



MAKERERE UNIVERSITY



DRIP

Directorate of Research, Innovation and Partnerships

BULLETIN 2024/2025



**THE
DIRECTORATE
OF RESEARCH,
INNOVATION AND
PARTNERSHIPS
2024/2025
Bulletin**



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Message from The Vice Chancellor

It is with immense pride that I introduce the 2024/2025 edition of the Makerere University Research Bulletin—a dynamic reflection of the outstanding research, innovation, and academic excellence that continue to shape our identity as a leading institution of higher learning. This publication not only highlights our notable progress but also reaffirms our steadfast commitment to remaining a research-intensive university that responds to the urgent challenges of our time locally, regionally, and globally.

As Makerere University embarks on its second century, our journey is guided by the pillars of our strategic plan, which focuses on four overarching priorities:

- Pursuing a robust, research-led agenda that delivers real-world solutions to development needs.
- Revitalizing teaching and learning to reflect shifting societal expectations.
- Strengthening partnerships with communities, industry, and the international academic community.
- Upholding ethical leadership and governance founded on equity, diversity, and gender inclusion.



The progress documented in this bulletin is a product of the unwavering dedication of our faculty, researchers, students, and professional staff. I commend their perseverance, innovation, and scholarly passion, which together advance knowledge and contribute meaningfully to societal transformation.

Throughout the year, we have seen a rise in cross-disciplinary research initiatives, impactful community-based projects, and the translation of ideas into innovations that address real-life issues. Whether in climate adaptation, public health, digital innovation, or sustainable development, our researchers are demonstrating academic leadership and societal relevance. We have also continued to invest in expanding our research capacity by supporting emerging scholars, increasing access to graduate education, and upgrading research facilities. These investments are crucial in cultivating a strong pipeline of future researchers and thought leaders who will shape the direction of Uganda and Africa in the years ahead.

As the global higher education landscape continues to evolve, Makerere University is positioning itself to lead through adaptability, innovation, and strategic partnerships. We are committed to attracting exceptional talent, fostering international collaborations, and creating platforms for meaningful academic exchange. These efforts enhance our global presence and ensure our research remains inclusive, impactful, and responsive to contemporary needs.

To all our students, faculty, alumni, partners, and supporters—thank you for your unwavering belief in our vision. Your support and collaboration are crucial in advancing our research mission. Together, we will continue to create a future where knowledge empowers and uplifts humanity.

Professor Barnabas Nawangwe
Vice Chancellor, Makerere University.

Message from the Deputy Vice Chancellor, Academic Affairs



I am delighted to share with you the 2025 edition of Makerere University Research Bulletin, a publication that stands as a testament to the vibrant intellectual and research activities within our academic community. This bulletin showcases the breadth of innovative research, creative scholarship, and transformative projects that are being undertaken across our university.

As Deputy Vice-Chancellor for Academic Affairs, I am deeply committed to fostering an academic environment that not only values teaching and learning but also places research and innovation at the core of our institutional mission.

The research highlighted in this bulletin reflects our unwavering dedication to advancing knowledge, addressing critical societal challenges, and contributing to the global academic community.

The accomplishments featured here are the result of the hard work, dedication, and creativity of our faculty, researchers, and students. They are also a reflection of Makerere University's strategic focus on research-led teaching, where the latest discoveries and scholarly insights inform our curriculum and enrich the learning experiences of our students.

We are fortunate to have an academic community that is not only passionate about research but also committed to its application in real-world contexts. Whether through collaborative research projects, partnerships with industry, or community engagement, our researchers are making a significant impact locally, nationally, and globally. It is this commitment to research excellence and societal impact that sets our University apart and drives our collective efforts toward achieving our academic mission.

I would like to take this opportunity to commend our faculty, researchers, and students for their outstanding contributions to Makerere University's research enterprise. Your work is making a difference in the world, and your achievements are a source of pride for our entire academic community. I also want to express my appreciation to the Directorate of Research, Innovations, and Partnerships for the continuous efforts in supporting and promoting research excellence across the University.

