

Fame Lab

TALKING SCIENCE

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South African Agency for Science
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ACTIVATING AFRICAN KNOWLEDGE
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Introduction

FameLab South Africa: The Voices

This is a small collection of alumni profiles from among hundreds of researchers, scientists and postgraduate students who have participated in FameLab South Africa since 2013. The bright minds you will meet in the following pages represent a variety of universities, institutions and disciplines of study. Here, they offer their thoughts on their work, science communication and FameLab South Africa.

Science communication is a growing area of practice and research. In South Africa, FameLab® is one mode of building capacity for science communication, as well as identifying and nurturing more diverse voices in the science community.

FameLab® was created and is produced by Cheltenham Festivals, whose participation programmes culminate at the town's internationally-acclaimed Jazz, Science, Music and Literature Festivals. FameLab® is an exciting international competition that promotes science and technology by creating a space for scientists and researchers to find their voices and reach public audiences. Since 2007, a partnership with the British Council has seen the competition go international. To date, more than 10,000 participants have taken part, from around the world. British Council South Africa, with Jive Media Africa and the South African Agency for Science and Technology Advancement (SAASTA) deliver the FameLab® competition in South Africa.

Jive Media Africa provides skills development, media production and public engagement services in the southern Africa region. The organisation provides FameLab South Africa participants with an introduction to science communication and initial exposure to FameLab, locally. (visit www.jivemedia.co.za)

The South African Agency for Science and Technology Advancement (SAASTA) is an agency of the National Research Foundation (NRF) which aims to advance public awareness, appreciation and engagement of science, engineering and technology in South Africa. (visit www.saasta.ac.za)

The British Council is the UK's international organisation for cultural relations and educational opportunities. We create friendly knowledge and understanding between the people of the UK and other countries. (visit www.britishcouncil.org.za)

Acknowledgments

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**Dr. Michael Bodunrin
(2017)**



I participated in Science Communication through FameLab South Africa at the

School of Chemical and Metallurgical Engineering, University of the Witwatersrand.

How did you benefit from your FameLab South Africa experience?

FameLab has contributed to my career. I won a research grant because I was able to give a presentation that convinced my funders. To date, my presentation skills have continued to improve. I am grateful for the experience I had.

Tell us about your work

I am working on the development of affordable titanium alloys for land-based applications. In the long run, my goal is to design affordable titanium alloys for the biomedical industry. Statistics have shown that the technological advancements have caused humans to live longer, and this is a good thing. In the next 50 years, Africa would have a larger aged population and the burden of bone fractures and other forms of disabilities from bone diseases are going to be prevalent. Developing affordable titanium alloys that can be used to manufacture implants and prostheses, locally, would be necessary to manage disabilities in aged population groups. In addition, disabilities that may arise from traumatic events like car accidents can be better managed using these titanium implants and prostheses. The good news is that titanium ore is abundant in South Africa, we only need to establish the technology of making alloys that are peculiar to South Africa and Africa as soon as we can.

**Dr. Matia Mukama
(2019)**



I participated in Science Communication through FameLab South Africa at the

The Centre for Research on Evaluation, Science and Technology, Stellenbosch University

How did you benefit from your FameLab South Africa experience?

I love science, I love research. I feel excited and humbled that I can communicate it simply and understandably in three minutes! FameLab sharpened my science communication skills to a level far better than I ever thought.

Tell us about your work

My research focusses on the use of engineering principles to design fresh fruit packages that reduce energy needed in cold-chain handling, reduce the space required for storage and transportation, and are more economically and environmentally friendly.

**Ms. Boipelo Poho
(2019)**



I participated in Science Communication through FameLab South Africa at the Tshwane University of Technology

How did you benefit from your FameLab South Africa experience?

There aren't a lot of platforms like Famelab; on many occasions I have used the skills that I learned at Famelab in other parts of my research work.

Tell us about your work

South Africa is a water scarce country. My research focuses on producing good quality water using a low-cost, nanotechnology based, desalination plant. I also explore power sources that a desalination plant of this nature could use where solar energy cannot be harvested consistently and conventional electricity is too expensive.

