

Eight year achievements under Prof. Oyana's tenure

A legacy well deserved

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Mak develops Air Quality Monitoring device

AirQo is a low-cost air quality monitoring technology developed at Makerere University by a team of engineering and computer science students.

The Smart Bee Monitor for Modern Beekeeping

The innovation allows farmers to detect pest invasions, disease outbreaks, environmental disruptions, hive strength, and the optimal time for honey harvesting.

AI-powered mobility device for the visually impaired

The innovation promises a solution to always having human aides for the visually-impaired.

Word from the Principal



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I am grateful for the opportunity to have served as College Principal for the past eight years (2017–2026), and I look forward to continuing my dedication to academic excellence. As I bid farewell to Makerere University, I am pleased to have served in Top Management and wish the Vice Chancellor and his team continued growth and success. To everyone I have met and have served with, I'll be eternally grateful for their love, comradeship, mentorship, and cordiality, which I have appreciated and shared with them. Thank you very much for making CoCIS my home over the last eight years, and best wishes for continued academic success.

Prof. Tonny Oyana

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INNOVATION. L-Adapter designs fabricated in Mak AI-Health Lab. R- Adapter fixed on microphone holding the smart phone



EDITORIAL TEAM >>

Prof. Tonny Oyana, Principal | Ms. Jane Anyango, Principal Communication Officer
| Ms. Eunice Rukundo, Deputy Chief-PRO | Mr. Agaba Issa Mugabo, Brand/Marketing Officer

TECHNOLOGY

Makerere AI Health Lab is Leveraging Artificial Intelligence for disease Screening The Ocular project is making progress in training lab technicians across Uganda's health facilities on how to use innovative tools for diagnosing malaria, tuberculosis, and cervical cancer



NEW COURSES:

- BSc Data Communication and Software Engineering is running this coming academic year 2026/2027
- Master of e-Governance Technologies and Services started running last academic year 2025/2026



- Yo Waste continues transforming waste management through its location-based mobile platform, connecting over 10,000 households and businesses with waste collectors for efficient, affordable, and data-driven rubbish collection services.
- Mobi Fuel expands access to fuel credit for micro fuel consumers, particularly fishing communities around Lake Victoria, by adopting a user-friendly USSD and mobile money-based system that simplifies fuel purchases and payments.
- The CoCIS Endowment Fund provides opportunities for research and academically outstanding but financially challenged students, reinforcing its commitment to supporting talent and promoting access to computing and information science education.

IN THE NEWS >>



MAKERERE IMPACT: The Makerere student innovation, AirQo, generated media buzz in May. The innovation is a low-cost air monitoring system.

LEADING BY EXAMPLE: How technology developed at Uganda's Makerere University is helping African cities:

FACT FILE >>



Staffing:
87 Academic staff,
30 Non Teaching staff
Total 122
• Student numbers: 2572
• Courses offered:
6 Undergraduate
7 Masters 4 PGD
5 PhD programs

END OF AN ERA: Prof. Oyana Reflects on Eight Years as CoCIS Principal

The outgoing Principal leaves behind a financially stable, academically stronger, and more collaborative college, providing a solid foundation for future growth and excellence.



At a staff retreat held at Speke Resort Munyonyo on June 5, 2026, Prof. Tonny Oyana reflected on his eight-year tenure as Principal. The retreat was to update staff on the status of teaching and research in the college for the past 8 years. Having served from 2017 to 2025, with an extension until June 2026, he used the occasion to share the College's progress, leadership lessons, and to prepare staff for the upcoming transition.

Prof. Oyana explained that when he assumed office in 2017, CoCIS faced serious financial difficulties, including domestic arrears of

Although leaving leadership, he intends to remain connected to CoCIS through research, mentorship, and collaboration.

about UGX 1.8 billion. Determined to stabilise the College, he prioritised financial management and accountability. Through prudent resource mobilisation and diligent oversight, the College generated approximately USD 8 million during his tenure and will leave behind nearly USD 0.7 million in reserves of the College Grant Account. He emphasised that financial stability is essential for institutional success and requires constant monitoring by leaders.

Another major achievement was



investment in staff development. About UGX 1.5 billion was directed toward seed grants, research support, travel opportunities and professional growth initiatives, particularly for junior academics. He also promoted fairness and inclusion among academic and support staff, ensuring more equitable allocation of resources across the college. Prof. Oyana argued that supporting staff is a strategic investment because it enhances productivity and prepares future leaders.

