

UCT MEDTECH

DSTI / NRF SARCHI BMEI

# NEWSLETTER

Department of Human Biology  
Division of Biomedical Engineering  
BioMedical Engineering Research Centre



## Major Milestone:

### ISO 13485:2016

The team at the Biomedical Engineering Research Centre (BMERC) / UCT MedTech are excited to share that we have received our ISO 13485:2016 certificate—confirming that we have levelled up to a new gold standard in medical device research and development worldwide!

The ISO 13485 is the internationally recognized standard for quality management systems in the design and manufacture of medical devices.

## MEDTECH MID-YEAR RECAP:

- Hosted the **WHO HQ-AFRO-Country Office** delegation
- Passed the **ISO 13485** accreditation review and acquired certification
- Celebrated the numerous achievements of our staff and student body
- Welcomed **six** new interns aboard
- Contributing to **14** different seminars and symposia
- Acquired a new laser cutting machine
- Welcomed **six** international visitors
- An interdisciplinary state-of-the-art collaboration with the **Iziko Museum** for its 200-year anniversary

Our diverse team of engineers, scientists, clinicians, and entrepreneurs collaboratively create state-of-the-art medical technologies to enhance patient outcomes, lower healthcare expenses, and improve healthcare accessibility.

**READ MORE on our website!**





# WHO-HTAP-UCT 2025

The WHO Health Technology Access Pool (HTAP) recently conducted a face-to-face meeting with UCT, BMERC and MedTech, to establish and advance work plans to identify and secure health technologies that could be offered to the HTAP as part of the recently extended MoU agreement.

We had the distinct privilege to host WHO HQ-AFRO-Country Office delegation who we welcomed alongside the South African Department of Science, Technology and Innovation, the Western Cape Department of Health, the SA Medical Research Council (MeDDIC), and other partners in innovation.



## DELEGATES





# WHO-HTAP-UCT 2025

From 10-12 June, we had the privilege of hosting Dr Claudia Nannei (HTAP Senior Programme Manager); Dr Alya Dabbagh (HTAP Senior Project Manager); Dr Cheleka Mpande (HTAP Technical Officer); Dr Dragana Milic (HTAP Diagnostic Expert); Mr Einstein Kesi (HTAP Medical Devices Expert) and Mr Francis Magombo (South Africa WHO Country Officer)



Together with the convenors, we took time to galvanise our insights and converge on strategies, solutions and future prospects within our growing global network.

We also had an opportunity to platform our researcher students Kerstin Hall; Gokul Nair; Giancarlo Beukes and Raeesa Ismail who presented their technologies developed during their time at UCT MedTech under the supervision of Professor Sudesh Sivarasu.



# ISO 13485:2016 ACCREDITATION

“

## Prof. Sudesh Sivarasu on the ISO Accreditation:



The **ISO 13485** certification opens doors for our technologies to be adopted more confidently by clinicians, regulators, and international partners.

It also sets the foundation for an innovation ecosystem where African-born devices can move from lab bench to bedside with credibility and speed."

For UCT MedTech and South Africa, this is a signal that our regulatory, academic, and industrial communities are coming together to build a resilient, compliant, and export-ready medical technology sector.

I am proud of the BMERC team, and deeply inspired by what this means for the future of equitable healthcare innovation across our continent."

*Professor Sudesh Sivarasu*



The team at the Biomedical Engineering Research Centre (BMERC) / UCT MedTech are excited to share that we have received our ISO 13485:2016 certificate—confirming that we have levelled up to a new gold standard in medical device research and development worldwide!

The ISO 13485 is the internationally recognized standard for quality management systems in the design and manufacture of medical devices.





# SEMINARS & SYMPOSIA



So far in 2025, Prof. Sudesh Sivarasu and team have attended around fourteen speaking engagements and two industry expos.

In June, Professor Sivarasu presented a workshop titled **DESIGN and REGULATORY PATHWAYS for APPROVAL of MEDICAL DEVICES** for the Medical Instruments, Devices and Allied Services MIDAS DST-MAHE HUB.