**Dr. Michelle Lochner
(2013)**



I participated in Science Communication through FameLab South Africa at the University of the Western Cape

How did you benefit from your FameLab South Africa experience?

FameLab was a great experience which certainly helped improve my science communication and presentation skills.

Tell us about your work

I work on developing new artificial intelligence and statistical techniques to analyse the enormous quantities of data coming from new telescopes like the Vera C. Rubin Observatory and the Square Kilometre Array. These techniques are not only of critical importance to astronomy, they are increasingly relevant in the modern data-driven world.

* Dr. Lochner was our first South Africa national winner and representative at the FameLab International competition.

**Dr. Brenda De Gama
(2020)**



I participated in Science Communication through FameLab South Africa at the

Developing Research Innovation, Localisation, and Leadership in South Africa (DRILL), University of KwaZulu Natal

How did you benefit from your FameLab South Africa experience?

My participation in FameLab has equipped me with the skills to effectively communicate my scientific research to a broader audience and has given her the confidence to continue with my campaign to educate the public about how body donation contributes to science and our lives.

Tell us about your work

I am a health research ethics fellow at DRILL UKZN. Body donation plays a key role in medical education and anatomical research, but limited numbers of donated bodies are received from the Black African citizens. These low levels of participation in body donation programmes from this population group prompted me to investigate the belief systems surrounding body donation. Through this research, I want to inform the public, especially the Black African population, on how body donation is an important resource for training future health professionals, and that body shortages compromise medical research.

**Ms. Zakkiya Cassim
(2020)**



I participated in Science Communication through FameLab South Africa at the

WITS Advanced Drug Delivery Platform, University of the Witwatersrand.

How did you benefit from your FameLab South Africa experience?

I believe that scientists ought to present their research directly to the public as research presents solutions to problems society is facing. This communication may also inspire younger generations to take up careers in science and further contribute innovative research to the scientific field.

Tell us about your work

The female population is bound to benefit from research aimed at treating an infection which afflicts at least 75% of its numbers. I am currently pursuing my master's degree in Pharmaceutics and Pharmaceutical Microbiology at the WITS Advanced Drug Delivery Platform (WADDP). My research focus is the treatment of vaginal thrush. This involves the use of an anti-fungal drug co-delivered with a probiotic as a therapeutic co-prevention system. I began my career as a pharmacist.

**Mr. Edgar Phukubje
(2015)**



I participated in Science Communication through FameLab South Africa at the University of Limpopo

How did you benefit from your FameLab South Africa experience?

FameLab has allowed me to view and approach science communication differently. There are many gaps in disseminating scientific findings to the broader community. I now realize that improving science engagement and communication allows direct feedback from the communities where I conduct my research.

Tell us about your work

In 2015, I was studying microbial resistance in anti-biotic use. I investigated how plant remedies and crude extracts could be used as alternative treatments for sexually transmitted infections (STIs) and related infections. It was a community-based study and we extracted metabolites of these remedies to determine their efficacies in treating various infections.

Since 2017 I moved into cardiovascular research. I am studying Isolated Nocturnal Hypertension in a South African black population of African ancestry. Night-time blood pressure has harmful effects on the heart and kidneys, for example. These effects are amplified among black people, presenting worse outcomes because this population group metabolises and excretes salt differently from other population groups.

**Ms. Charissa Worthmann
(2020)**



I participated in Science Communication through FameLab South Africa at the University of the Free State

How did you benefit from your FameLab South Africa experience?

I hope to present my research findings to the public as it is essential that everyone understands the role of science and the impact its developments can have on their lives and the environment - both positive and negative.

Tell us about your work

It is no secret that South Africa has had its fair share of challenges surrounding the production and supply of energy. As a result, we have been obliged to explore unconventional means of sourcing energy. I am currently obtaining a master's degree in environmental management and conducting research on the controversial topic of unconventional oil and gas extraction.

**Dr. Nabila Ismail
(2020)**



I participated in Science Communication through FameLab South Africa at Stellenbosch University.

How did you benefit from your FameLab South Africa experience?

My target is to reduce negativity and inaccurate information surrounding infectious diseases by communicating vital scientific facts to the general public in a way they can relate to and understand.

