

## Half-Day Intensive Seminar: "Innovation in the 21st Century: Deep-Tech & Deep-Science"

**Date:** 19 July 2024

**Time:** 09:00 - 12:30

**Venue:** Inhlanyelo Hub Lecture Hall, Building 5 UNISA Sunnyside Campus & Microsoft Teams

### **SEMINAR AGENDA**

#### **09:00 - 09:05 | Opening Remarks**

- Prof RT Mpofo | CEO, Inhlanyelo Hub

#### **09:05 - 09:10 | Official Welcome Address**

- Prof Thenjiwe Meyiwa, Vice Principal | Research, Postgraduate Studies, Innovation and Commercialisation

#### **09:10 - 09:15 | Masterclass Objectives**

- Program Moderator

#### **09:15 - 09:35 | Keynote 1: "The Dawn of Deep-Tech"**

- Exploring the Landscape of Technological Revolution
- Speaker: Prof Monde Ntwasa | Professor of Biochemistry, University of South Africa

#### **09:35 - 10:00 | Keynote 2: "Deep-Science: Unveiling the Unknown"**

- Insights into Ground-breaking Scientific Research in South Africa
- Speaker: Dr Dheepak Maharajh | UVU Bio Chief Executive Officer (Virtual)

#### **10:00 - 10:30 | Coffee Break & Networking**

#### **10:30 - 11:00 | Session 1: "Deep-Science: Unveiling the Unknown"**

- Insights into Global Groundbreaking Scientific Research
- Speaker: Dr. Nakia Melecio | Director (Center for MedTech Excellence) and Senior Research Faculty, Enterprise Innovation Institute (EI2), Georgia Institute of Technology

#### **11:00 - 11:30 | Session 2: "From Lab Bench to Market: The Journey"**

- Pathways to Commercializing Innovations
- Speaker: Dr. Nakia Melecio

#### **11:30 - 12:00 | Panel Discussion: "Shaping the Future with Deep-Tech & Deep-Science"**

- Panellists: Prof Monde Ntwasa, Dr Dheepak Maharajh, Prof Zikhona Lingano, Dr Nakia Melecio
- Moderator: TBA

#### **12:00 - 12:30 | Open Q&A Session**

- Open session to engage with the panellists
- Moderator: Dr Tapiwa Muzata

#### **12:30 - 12:35 | Closing Remarks**

- Prof Mathukhu Mogale | Board Chairperson, Inhlanyelo Hub NPC

### **Connect & Collaborate**

- Network with peers and leaders in the field.
- Engage with a hybrid audience of in-person and virtual attendees.

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Driving African innovation ● Igniting sustainable entrepreneurship ● Growing sustainable businesses  
"D.I.G for the seed"



+27 12 429 4063



info@inhlanyelohub.com



<https://inhlanyelohub.com/en>

#### **Directors:**

Prof ZZ Nkosi | Prof TSC Meyiwa | Prof MT Mogale (Chairperson)  
Mr CA Rust (USA) | Ms TM Peba (Botswana) | Prof EE Ebenso | Prof RT Mpofo (CEO)

## PRESENTER BIOS

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### **Dr Nakia Melecio**

Director of the Center for MedTech Excellence (Georgia Tech)

Nakia helps researchers commercialize their biotechnology, energy, defence, military technology, education, government technology, and aerospace. He also helps them secure investments from a network of federally funded laboratories, universities, and corporations. He has worked with industry, academia, and government throughout his career. As a result, Nakia has a unique and deep understanding of the early-stage innovation ecosystem and technology transfer, proven scientific and technical expertise, and decades of operational experience in technology-driven, high-growth companies. He has successfully helped start-ups and developed businesses worldwide in the United States, Australia, the United Kingdom, Canada, Nigeria, and Ghana.

Nakia's passion as a business advisor, deep-tech, deep-science mentor, and start-up coach inspires and helps entrepreneurs and start-ups spin out of university research. A seasoned entrepreneur, Nakia allows entrepreneurs to execute their ideas while guiding them in the total start-up journey — from product development and selling to the government, to their go-to-market strategy and customer discovery, to scaling a company and getting capital. He has worked with more than 700 start-ups worldwide, with more than 15,000 hours of classroom time working with entrepreneurs.

Nakia is an active member and mentor of the technology community and a frequent contributor to numerous business organizations, including the U.S. Small Business Administration (SBA). He is a long-time technology start-up mentor, having served in that role at the:

- Advanced Technology Development Center at the Georgia Institute of Technology
- The National Science Foundation Innovation Corps (NSF I-Corps) National Instructor
- The Association of University Technology Managers (AUTM)
- Georgia Tech Create-X mentor
- MIT Hack Medicine
- Department of Defense lab mentor
- NSF I-Corps Faculty Instructor at Georgia Tech
- Inclusive Tech Entrepreneurship Program (ITEP) at Georgia Tech
- Hack for Defense Instructor (H4D)
- Defense Innovation Accelerator Mentor (DIA)
- StartMe at Emory University

He also has a deep understanding of SBIR-STTR. He has been intimately involved with many new emerging growth technologies, including government, universities, and corporate innovation. He is a board member for several start-ups and is involved in two health-tech medical device start-ups, which are being actively funded by SBIR Phase I NIH and SBIR Phase I NSF grants.