Professor Sivarasu also hosted Raphael Smith on 1 July in conversation for return to the weekly seminars, titled: **BIOMEDICAL ENGINEERING ENTREPRENEURSHIP**. Keen BME students were indulged with industry insights and strategies to better equip themselves to participate in the bright future of health technologies and medical device development.

**Stay up-to-date by FOLLOWING US on LinkedIn**

In February, the **SA MedTech Masterplan Implementation Strategy** took place, Prof. Sudesh Sivarasu delved into innovative solutions for real-world healthcare. He shed light on South Africa facing a significant health disparity, with the highest health incidence and the least expenditure, which can only be addressed through appropriate health technologies.

In March, the **Executive Leadership Program in Global Surgery** took place, convened by Prof. Salome Maswime; Discussing affordable, appropriate, and sustainable MedTech innovations with global clinicians.

Also in March, the **Global Exchange, Strategic Partnerships, Relations, Services Potential and SU/NU Global Health Knowledge Hub Network Conference** took place. Prof. Sivarasu also delivered a keynote address at the **XI International Conference on Biosignals, Images, and Instrumentation (ICBSII 2025)** in Chennai, India.

In April, Prof. Sivarasu presented, "Climbing the Confidence Curve in Sustainable MedTech Innovation from an LMIC Lens," at the **PSG Institute of Management** in India and joined the **Design of Medical Devices Conference UMN**, hosted by the University of Minnesota.

In May, Prof. Sivarasu presented, "Unpacking the Ethical Blind Spots of MedTech Innovation and the Global Health Tech Divide" at the **UCT Ethics Lab**, and also joined the panel discussion for **Future Scientist's Day** held by the African Research Society to welcome Thandokhulu High School's matriculant cohort.



## Prof. LDM Visit

**Prof. Lisa-Dionne Morris** is a Professor of Public and Industry Understanding of Capability Driven Design at the University of Leeds School of Mechanical Engineering.

She is also the Founder and Director of the Black Female Academics' Network.

# STAFF ACHIEVEMENTS

**Dr. Chibuike Mbanefo** has been appointed as a **Postdoctoral Research Fellow** at UCT MedTech, bringing with him several years of experience across teaching, research, and industrial practice in **Biomedical Engineering** along with **Technology Dr. Nithin Rayudu, PhD**.

**Sheina Rajkumar** was appointed as the **Internal Quality Management System (QMS) Representative** for both **UCT MedTech** and **BMERC**.



[left to right] Prof. Sudesh Sivarsu (Director of UCT MedTech); Ian Calvert (Founder of FURTHER); Bridgit Evans (Head of SAB Foundation); Joel Philpott (Founder of Khaya HealthTech); Abby Blocker (PhD student, Telemedicine Research Group) and Qhamani Maqungu (MedTech Master's Graduate, pursuing PhD in Electrical Engineering).

Bottom left is an image of Khaya HealthTech's **INSPIRE** device.



**Joel Philpott** and his start-up **Khaya HealthTech** have been selected for The 2025 SAB Foundation's Disability Empowerment Awards!

The SAB Foundation runs a callout for Social Innovation Awards as well as Disability Empowerment Awards. Philpott put forward his impressive innovation, **INSPIRE** for the Disability Empowerment Awards, as sleep conditions disproportionately affect people with disabilities.





## STUDENT ACHIEVEMENTS

Phelisa Ntayiya, Grant Sander, Cliff Lowan and Sheina Rajkumar ALL have accepted abstracts in this year's IUPESM World Congress on Medical Physics and Biomedical Engineering.

Alexandra Lancaster had a fencing milestone at the World Championships as the first RSA woman epeeist to make it through to the 2nd round in 10 years!

Phelisa Ntayiya has been selected as a finalist for the Department of Science, Technology and Innovation (DSTI) 2025 SAWiSA Awards.

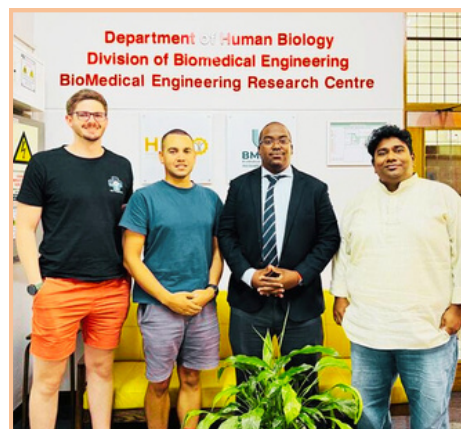


# ESTEEMED VISITORS

UCT MedTech is incredibly privileged to welcome industry colleagues the world over to our research centre to expand our relative networks, collaborate and explore together!