Tell us about your work

Any mutation in the genetic code of bacteria found in infectious diseases such as Tuberculosis (TB) can cause a resistance to drugs currently used for its treatment. After completing my undergraduate, honours and master's degrees in Biochemistry, my passion for scientific research prompted me to focus my PhD research on new and repurposed drugs for the treatment of drug-resistant TB and identify genetic markers that cause resistance. After successfully completed my PhD studies in 2019, I am now a postdoctoral research fellow in this area.

**Ms. Muano Mukununde
(2020)**



I participated in Science Communication through FameLab South Africa at the

National Centre for Nano-Structured Materials, Centre for Scientific & Industrial Research (CSIR).

How did you benefit from your FameLab South Africa experience?

I recognize that effective communication is essential in my line of work as it involves a direct approach to various communities who can play a major role in minimizing the effects of global warming through proper waste disposal and recycling.

Tell us about your work

Pollution and global warming are major challenges that that can only be fought with a unified approach. One aspect of the wider solution is the recycling of household waste. After graduating from the University of Johannesburg with a degree in Chemical Engineering , I founded a recycling initiative aimed at reducing toxic gases released by landfills.

**Mr. Johannes Joubert
(2020)**



I participated in Science Communication through FameLab South Africa at the

Forestry and Agricultural Biotechnology Institute, University of Pretoria

How did you benefit from your FameLab South Africa experience?

I believe that the language of science is often too complex, alienating the general public. Through FameLab, I have learnt how to deliver my research in a less complicated manner to reach a greater audience, and in doing so, I hope to raise awareness of the effects of the Eucalyptus snout beetle.

Tell us about your work

A major threat to eucalyptus plantations is the eucalyptus snout beetle, which eats the shoots and leaves of certain eucalyptus trees, stunting their growth and in severe cases can reduce a plantations wood production by 85% over the trees' 10-year growing period. As part of my MSc in Zoology at FABI, I studied how differences in the chemical composition of leaves of different eucalyptus species could alter the beetle's feeding behaviour. This has led me to a PhD in Zoology, which focuses on the relationship between the beetles, eucalyptus trees and the parasitoid wasp, anaphes nitens. My findings should help us better understand Eucalyptus trees resistance against these beetles, thus allowing plant breeders to create improved trees which suffer reduced damage.

**Ms. Athule Ngqalakwezi
(2016)**



I participated in Science Communication through FameLab South Africa at Mintek, South Africa.

How did you benefit from your FameLab South Africa experience?

FameLab has contributed greatly because I can communicate my work better. I always try to make my work understandable as much as possible.

Tell us about your work

My research is focused on developing hydrogen storage materials for hybrid cars as per the requirements of the Department of Energy (USA). Hydrogen is a clean source of energy with zero emissions and an energy content that is much higher than the traditional fuels. Furthermore, the world is shifting towards green systems and green technology to alleviate decades of environmental mismanagement due to the continued use of fossil fuels. Therefore, all research focusing on improving the environment is of paramount importance.

**Dr. Puleng Moleko-Boyce
(2018)**



I participated in Science Communication through FameLab South Africa at the Nelson Mandela University.

How did you benefit from your FameLab South Africa experience?

Famelab has contributed so much to my career and personally by improving my confidence, self-esteem and communications skills; Participating enhanced the way I conduct research and teach. I also managed to form new relationships and partnerships through this activity.

Tell us about your work

I am a postdoctoral research fellow and a contracted lecturer. My research focuses on the recovery of precious metals from spent automotive catalytic converters (a pollution reducing device). The importance of this project is to recycle the precious metals such as platinum, palladium and rhodium found in the pollution reducing device. These metals convert the toxic gases, produced by the vehicle, into less toxic gases released to the environment, breathable gases. The precious metals exhibit good catalytic properties however, they are also expensive and irreplaceable. When I share my work, I show society the importance of precious metals in improving our environment.

**Mr. Darryl Herron
(2018)**



I participated in Science Communication through FameLab South Africa at the University of Pretoria.

How did you benefit from your FameLab South Africa experience?

