



Communication and Marketing Department
Isebe loThungelwano neNtengiso
Kommunikasie en Bemarkingsdepartement

Private Bag X3, Rondebosch 7701, South Africa
Welgelegen House, Chapel Road Extension, Rosebank, Cape Town
Tel: +27 (0) 21 650 5427/5428/5674 Fax: +27 (0) 21 650 5628

www.uct.ac.za

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UCT professor charts a journey of science, service and mentorship in pathology



Professor Komala Pillay

Photo: Lerato Maduna

[Professor Komala Pillay](#) of the University of Cape Town's (UCT) [Faculty of Health Sciences](#) delivered her inaugural lecture titled "Give the Path Less Travelled a Chance – It May Turn Out to Be Magical" on 30 October 2025, tracing her remarkable journey into anatomical pathology, a field that, though often underappreciated, forms the backbone of modern medicine.

Professor Pillay holds the Wernher and Beit Chair of Pathology and leads the Division of Anatomical Pathology at both UCT and the National Health Laboratory Service (NHLS), serving Groote Schuur and Red Cross War Memorial Children's hospitals. She is also an honorary professor at Walter Sisulu University, a distinction that reflects her national and continental influence.

Her passion for medicine took root in childhood, sparked by her father's stories about a young woman from their Durban neighbourhood who became a paediatric doctor. "I was captivated by that story," she recalled. "It planted a seed that one day grew into purpose". Her resolve to pursue a career in medicine was cemented during a school visit to the then University of Natal, where Professor Ronnie Green-Thompson's address left a lasting impression.

In her third year of medical school, she encountered the mysterious, meticulous world of anatomical pathology. "I spent my spare time in the labs learning to cut and stain sections, to interpret the pink-and-blue patterns under the microscope that reveal a patient's diagnosis," she said. "It felt like unlocking a language only the body could speak."

That early curiosity led to her first research projects, including a study on tumour suppressor proteins such as p53 and bcl2 in the childhood cancer rhabdomyosarcoma – work that later informed modern prognostic studies.

Pillay has published more than 100 peer-reviewed papers across oncology, neuropathology, placental pathology, lymphoma and infectious diseases, while mentoring numerous postgraduate students who now lead laboratories across South Africa.

Reflecting on her early career, Pillay recalled the intense rhythm of her years as a pathology registrar. "You quickly learn that turnaround time is everything," she said. "Service first, then everything else, because every report waiting on your desk represents a patient waiting for answers."

Pillay's commitment to both service and scholarship shone through in her groundbreaking research on HIV transmission through the placenta, which showed that specific cellular receptors increase in HIV-positive mothers even on antiretroviral therapy. She said that the project taught her the power of persistence and collaboration – a five-minute conversation with the head of Obstetrics and Gynaecology opened doors that months of bureaucracy had kept closed.

That same spirit of curiosity has since shaped her collaborations with researchers from South Africa and the United Kingdom (UK), and together they have produced influential studies on maternal and neonatal health.

At the Red Cross War Memorial Children's Hospital, her appreciation for cytopathology – the study of whole cells under the microscope – deepened. "Looking at cells without prior sectioning can be magical," she said. "You're seeing life at its most direct level." From urgent intra-operative diagnoses to fine-needle aspiration biopsies that spare children invasive surgery, her work underscores how microscopic precision can translate into profound human impact.

One of her most notable cases involved a muscle biopsy of a newborn that appeared non-diagnostic under light microscopy; however, when analysed using electron microscopy, it revealed crystalline abnormalities associated with a rare actin gene mutation.

"That discovery allowed doctors to investigate for the same condition in the mother's next pregnancy," she said. "That's the real magic: when science changes a family's story."

Her team has made groundbreaking diagnoses in mitochondrial disorders and paediatric tumours, and has developed novel staining techniques to identify bacterial biofilms in infant

tissues – an innovation that is both simple and life-saving, recognised at national conferences.

"Sometimes you think small changes will make a big difference," she said. "But I've learned that to create lasting impact, we must also be bold – take big steps to make big changes."

Under her leadership, UCT and the NHLS are advancing digital pathology and molecular diagnostics to bring cutting-edge technology into the public health sector. Pillay also chairs the NHLS Anatomical Pathology Expert Committee, serves as president of the College of Pathologists of South Africa, and advises the Royal College of Pathologists in the UK, and the Ministerial Advisory Committee for the Prevention and Control of Cancer.

She encouraged young scientists to seek mentors who recognise potential before it is fully revealed. "Be patient with yourself," she told them. "The path less travelled is rarely easy, but every detour teaches you something essential."

As she concluded her lecture, Pillay reflected on the evolving role of pathology in Africa and the next generation of scientists rising behind her. "I feel enormous hope when I see the energy of young pathologists," she said. "They're proving that excellence and service can thrive in the public sector."

Story by Myolisi Gophe, UCT News

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Issued by: UCT Communication and Marketing Department

Ridovhona Mbulaheni

Media Liaison and Monitoring Officer
Communication and Marketing Department
University of Cape Town
Rondebosch
Tel: (021) 650 2333
Cell: (064) 905 3807
Email: ridovhona.mbulaheni@uct.ac.za
Website: www.uct.ac.za