**Simba Makina, MPH, Market Advisor at Enterprise Ireland.**

Discussions centred on fostering bilateral partnerships to drive innovation, open new business opportunities, and promote knowledge exchange. We also explored the potential for collaborative seminars and events aimed at bridging the gap between industry players and academic institutions, creating pathways for impactful collaboration.



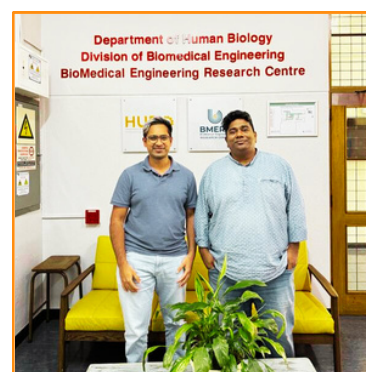
*Prof. Opeolu Beatrice Olutoyin is the Founder and Director of BEE Solutions with a PhD in Environmental Toxicology.*

Professor Opeolu champions collaboration and innovation in environmental science.

We were thrilled to welcome her insights and collaborative energy to the frameworks of our future scaling strategies of health technologies and medical device developments.

*Hemel Soni, Advanced Specialist in Family Practitioner Analytic*

Mr. Hemel's curiosity and passion for bridging the gap between AI and biology were truly inspiring. His reflections on making genetic engineering more accessible, resonates strongly with our ethos of innovation through inclusivity and interdisciplinary thinking.



We also welcomed MBA students from Vlerick Business School, Belgium; the PSG Institute and of course, esteemed members of the World Health Organization's Health Technologies Access Program.



# 2025 UCT MEDTECH GRADUATES



*Dr. Leanne Claire Haworth*

ASTM Assessment of a Novel Glenoid Design: Measurement of Glenoid Edge Motion in Three Degrees of Freedom.



*Ronald van den Berg*

In-Silico Design and Verification of an Extracorporeal Normothermic Cardiac Perfusion System for Use During Heart Transplantation Procedures.



*Ntokozo Magubane*

Design, Verification and Validation of a Dynamic Model for an Intramuscular Autoinjector.



*Mosidi Mokoena*

Arduino-based LAMP Device for Rapid Pathogen Detection



*Masindi Sekhwama*

Fabrication of Microfluidic Chips Using 3D Printing for Integration on LAMP Reactions and LSPR-Based Point-of-Care Systems



*Raeesa Ismail*

A Novel Cough Aerosol Sampling Device for Sputum-Scarce Individuals with Tuberculosis



*Nicola Mason*

Evaluation and Design of an Adapted Endobutton Fixation System for Coronoid Process Fractures

- **Dr. Leanne Claire Haworth** completed her **PhD** with a thesis titled **"ASTM Assessment of a Novel Glenoid Design: Measurement of Glenoid Edge Motion in Three Degrees of Freedom."**
- **Ronald van den Berg** successfully completed his **MSc** with **distinction** and a score of 88% with his thesis titled: **"In-Silico Design and Verification of an Extracorporeal Normothermic Cardiac Perfusion System for Use During Heart Transplantation Procedures."**
- **Ntokozo Magubane** earned her **MSc** in Biomedical Engineering with a score of 73%, with a dissertation titled, **"Design, Verification and Validation of a Dynamic Model for an Intramuscular Autoinjector."**
- **Mosidi Mokoena** completed her **MSc** with **distinction** and scored 77% with a thesis titled, **"Arduino-based LAMP Device for Rapid Pathogen Detection."**
- **Masindi Sekhwama** achieved his **MSc** with **distinction**, with a score of 78% and a thesis titled, **"Fabrication of Microfluidic Chips Using 3D Printing for Integration on LAMP Reactions and LSPR-Based Point-of-Care Systems"**.
- **Raeesa Ismail** completed her **MSc** in Biomedical Engineering with Distinction with **distinction** and score of 82%. Her research, titled **"A Novel Cough Aerosol Sampling Device for Sputum-Scarce Individuals with Tuberculosis"**, is a remarkable achievement that promises to transform TB diagnostics, especially in resource-limited settings.
- **Nicola Mason** completed her **MPhil** with **distinction** and a score of 86% with her thesis titled: **"Evaluation and Design of an Adapted Endobutton Fixation System for Coronoid Process Fractures."**