My participation in FameLab has helped raise awareness about a larger concept called "plant health." People often take for granted the importance of plants in their lives. The health of plants is inextricably linked to human and environmental health. Their health is threatened by a number of factors, including insects, fungi and bacteria. These organisms and their importance in "plant health" have been the topic of a number of my talks. Being a part of FameLab has also allowed me to encourage others in my institute to participate in the competition and increased the number of people talking about plants.

Tell us about your work

I am working with the South African forestry industry to better understand a disease of pine species, commonly known as pine pitch canker. The disease is caused by a fungus called *Fusarium circinatum*. Pine trees make up approximately 49% of the 1.2 million hectares of plantation forestry in South Africa. The forestry industry contributes more than 1% to South Africa's GDP and employs more than 165, 000 people. Pines are an important species for timber production, including the production of furniture, structural timber, pallets, etc. The pathogen has been in South Africa since the 90s. Its ability to contaminate water, soil, air, plating trays and even other plants make it a difficult disease to manage. My project is looking at the role of grasses in the movement and persistence of *Fusarium circinatum* in the forestry environment. This has implications for forestry in South Africa and other countries that rely on pine.

**Ms. Gillian Dumsile Mahumane
(2019)**



I participated in Science Communication through FameLab South Africa at the

Wits Advanced Drug Delivery Platform, University of the Witwatersrand.

How did you benefit from your FameLab South Africa experience?

I was a PhD research student when I participated. I am now a lecturer. Famelab contributed towards the improvement of my interpretation and appreciation of the relationship between the audience and the way I deliver a message. I am now very mindful of ensuring that I take the time to evaluate the target audience be it a peer-reviewing for a journal, students during lectures, my friends and family, potential investors (grants and funding application). I can use that information to decide how best a group could receive the information I am trying to share.

Tell us about your work

My Ph.D. research field is Pharmaceutical Biomaterials and Polymer-Engineered Drug Delivery Technologies, with a focus on application in neural tissue engineering.

Traumatic brain injury is a prevalent, contributor to death and disability for which resources and interventions are limited. For example, in South Africa, tracking the burden of TBI is difficult as hospital record-keeping is suboptimal, and very little funding is available for epidemiological monitoring and surveillance of trauma. In my work I have chosen to focus on addressing the lack of therapies.

**Dr. Isobel Kolbé
(2014)**



I participated in Science Communication through FameLab South Africa at the University of Pretoria.

How did you benefit from your FameLab South Africa experience?

Communicating research is key even when speaking to specialized audiences. FameLab taught me much about how to talk about science in a way that excites the audience and includes them in the wonder of my research.

Tell us about your work

I do research in fundamental physics. Particularly theoretical high energy particle and nuclear physics. The impact of my research on society is not immediate but rather in developing a strong mathematical understanding of the basic forces and particles in the universe so that we might better understand how to harness nature. The day-to-day skills one needs in my field are also important as they are easily transferable to any other sector that requires modelling or managing large data sets.

**Mrs. Sebatso Maifadi
(2018)**



I participated in Science Communication through FameLab South Africa at the University of South Africa.

How did you benefit from your FameLab South Africa experience?

Famelab has contributed to my research journey. It has helped me gain confidence in communicating my research and inspired me to motivate other young female scientists to do more than just laboratory work and publishing articles. It is as important to unlock the communication gap between the society and the academic or research world as it is to develop projects that aim to solve problems in our society.

Tell us about your work

I am developing point-of-use (POU) water treatment system for recycling or re-use of wastewater from beauty hair salons in South Africa. Beauty hair salons do not have their own wastewater treatment facilities due to their slender profit margins. Our country also has issues with poor wastewater infrastructure and inefficiencies, overall. The work I am doing will help the environment by reducing the contaminant burdens prior to discharge and reduce withdrawal of clean water from the environment. Reusing wastewater in the small businesses will also help them to be more sustainable, financially.

**Mr. Raven Motsewabangwe
(2014)**



I participated in Science Communication through FameLab South Africa at the North West University.

How did you benefit from your FameLab South Africa experience?

I now do science communication work on a regular basis.