Tips for Future Principals

Drawing on his leadership experience, the outgoing Principal identified four priority areas for future principal:



financial stability, academic excellence, facilities and infrastructure and human resource development. He advised leaders to closely monitor student progress and academic results,

maintain high-quality facilities, and prioritise staff welfare. He stressed that happy and motivated employees contribute significantly to institutional success.

A notable example of his commitment to staff welfare was his defence of the college canteen, which he viewed as an important space for interaction, teamwork and stress relief. Despite proposals to convert it into commercial space, he protected the facility because it strengthened collegiality and workplace morale.

Beyond institutional matters, Prof. Oyana encouraged staff to maintain healthy family relationships and make use of annual leave for rest, reflection and personal growth. He described leadership as service rather than authority, requiring humility, accessibility and hands-on problem-solving.

What Next for Prof. Oyana

As he concludes his tenure, Prof. Oyana plans to return to the United States, honouring a commitment made to his family before joining Makerere University. Although leaving leadership, he intends to remain connected to CoCIS through research, mentorship, and collaboration. He leaves behind a financially stable, academically stronger, and more collaborative college, providing a solid foundation for future growth and excellence.



Prof. Barnabas Nawangwe (6th) with his team in a group photo with staff after the meeting at the CoCIS Conference Room Block A.

PROF. NAWANGWE VISITS: Rallies staff to boost PhD output for global leadership

The Vice Chancellor, Prof. Barnabas Nawangwe, on 16th June, called on staff to intensify efforts to enrol and graduate more PhD candidates. His visit to CoCIS was part of a university-wide tour aimed at assessing research and graduate training, and sensitising staff about Makerere's vision of becoming a research-led institution. He was accompanied by other members of management including the Academic Registrar, Director of Quality Assurance, representatives from the Directorate of Research and Graduate Training, Grants Administration, Management and Support Unit, the Mak Press, and Makerere University Technology and Innovation centre.

Prof. Nawangwe announced plans to introduce a reward system for departments that produce more PhD graduates while upholding academic excellence. He emphasized that Africa's transformation depends on highly trained professionals capable of competing globally. Expressing

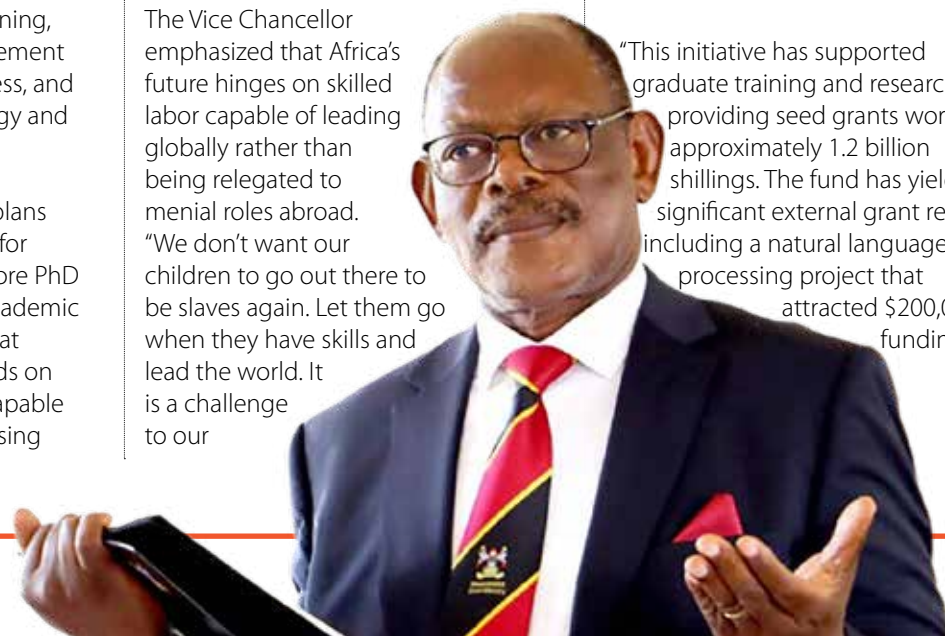
concern that Africa contributes only 3% of global knowledge production, he cited the World Bank's target of one million PhDs in Africa within a decade. Drawing comparisons with China, which now produces more PhDs annually than the United States, he urged the College leadership to take a leading role in expanding doctoral training. With over 1,200 PhD-holding staff members, the VC stressed that the university has the capacity to supervise more doctoral candidates.