As you explore the pages of this bulletin, I hope you will be inspired by the innovative ideas, groundbreaking research, and collaborative efforts that are driving the University forward. Let us continue to build on this momentum, striving for excellence in all that we do, and working together to advance the frontiers of knowledge.

Thank you for your ongoing commitment to academic and research excellence. I look forward to the continued success of our university as a leader in research and higher education.

Professor Buyinza Mukadasi (PHD)

Deputy Vice Chancellor, Academic Affairs - Makerere University.

Foreword

I am pleased to present the 2024/2025 edition of the Makerere University Research Bulletin, a publication that highlights our progress in advancing research, innovation, and graduate training across the University.

As we continue to implement the Makerere University Strategic Plan (2020–2030), the Directorate of Research and Graduate Training remains focused on guiding the University toward becoming a fully research-led institution. Our role is to provide policy leadership, support a conducive research environment, and ensure that our graduate training is of high quality, globally competitive, and locally relevant.

Over the past year, we have made significant progress in enhancing research governance and strengthening our innovation systems. A key achievement has been the continued rollout of the Digital Research Information Management System (RIMS), which is helping to enhance transparency, efficiency, and access to research data and graduate training information. RIMS plays a vital role in tracking research output, managing supervisor–student relationships, and monitoring progress within academic units.



We have also advanced the review and development of key policies, particularly those related to graduate admissions, supervision, and examination. These efforts aim to align our systems with international standards while addressing Uganda’s unique development needs.

In addition, we recognize that sustainable research excellence requires adequate funding. Our Resource Mobilization Committee has increased efforts to secure resources through competitive grants, strategic partnerships, and collaborative initiatives. We are especially grateful to the Makerere Research and Innovations Fund (MakRIF), our development partners, and academic collaborators who continue to support our mission.

I would like to express my sincere appreciation to our researchers, supervisors, graduate students, and administrative staff, whose dedication is central to our progress. I also thank our local and international partners for their continued collaboration and support in using research and innovation to address pressing societal challenges.

Looking ahead, we aim to build on our achievements, foster more interdisciplinary research, and expand graduate training opportunities. We are particularly committed to ensuring that our research efforts are inclusive, gender-sensitive, and aligned with both national development priorities and global goals.

I invite all stakeholders—faculty, students, alumni, industry, government, and development partners—to join us in building a vibrant and responsive research and training environment.

Together, let us move forward with renewed energy, shared purpose, and a strong commitment to generating knowledge, driving innovation, and shaping sustainable transformation.

Assoc. Professor Robert Wamala (PHD)
Director, DRIP Makerere University.

INSTITUTIONAL BACKGROUND



Makerere University First Administration Block

Established in 1922 as a humble technical school, Makerere University is one of the oldest and most prestigious Universities in Africa. In January of that year, the school, which was later renamed Uganda Technical College, opened its doors to 14 day students who began studying carpentry, building construction and mechanics. In a short time, the College began offering various other courses in medical care, agriculture, veterinary sciences and teacher training. It expanded over the years to become a Center for Higher Education in East Africa in 1935. In 1937, the College started developing into an institution of higher education, offering post-school certificate courses. In 1949, it became a University College affiliated to the University College of London, offering courses leading to the general degrees of its then mother institution. With the establishment of the University of East Africa in June 1963, the special relationship with the

University of London came to a close and degrees of the University of East Africa were instituted. On July 1, 1970, Makerere became an independent national university of the Republic of Uganda, offering [undergraduate](#) and [postgraduate](#) courses, leading to its own awards. Currently, Makerere University offers a combination of day, evening and external study programmes to a student body of about 35,000 undergraduates and 3,000 postgraduates (both Ugandan and foreign). It is also a very active centre for research and innovations. The University transitioned from the faculty-based to the collegiate system on 1st July 2011. It officially transformed into a Collegiate University in December 2011 with [9 Constituent Colleges](#). By July 2014, [ten Constituent Colleges](#) including the [School of Law](#) were operating as semi-autonomous units of the University.