Tell us about your work

I am the provincial coordinator for the Eskom Expo for Young Scientist in Gauteng Province. I am responsible for the development of young researcher at grassroots level (grade 4 - 12). The work I do helps to develop inquisitive learning amongst the youth, ultimately developing into innovative thinkers.

* FameLab South Africa winner 2014.

**Mr. Mabu Manaileng
(2015)**



I participated in Science Communication through FameLab South Africa at the University of Limpopo.

How did you benefit from your FameLab South Africa experience?

FameLab exposed me to other researchers that encouraged me to work hard and publish more. It also created a platform for recognition which would later help me in my career.

Tell us about your work

My research focused on building large scale speech recognition systems for under-resourced languages. We proposed a grapheme-based approach, as opposed to the standard phoneme-based approach, for modelling acoustic units and showed that this technique works better for low resource scenarios. This research is important in ensuring that African languages are included in speech recognition and synthesis technologies - like Siri pronouncing African names properly, navigation systems and Neuro Linguistic Programming capabilities for African languages in general.

**Ms. Kelebogile Mojanaga
(2019)**



I participated in Science Communication through FameLab South Africa at the

DSI-NRF Centre of Excellence in Human Development, University of the Witwatersrand.

How did you benefit from your FameLab South Africa experience?

Famelab has helped me realise the importance of making my work visible beyond the strict confines of academic conferences. This not only allows me to make my research reach a broader audience, but also for dialogues and exchange of ideas with individuals from different schools of thought and different academic faculties who have given me valuable input for research.

Tell us about your work

My research work aims to compare dominant understandings of infant mental health to local culture-specific understandings.

An increased interest in infant mental health has highlighted that the way mothers manage stress can influence the child's rate of development, mental and physical health. Mothers in developing country settings have multiple stressors to negotiate. Large-scale societal factors such as ethnicity and poverty have a significant impact on the way parents raise their children. These factors, and more, impact a mother's capacity to parent. It is, thus, important to comprehensively investigate an Afrocentric version of what makes a parent "good enough". Local studies on parenting from a psychological perspective are sparse, hence the need for a study of this kind.

**Mr. Goitsewang Dikane
(2018)**



I participated in Science Communication through FameLab South Africa at the Central University of Technology.

How did you benefit from your FameLab South Africa experience?

FameLab gave me a platform to learn about a variety of research projects from other institutions and disciplines in science.

Tell us about your work

I participated in FameLab while reading for a Master of Agriculture on molecular plant breeding focused on production of food secure grain crops (cowpea) in both developed and developing countries. To maintain and characterize the stored pulse germplasm in the Agricultural Research Council by creating a genetic profile of all genotypes in the pulse germplasm bank. This information will assist in selecting suitable parents for breeding resistant, tolerant and high yielding grain crops.

**Mr. Sendibitiyosi Gandidzanwa
(2020)**



I participated in Science Communication through FameLab South Africa at the Nelson Mandela University.

How did you benefit from your FameLab South Africa experience?

I feel strongly about sharing my passion for science with the public, especially high school learners, to encourage them to explore various fields of science. FameLab helped me to explore new ways to express my work.

Tell us about your work

The advancement of medical treatment is always profound, yet not without its fair share of limitations. In this vein, some of the shortcomings of current cancer therapy are specificity, low efficiency and the financial cost involved. My work aims to address these setbacks by offering a different and targeted treatment method. I completed my master's degree in Chemistry, and I am currently conducting PhD research on a palladium-based drug to be used in the treatment of cancer. As palladium is abundantly sourced in South Africa, this makes the process cost-effective and promising.

**Dr. Mapula Razwinani
(2017)**



I participated in Science Communication through FameLab South Africa at the

Forestry and Agricultural Biotechnology Institute, University of Pretoria.

How did you benefit from your FameLab South Africa experience?

Famelab contributed a lot to my research. I won a research grant because I was able to give a presentation that convinced my funders of the value my work could offer. To date, my presentation skills have continued to improve, and I am grateful for the experience.