Nakia has a master's degree in education, teaching, learning, and educational technology; a bachelor's degree in psychology; and a bachelor's degree in Cognitive Science. He also has a doctorate degree in psychology, educational psychology, and educational leadership.



**Dr Dheepak Maharajh**  
Chief Executive Officer, UVU Bio

Dr. Dheepak Maharajh is an expert Bioprocess Engineer and MBA graduate with over 20 years of experience in research and development. He possesses advanced skills in project management, process optimization, funding applications, and product development. Throughout his career, Dr. Maharajh has demonstrated strong leadership and strategic thinking within the National System of Innovation. He is currently the Chief Executive Officer of UVU Bio, a position he has held since March 2023, after serving as the Executive Cluster Head from June 2021. Dr. Maharajh is also the Director of YRD<sup>2</sup> Solutions, a consultancy firm specializing in biotechnology, agro-processing, circular economy, process design, bioprocess engineering, and renewable energy.

Previously, Dr. Maharajh was a member of the Board of Advisors for OptimusBio and served as the Head of Biometallurgy at Mintek. His extensive tenure at the Council for Scientific and Industrial Research (CSIR) saw him in various roles, including Research Group Leader for Bioprocess Engineering, Senior Bioprocess Engineer, and Operations Manager. His notable achievements include leading technology development projects, managing pilot plants, and securing significant private sector funding.

Dr. Maharajh holds a Master of Business Administration (MBA) and a Postgraduate Diploma in General Management from GIBS Business School. He also earned an MSc in Bioprocess Engineering from Stellenbosch University and a Bachelor of Technology in Biotechnology from Durban University of Technology. His specialties include fermentation, bioprocess engineering, algal biotechnology, technology transfer, circular economy, waste and water treatment, life cycle analysis, and commercialization. Dr. Maharajh's contributions to scientific literature include publications and patents in biotechnology and related fields.



**Prof Monde Ntwasa**  
Acting Executive Dean  
College of Agriculture and Environmental Sciences  
University of South Africa

Professor Monde Ntwasa, a leader in cancer research, is a distinguished researcher and academic leader in the field of biotechnology. Currently, he holds the position of Professor of Biotechnology at the University of South Africa's College of Agriculture and Environmental Sciences (CAES), where he also serves as the Acting Deputy Executive Dean. Professor Ntwasa's educational background is impressive. He completed his matric at St. Johns College in Mthatha before pursuing a dual Bachelor of Science at the University of Cape Town, graduating with degrees in both Microbiology and Clinical Science & Immunology. His thirst for knowledge led him to Cambridge University in the UK, where he earned both his Master of Philosophy (MPhil) and Doctor of Philosophy (PhD) degrees.

Professor Ntwasa's academic career began at the University of Cape Town as a Research Fellow. He then transitioned to a lecturing role in Biochemistry at the University of the Witwatersrand, where he spent 17 years rising to the rank of Associate Professor. In recognition of his expertise, he was appointed as a Full Professor in Biotechnology at the University of South Africa. Professor

Ntwasa's research focus has evolved throughout his career. Initially, he explored the fundamental aspects of development, signal transduction, and the role of specific proteins in apoptosis using fruit flies as a model organism. Currently, his passion lies in cancer research, where he is actively developing small molecule drugs to combat this devastating disease. Professor Ntwasa's dedication to research and leadership makes him a valuable asset to the field of biotechnology. His ongoing pursuit of innovative cancer treatments holds great promise for improving patient outcomes.



**Prof Linda Langaniso**

Acting Head: Institute of Catalysis and Energy Solutions (ICES)  
College of Science, Engineering and Technology  
University of South Africa

Prof. Linda Langaniso is an accomplished academic and researcher with extensive expertise in physical chemistry, petroleum (oil and gas), hydrogen fuel production, renewable energy, and the circular economy. She currently the Acting Head: Institute of Catalysis and Energy Solutions (ICES) in the College of Science, Engineering and Technology and holds a full professorship in Physical Chemistry at the University of South Africa (UNISA), a position she has held since January 2024. Prof. Langaniso's research focuses on areas such as biomass to transportation fuels production, Fischer-Tropsch synthesis, and CO<sub>2</sub> to transportation fuels conversion.

Prior to her current role, Prof. Langaniso served as an Advisor for Resource Efficiency and Circular Economy at the Mpumalanga Green Cluster Agency, where she led market research, stakeholder engagements, and supported activities in circular economy projects. She was also the Director of Research, Innovation, and Postgraduate Support at the Durban University of Technology from May 2020 to August 2023, where she played a pivotal role in developing research policies, securing funds for circular economy projects, and establishing university-industry partnerships.

Prof. Langaniso has held various positions throughout her career, including Professor of Physical Chemistry at the University of Zululand, Senior Researcher at the Council for Scientific and Industrial Research (CSIR), and candidate researcher roles at Fraunhofer IKTS and the University of Kentucky. Her work has consistently focused on establishing research units, raising funds for projects, and supervising postgraduate students.

She holds an MBA in Finance from The University of Edinburgh, a PhD in Physical Sciences (Petroleum - Oil and Gas) from the University of the Witwatersrand, and has contributed significantly to scientific literature with numerous publications and patents. Prof. Langaniso is also known for her work as a high-impact spiritual teacher, healer, and purpose-driven life coach. Her dedication to research and innovation has made her a prominent figure in her field, driving advancements in sustainable energy and the circular economy.