The Vice Chancellor emphasized that Africa's future hinges on skilled labor capable of leading globally rather than being relegated to menial roles abroad. "We don't want our children to go out there to be slaves again. Let them go when they have skills and lead the world. It is a challenge to our

generation to transform this continent, to free it from mental slavery and marginalization," he said.

The Principal, Prof. Tonny Oyana, presented the College's achievements. He noted that CoCIS currently offers 17 graduate programs and has produced 66 PhD graduates from 2010 to 2026, including a record 13 in the previous year alone. He highlighted the college's recovery from a major staff exodus and the success of the Research Innovation Skills Enhancement (RISE) Fund.

"This initiative has supported graduate training and research, providing seed grants worth approximately 1.2 billion shillings. The fund has yielded significant external grant returns, including a natural language processing project that attracted \$200,000 in funding"



MAKERERE IMPACT THROUGH RESEARCH AND INNOVATION

Makerere University Develops Air Quality Monitoring Device

THE GAP: Traditional monitoring equipment is often imported and extremely expensive, making it difficult for governments and institutions to gather the data needed to understand and manage air pollution. AirQo provides an home-grown affordable solution to this challenge.

AirQo is a low-cost air quality monitoring technology developed at Makerere University by a team of engineering and computer science students under the leadership of Professor Engineer Bainomugisha. The innovation directly addresses an Africa-wide challenge: the lack of affordable and reliable air quality monitoring systems. Traditional monitoring equipment is often imported and extremely expensive, making it difficult for governments and institutions to gather the data needed to understand and manage air pollution.

Founded as a research initiative in 2015 and later established as a company, AirQo began manufacturing its air quality monitors in 2019. The technology provides an affordable, locally developed alternative designed specifically for African conditions and infrastructure. Its primary goal is to bridge the significant gaps in air quality monitoring across the continent and support evidence-based solutions to air pollution challenges.

How it Works

The AirQo monitors collect air samples and use light-scattering technology to measure particulate matter concentrations in the atmosphere. This process enables devices to detect pollution levels and generate accurate air quality information. The collected data is then analysed and used to monitor current conditions, identify pollution trends, and forecast future air



AirQo device installation in Kisumu, Kenya.

quality levels. The system is designed to meet international standards while remaining cost-effective and practical for local deployment.

A key advantage of AirQo is its ability to provide accurate, hyperlocal, and timely

The technology is designed specifically for African conditions and infrastructure, facilitating evidence-based solutions to air pollution challenges.

data. By generating detailed information from specific locations, the technology helps reveal the scale and severity of air pollution in African cities. Such data is essential because, without reliable measurements, policymakers and environmental agencies cannot fully understand the extent of pollution or design effective interventions.

The technology has already achieved significant deployment across East Africa. In Uganda, more than 187 AirQo monitors have been installed across 80 locations in cities including Kampala, Gulu, Jinja, and Fort Portal.

AirQo has expanded its monitoring network to more than 12 African cities, providing actionable data on air pollution affecting over 60 million people in these cities. The monitors are being used in Dakar, Senegal, and in Douala, Cameroon. In Kenya, the monitors are being used in Nairobi and Kisumu. The information collected supports city authorities in developing policies, strategies, and regulations to reduce air pollution and protect public health, particularly as urban populations continue to grow.



The Smart Bee Monitor for Modern Beekeeping

THE BENEFIT: *The innovation allows farmers to detect pest invasions, disease outbreaks, environmental disruptions, hive strength, and the optimal time for honey harvesting.*

The Smart Bee Monitor, developed under the AdEMNEA Project, enables beekeepers to remotely monitor the health and behaviour of their bee colonies from anywhere.

According to the Principal investigator, Dr Julianne Sansa Otim, bees are endangered yet contribute to biodiversity, as other creatures rely on them for their survival. “The challenge is that because of climate change, different human factors and agro-chemicals, bees are on the decline and are becoming extinct. For the remaining bees, we need to find ways

of discovering what is affecting them, where they thrive, and which kind of plants they like.”

The Smart Bee Monitoring system uses Internet of Things (IoT) technology and sensor networks to track key hive parameters, including temperature, humidity, weight, and carbon dioxide levels. It is powered by solar energy and provides real-time data, including bee sounds, images, and videos. This allows farmers to detect pest invasions, disease outbreaks, environmental disruptions, hive strength, and the optimal time for honey harvesting.