Tell us about your work

I am working on the development of affordable titanium alloys for health-based applications. In the long run, my goal is to design affordable titanium alloys for the biomedical industry. Studies have shown that technological advancements are increasing human life expectancy. In the next 50 years, Africa may have a more elderly population; the burden of bone fractures and disabilities from bone diseases may be more prevalent. Affordable titanium alloys that can be used to manufacture implants and prostheses to manage these challenges, locally. Titanium ore is abundant in South Africa, we only need to establish the technology of making alloys that are peculiar to South Africa and Africa as soon as we can.

**Ms. Keagile Lepule
(2020)**



I participated in Science Communication through FameLab South Africa at the Tshwane University of Technology.

How did you benefit from your FameLab South Africa experience?

I believe raising awareness about mental health and treatment can be enhanced by communicating in an accessible, yet informative way.

Tell us about your work

The importance of mental health is gradually gaining prominence in South Africa, yet there is still some stigma and uncertainty about its treatment. The use of natural treatment sourced from South African medicinal plants has potential which I strive to explore. My first degree in Biology and Human Physiology inspired me to go for Honours, Masters and now a PhD in Pharmacology. I have decided to focus my attention on creating awareness and medical treatment for mental health diseases, particularly depression, using natural methods from South Africa.

**Mr. Hans Mbah
(2019)**



I participated in Science Communication through FameLab South Africa at the University of Free State.

How did you benefit from your FameLab South Africa experience?

Yes, after participating in Fame Lab, I have been able to summarise and express my research ideas in a systematic manner, particularly using the least number of words possible.

Tell us about your work

The world is looking for economic and environmentally friendly ways to limit carbon dioxide emissions in order to reduce the impact of climate change. One promising approach involves the capture and storage of carbon dioxide in geological formations, such as deep saline aquifers. This process is called Carbon Capture and Storage (CCS). In order to have a significant impact carbon capture and storage should be deployed at a large scale in places around the world. For large volumes of carbon dioxide to be captured and injected underground the risk to people and the physical environment should be quantified. This is a hydrochemical and geomechanical problem.

In my doctoral study, I focus on a mathematical stability assessment of storage aquifers. This is a way of determining whether Carbon Capture and Storage could be a long-term mitigation plan for climate change and global warming.

**Ms. Jacqueline Queffelec
(2020)**



I participated in Science Communication through FameLab South Africa at the

Forestry and Agricultural Biotechnology Institute, University of Pretoria.

How did you benefit from your FameLab South Africa experience?

Conveying my research and passion to the public will reduce misinformation and help raise awareness about conservation issues by explaining precisely why everyone ought to care about them.

Tell us about your work

A single wasp is a mild nuisance to deal with, however an entire swarm can cause a great deal of damage. I have specialized in the ecology and evolution of insects; for my PhD research I focus on combating the damage caused by these invasive insects which ravage thousands of pine trees in South Africa every year. My passion enables me to contribute to the conservation and development of natural ecosystems and agriculture.

**Dr. Nozipho Gumbi
(2016)**



I participated in Science Communication through FameLab South Africa at the University of South Africa

How did you benefit from your FameLab South Africa experience?

FameLab is training young scientists, researchers, engineers to communicate science, but its effect, thereafter, is more on than just one's communication and learning the skill. It helped me to create a personal brand. One can become a go-to-person when others are interested in knowing and learning about a subject because Famelab has taught you how to break complex technical things into something others can understand or more easily comprehend.

After my FameLab experience, I have often spoken about my work in the media and at conferences. I am particularly proud to have been a contributor to an evening show on a national radio station speaking about science and the opportunities it presents in isiZulu.

Tell us about your work

I currently work at the Institute for Nanotechnology and Water Sustainability, University of South Africa as a researcher and lecturer. My doctoral project focused on 'Polymer composite membrane modification using multi-walled carbon nanotubes'.

In addition to being a participant, I have been a FameLab South Africa judge for several years. I always congratulate the participants I interact with for taking the initiative to learn a new skill and encourage them to reach out to me if they would like mentoring as they continue the research and science communication journey.

* Dr. Gumbi was the 2016 South Africa national winner and representative at the FameLab International competition.