Makerere University

IVORY TOWER

current Administration Block

College of Agricultural and Environmental Sciences

CAES



- School of Agricultural Sciences
- School of Forestry, Environmental and Geographical Sciences
- School of Food Technology, Nutrition, and Bio-engineering

College of Business and Management Sciences

CoBAMS



- School of Economics
- School of Business
- School of Statistics and Planning

College of Computing and Information Sciences

CoCIS



- School of Computing and Informatics Technology
- East African School of Library and Information Science

College of Engineering, Design, Art and Technology

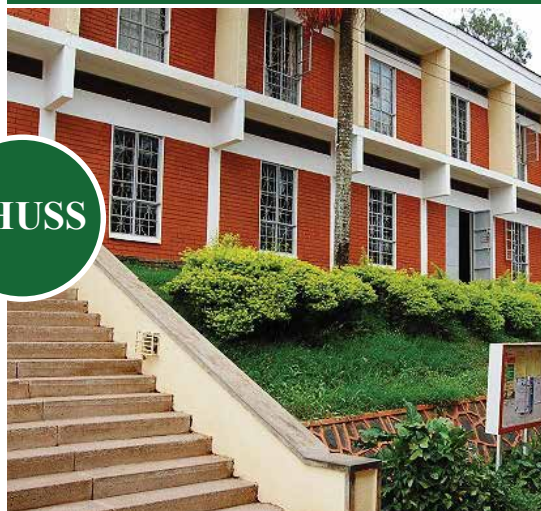
CEDAT



- School of Engineering
- School of the Built Environment
- The Margaret Trowell School of Industrial and Fine Art

College of Humanities and Social Sciences

CHUSS



- The School of Liberal and Performing Arts
- The School of Women and Gender Studies
- The School of Languages, Literature and Communication
- School of Psychology
- The School of Social Sciences
- Makerere Institute of Social Research

College of Education and External Studies

CEES



- School of Education
- School of Distance and Lifelong Learning
- East African School of Higher Education Studies and Development

College of Health Sciences

CHS



- The School of Medicine
- The School of Public Health
- The School of Biomedical Sciences
- The School of Health Sciences
- The Dental School
- The University Hospital

College of Veterinary Medicine, Animal Resource and Bio-Security

CoVAB



- School of Bio-security, Biotechnical, and Laboratory Sciences
- School of Veterinary and Animal Resources

School of Law

SoL



- The Department of Law and Jurisprudence
- Department of Public Law
- Department of Commercial Law
- Department of Environmental Law
- Department of Human Rights and Peace Centre

College of Natural Sciences

- The School of Physical Sciences
- The School of Biosciences

CoNAS



Makerere University School of Public Health

MakSPH



- The Department of Community Health and Behavioral Sciences
- Department of Disease Control and Environmental Health
- Department of Epidemiology and Biostatistics
- Department of Health Policy Planning and Management.

THE DIRECTORATE OF RESEARCH, INNOVATION AND PARTNERSHIPS

In 1994, Makerere University council approved the establishment of a school of Postgraduate studies, which later became the Directorate of Research and Graduate Training in 2010 and was transformed into the Directorate of Research, Innovation and Partnerships (DRIP) in 2025.

The DRIP plays a key role in advancing the University's mission by overseeing and promoting research activities, fostering innovation, and establishing strategic partnerships.

THE DRIP SPECIFIC FUNCTIONS AND RESPONSIBILITIES.



1. Promoting and coordinating research activities: Fosters a vibrant research culture across different academic, administrative, and research units in line with the University's strategic goals.



2. Facilitating Innovation and Technology Transfer: Supports translation of research findings into practical applications and manages intellectual property rights to ensure that research outputs are effectively protected and utilised.



3. Research capacity building: The Directorate oversees and grows capacity in research, innovation, and outreach among faculty and students, providing training and resources to enhance their skills and effectiveness. This contributes to the overall research culture and productivity of the University.



4. Enhancing research capacity and infrastructure: works to develop the University's research capabilities by providing access to necessary facilities, resources, and training programs that support high-quality research.



5. Securing research funding: Assists researchers and graduate students in identifying potential funding opportunities for their projects.



