed throughout West Africa to meet the need for wood fuel. Today, the demand for wood is not only related to energy needs, but also to the use of timber. To improve the use of *Acacia Auriculiformis* for energy and industrial purposes, it is necessary to determine its characteristics according to its age, provenance and forestry management.

*“At this stage of my research, we have already conducted a survey of companies involved in Benin’s relevant industries in order to understand the technical difficulties related to the use of this wood and potential improvements.”* Together with her team, Ms. Murielle Tonouewa has taken inventories of

wood samples from 30 trees cut down on plantations and 275 standing trees. *“These will enable us to perform physico-mechanical and energy anatomical analyses in order to gain accurate data on the potential and efficient use of gasoline for energy and for wooden structures.”*

With little funding available for research in Benin, she had to travel twice to France to find the right equipment for her laboratory tests. *“Fortunately, African researchers have a strong potential for project design, partnership, and the search for external funding, which still allows them to advance their work.”* With determination and hard work, as well as the support of her husband, Ms. Murielle Tonouewa intends to pursue post-doctoral research once she has obtained her doctorate. *“As a senior researcher, I am very keen to serve as a role model for the next generation, who will play a key role in Benin’s future. The L’Oréal-UNESCO Sub-Saharan Africa Young Talents Awards are already a first great opportunity to make progress on achieving this ambition.”*

*“Determine  
the characteristics  
of the Acacia  
Auriculiformis tree”*

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