**Dr. Gugulethu Mabuza-Hocquet
(2014)**



I participated in Science Communication through FameLab South Africa at the

Council for Scientific and Industrial Research (CSIR) & University of Johannesburg.

How did you benefit from your FameLab South Africa experience?

It was one of the greatest experiences in my academic life. It reminded me why I was doing my project. Having the platform to share the project with other people helped me emphasise the value or impact that science can bring in one's life.

Tell us about your work

I am a scientist and a Research Group Leader at the CSIR and hold a PhD in Electrical and Electronic Engineering from the University of Johannesburg. Among my specialist areas are: Iris Biometrics for individual recognition and classification, research management, development and application of Artificial Intelligence techniques in video and image processing, programme and project management, digital transformation and human capital development.

During the time I participated in FameLab, I was part of a project that aimed to develop a biometric identification system for children in South Africa, to help protect their identity from infancy.

**Mr. John Manamela
(2018)**



I participated in Science Communication through FameLab South Africa at the University of Limpopo.

How did you benefit from your FameLab South Africa experience?

Famelab allowed me to meet and share my work with amazing scientists in Mzansi. This was an exciting experience and it helped me improve my communication skills.

Tell us about your work

My research work focused on developing a system that can recognize basic human emotions from spoken phrases. This work centred on South African's low-resource languages and I chose to focus on Sepedi. Due to the shortage of suitable data, we had to first construct an emotional speech dataset made up of acted speech samples. The aim of the study was to improve human-computer interactions and expose African languages to these technologies. I hope to use this experience in new work now that I have graduated.

Ms. Emmie Chiyindiko (2018)



I participated in Science Communication through FameLab South Africa at the University of Free State and Central University of Technology-Free State.

How did you benefit from your FameLab South Africa experience?

FameLab catapulted my career in science engagement and communication. As the national winner for 2018, I got to travel to Cheltenham UK, meet national finalists from all over the world and build long-lasting professional relationships. Science communicators are creative people and the opportunity to interact, share ideas and knowledge with science communicators with different backgrounds was invaluable. I recently facilitated the South African Agency for Science and Technology Advancement (SAASTA) provincial science debate competition with over 20 high schools. I hosted a training workshop on building self-confidence, public speaking and effectively debate on science-related topics. The competition also provided me an opportunity to meet exceptional students passionate about science who I now mentor. I have continued to correspond with these students and positively influence their engagement with science and academia. I also had the opportunity to give a keynote speech at the Free State Career expo hosted by the Deputy Minister of the Department of Public Works in South Africa where I addressed over 1000 students. To date I have been featured in Forbes Science, News24, TimesLive. My dreams are coming true, and then some. I attribute part of this to platforms like FameLab that helped a young black immigrant woman show the world what she's made of.

Tell us about your work

My PhD research investigates how we can make our energy production processes more efficient, ultimately reducing the carbon footprint. This branch of social and environmentally conscious chemistry is termed "green chemistry". Green chemistry applies across the entire life cycle of a chemical product, including its design, manufacture, use, and ultimate disposal. The objective of my research is to reduce pollution at its source by minimizing time and material required to produce energy. I hope to achieve this by studying the synergy between experimental and computational chemistry of catalysts (materials that speed up chemical reactions). By understanding their structure and reactivity, chemical processes can be designed to maximize the sustainability of industrial activity. Catalysts from earth-abundant metals for industrial applications are important to replace expensive and/or toxic catalytic compounds with eco-friendly and less toxic alternatives, contributing to a greener environment. The design and application of new catalysts and catalytic systems are simultaneously achieving environmental protection and economic benefit.

* Ms. Chiyindiko was the 2018 South Africa national winner and representative at the FameLab International competition.

**Mrs. Febé Meyer
(2013)**



I participated in Science Communication through FameLab South Africa at the University of Pretoria.

How did you benefit from your FameLab South Africa experience?

Famelab was a catalyst for my career as a writer and as a science communicator in particular. It gave me the confidence that I could communicate well, and I still use the training I received in the masterclass to this day!

Tell us about your work

Though I am a biotechnologist by training, I stepped out of the laboratory to focus on communicating more diverse topics. Currently, I am working as a freelance science communicator, specialising in writing for children and e-learning. I am fond of using fiction to explain complex topics. Who doesn't love a good story?