# 2025 UCT MEDTECH INTERNS

UCT MedTech has welcomed six interns since the beginning of 2025 namely Tatum James; Chrystal Wan; Cameron Hume; Jano Reynolds and from the University of Toronto we welcomed Theophilus Ofori and Jennifer Akaade into the fold!



*Tatum James*

Focused on innovative solutions that improve patient outcomes and drive progress in the biomedical field.



*Chrystal Wan*

Studying towards the completion of her Mechanical Engineering degree at The University of Cape Town.



*Cameron Hume*

Has dual qualifications in Biomedical and Mechanical Engineering



*Jano Reynolds.*

From Stellenbosch University, contributed to the development of existing UCT MedTech technologies under the mentorship of Michael Awood and Jonathan Oehley.



*Jennifer Akaade*

Interests span from MedTech R&D, rehabilitation technologies, and designing patient-centered solutions that create meaningful impact.



*Theophilus Ofori*

Has his focus on wearable health devices, healthcare robotics, rehabilitation technologies, and using computer vision to improve patient safety—particularly in resource-limited settings.



# IFTAR CELEBRATIONS

Orchestrated and held by the students, UCT MedTech's Iftar was given an introductory speech by Maseeha Vania, followed by an insightful recollection on the history and significance of Ramadan by Mariam Ismail.

Saad Naveed brought attendees together with a beautiful prayer, and at 19h12, fasts were broken and everyone came together in gratitude. Students Malihah Abraham and Tawfeeq Khalfe also assisted in the organisation of the meaningful evening.

The highlight was an inspiring address by our Dean, Prof. Lionel Green - Thompson, who truly made this occasion even more special.





# EASTER CELEBRATIONS

This year, UCT MedTech combined our Easter Celebrations with our quarterly birthday bash.

From sneaky egg-hiding spots to friendly competition and shared slices of cake, the celebration brought everyone together for a joyful break. It's always a treat to pause and appreciate the people that make this space so special.





# SOCIAL RESPONSIBILITY & Frugal Biodesign™

This approach involves developing cost-effective and accessible medical technologies that cater to resource-limited settings. The centre's frugal biodesign strategy prioritises affordability, efficiency, sustainability, and user-friendliness.

By utilising local resources and expertise, UCT MedTech creates medical technologies specifically tailored to address the unique healthcare challenges faced by communities in Africa and other resource-limited regions.

This approach aligns with several SDGs, including SDG 3 (Good Health and Well-being), SDG 9 (Industry, Innovation and Infrastructure), and SDG 10 (Reduced Inequalities).

## Social Responsibility:

Through their frugal biodesign efforts, UCT MedTech significantly contributes to social responsibility and sustainable development.

Their development of affordable and accessible medical technologies helps diminish health disparities and enhances healthcare outcomes for individuals in need.



## Have you enjoyed catching up with us at UCT MedTech?

*Under Professor Sudesh Sivarasu, UCT MedTech laboratory houses two units: the Medical Device Laboratory (MDL) and the Orthopaedic Biomechanics Laboratory (OBL). The MDL designs innovative medical devices using CAD, 3D printing, and testing, while the OBL studies biomechanics, influencing orthopaedic device design and surgery. Together, their interdisciplinary approach addresses medical challenges and aims to elevate global healthcare outcomes.*

Find and follow us on our social media pages:

LinkedIn



Instagram



X/Twitter



Facebook



### CONTACT DETAILS:

Website: <https://health.uct.ac.za/medtech>

Email address: [MedTech@uct.ac.za](mailto:MedTech@uct.ac.za)

Office telephone number: 021 650 4804