The journey so far

The first prototype was deployed in August 2024 at a beekeeper’s backyard in Kawempe, where researchers

gathered data on hive conditions and bee activity. The system monitors bee health, swarming behaviour, and potential threats to the hive, enabling early detection of stress and other factors that could lead to bee absconding or reduced productivity. The data collected during field testing have demonstrated the technology’s potential to improve hive management and support healthier bee colonies.

The second, enhanced prototype was installed at the Nyakyessesa Skills Incubation Centre at Makerere University in Wakiso District. The upgraded version includes a battery pack and a solar panel backup, allowing it to operate independently of the national electricity grid and making it suitable for remote rural communities.

Prof. Tonny Oyana and Rachid Serraj, Director of Africa Initiative and Strategy for agriculture, water and climate at Mohammed VI Polytechnic University in Morocco, tour the WIMEA lab where the solar-powered smart bee monitors are designed under the leadership of Dr Julianne Sansa Otim.

AI-powered mobility device for the visually impaired

EYE FOR THE BLIND: *The innovation promises a solution to always having human aides for the visually-impaired.*

Students from the Networks Department, under the supervision of Dr Mary Nsabagwa, are working on an innovation called “Eye for the Blind”.

The ‘Computer vision and sonification for the blind’ innovation is intended to save the visually impaired from the need to have a human aide all the time. Using Artificial

Intelligence, sensors placed on users’ chests and toes help detect obstacles. The system gives audio instructions on what to do, which direction to turn, and even tells the person which object is located where in the vicinity.



Staff celebrate Prof. Oyana's legacy

SEND OFF: As CoCIS prepares to bid farewell to Prof. Tonny Oyana after eight years of service as Principal, staff members share personal testimonies of how Prof. Oyana's leadership transformed both the unit and individuals.



Dr. Fiona Penelope
Head of Department, Information Technology
"As a department, IT, we have benefited from new efforts. We have grants running and support systems that have enabled us to grow. What stands out most is your integrity—you do not talk with a double tongue. Your actions have always matched your words, and that consistency has made it easier for us to trust your leadership and pursue new opportunities with confidence."



Dr. Sarah Kaddu
Dean, East African School of Library and Information Science
"You did well to bring the two schools together. That unity has strengthened the College and created a sense of shared purpose. I never thought I would be a leader, but I managed to work with confidence because of your support and encouragement. Thank you for seeing potential in people and giving us the opportunity to grow into leadership roles."



Julius Lebo
Human Resource Officer
"CoCIS has the best meetings. They are short, focused, and straight to the point. Whether on Zoom or in person, people bring relevant issues and discussions remain productive. You have shown us that efficiency and accountability can go hand in hand. The culture you have built at CoCIS is one we value deeply and hope will continue long after your tenure."



Michael Hajusu
Assistant Accountant
"You value clean, accurate, timely, and well-executed work. You also care about students and always pushed us to serve them efficiently rather than keeping them in long queues. Beyond work, your support has been remarkable. The recommendation letter you wrote for me was unlike any I had ever received. It reflected your generosity and willingness to support staff beyond their immediate responsibilities."



Barbara Nalubega
Coordinator, Centre for Innovations and Professional Skills Development
"I have never seen a humble leader like Prof. Oyana. Your concern for people goes far beyond official duties. I remember how you personally visited a security guard when he was hospitalized and how you always stood with staff during times of bereavement and hardship. You have shown us that leadership is not just about managing people—it is about caring for them as family."



Dora Bampagana
Grants Officer
"You are generous and you share your life with us. We have learned so much from your guidance, not only about work but also about interpersonal relationships. Through your mentorship, many of us learned valuable lessons about marriage, parenting, partnership, and balancing professional responsibilities with family life. Your influence has extended well beyond the workplace."



Dr. Joseph Balikuddembe
Dean, School of Computing and Informatics Technology
"You have played your role and many things have been accomplished under your leadership. One lesson that will stay with me is your emphasis on the power of family. You consistently reminded us about listening, showing respect, making decisions with family in mind, and creating time for the people who matter most. Those lessons have shaped both our professional and personal lives."

Pictorial





MAKERERE UNIVERSITY

FOR THESE AND MORE CONTACT:

The Principal, Makerere University College Computing and Information Sciences

Email: principal.cis@mak.ac.ug / pr.cis@mak.ac.ug

Visit our Website: www.cocis.mak.ac.ug

Twitter: MakerereCoCIS

Instagram: <https://www.instagram.com/MakCoCIS>

LinkedIn: <https://www.linkedin.com/company/101267353>