**Ms. Lerato Ndlovu
(2020)**



I participated in Science Communication through FameLab South Africa at the

Africa Health Research Institute, University of KwaZulu Natal.

How did you benefit from your FameLab South Africa experience?

Science communication excites me because it's very important for scientists to convey their work to the community, whom their work usually affects. I hope to give community members this information first-hand instead of allowing potential patients to rely on myths.

The FameLab competition has taught me to communicate effectively by capturing listeners' attention with concise yet understandable facts for maximum impact.

Tell us about your work

Efficient patient management is essential for TB cure rates, which is why I aim to develop an effective way to determine the impact of patient treatment methods. I completed a master's degree in Biochemistry and Plant Breeding, and I am currently pursuing a PhD. I chose to focus on TB immunology in order to improve TB cure rates. I hope my work will bridge the gap between the science community and the public via school programmes which will reduce misunderstandings about medical and healthcare advancement.

**Mr. Otto Joseph
(2017)**



I participated in Science Communication through FameLab South Africa at Rhodes University.

How did you benefit from your FameLab South Africa experience?

FameLab has assisted me to present to people who are not in my field. Understanding how to make information relevant to people is an important way to get them engaged in what I do.

Tell us about your work

I am in the field of Nonlinear Optics. I synthesize phthalocyanine-based materials with nonlinear optical limiting properties and analyse them using a range of spectroscopic techniques such as Z-Scan and Time-Correlated Single Photon Counting amongst others. I also model how these materials interact with light in silico, using this in conjunction with instrument acquired experimental data to generate parameters that give insight into electron behaviour in excited states. Non-linear optics materials are used in signal processing, data storage, sensors and telecoms.

**Ms. Paula Maseko
(2021)**



I participated in Science Communication through FameLab South Africa at North West University.

How did you benefit from your FameLab South Africa experience?

In terms of being able to narrate the story of catalysts and carbon dioxide hydrogenation to society, FameLab has contributed by helping me improve my communication skills and confidence.

Tell us about your work

Carbon dioxide emissions have continued to rise generating widespread environmental concerns. The efficient use of such greenhouse gases has become a major research topic, with practical applications. Converting carbon dioxide into value-added chemicals is a good way of recycling this carbon source. Carbon dioxide can be used as an alternative feedstock which would not only mitigate the impact carbon dioxide emissions but also decrease fuel production costs, contributing lowering a plant's energy needs. Since carbon dioxide is easily accessible, transforming it to energy sources could be very affordable. Hydrogen is a clean, high-energy material and can be used as the reagent for carbon dioxide transformation in an environmentally friendly process.

**Mr. Mannda Ndou
(2020)**



I participated in Science Communication through FameLab South Africa at the University of Venda.

How did you benefit from your FameLab South Africa experience?

I intend to contribute valuable research to an incomplete knowledge area. FameLab helped me communicate the impact of the Atlantic Slave Trade, an important historical event.

Tell us about your work

While there were many far-reaching ramifications of the African Slave Trade, one of the more perplexing consequences has been its genetic impact on current populations, whose ancestors were involved in these events. There is a huge gap in the knowledge surrounding the African Slave Trade from a genetic perspective, this is the focus of my master's degree.

**Ms. Pinky Mokwena
(2020)**



I participated in Science Communication through FameLab South Africa at the Tshwane University of Technology.

How did you benefit from your FameLab South Africa experience?

I have enjoyed forming a community, on both national and global levels, of scientists and researchers that I can always run my ideas, questions and general scientific outlook past. I don't believe many opportunities of this nature are made available for postgraduates - so, YAY FameLab!

Tell us about your work

There are certain types of pollutants that contaminate different sources of water which are resistant to conventional water treatment systems. These pollutants result from various household and cleaning products on the market and cause a number of health problems when consumed. My research is focused on the development of a cost-effective treatment method using maize-tassel as a bio-solvent to remove some of these persistent pollutants.

* Ms. Mokwena was the 2020 South Africa national winner and representative at the FameLab International competition.



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