6. Overseeing research ethics and integrity: ensures that all research activities comply with ethical standards and regulatory requirements, maintaining the integrity and credibility of the university's research endeavours.



7. Establishing and managing partnerships: build and maintain collaborative relationships with other institutions to enhance research opportunities and resource sharing.



8. Disseminating research outcomes: promotes the dissemination of research findings through publications, conferences, and other platforms.



9. Promoting community engagement and outreach: Facilitates initiatives that apply research insights to community development, fostering a reciprocal relationship between the University and society.

By fulfilling the functions, the DRIP ensures that the University remains at the forefront of academic excellence, contributes to societal advancement through innovation, and builds meaningful collaborations that extend its impact beyond the campus. The DRIP builds and sustains most of its activities on collaboration and active partnerships with academic and administrative units within the University as well as with external stakeholders and development partners.

MAKERERE UNIVERSITY'S RESEARCH AND INNOVATIONS WEEK 2025

LAUNCHED BY H.E THE PRESIDENT OF THE REPUBLIC OF UGANDA, YOWERI KAGUTA MUSEVENI



President Yoweri Kaguta Museveni inspecting the research exhibitions at Makerere University



On 8th April 2025, H.E President Yoweri Kaguta Museveni launched the three-day Research and Innovations Week at Makerere University. The event, which was held at the University's Freedom Square and Main Administration Building, offered a dynamic exploration of research breakthroughs and innovative projects in fields such as health care, critical infrastructure, behavioral science research and emerging technologies among others. On his tour of the exhibition of multi-disciplinary projects, President Museveni was joined by Hon. Dr. Joyce Moriku Kaducu who was representing the Minister of Education and Sports, Hon. Dr. Monica Musenero, Minister for Science, Technology and Innovation, Prof. Barnabas Nawangwe, Vice Chancellor Makerere University, Mrs. Lorna Magara, Chairperson of the Makerere University Council, and other dignitaries. In his keynote address, President Museveni congratulated

Makerere on achieving such a milestone, praising the University community for the impressive innovations showcased. Expressing his satisfaction with the diverse innovations displayed, President Museveni also thanked the university administration for responding to societal needs. He noted, "The money we are allocating for research and innovations is merely 'endozo' (jaribu, a sip, a taste); we shall provide more in the future." While delivering remarks by the First Lady and Minister for Education and Sports, Hon. Janet Kataaha Museveni, Hon. Dr. Joyce Moriku Kaducu conveyed warm regards from the Minister to the Makerere University fraternity, and emphasized the Minister's unwavering commitment to advancing education and research in Uganda.



Hon. Kaducu also highlighted the establishment Mak-RIF as a testament to the government’s commitment to research and innovations, adding that since 2019, the Fund has supported over 1,300 projects and has contributed immensely to industrial growth and livelihood improvement by fostering homegrown solutions across sectors such as agriculture, health, technology, and governance. She lauded the projects

that are currently ready for commercialization and the policy recommendations generated, urging greater engagement from the private sector to leverage these outputs. Hon. Kaducu extended appreciation to the university leadership, Mak-RIF Secretariat, and all researchers, and invited participants to engage meaningfully with the exhibition.



A congregation during Makerere University’s Research and Innovation week 2025.

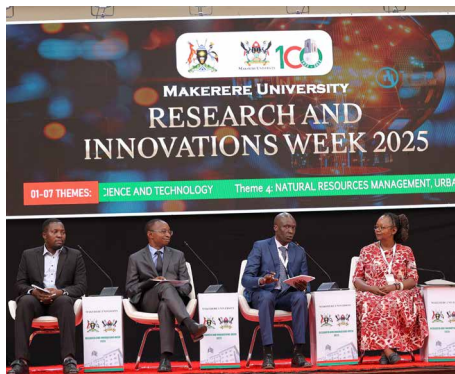
Mrs. Lorna Magara, Chairperson of the Makerere University Council, highlighted that the projects on display were designed to enhance productivity, empower individuals and stimulate wealth creation at all levels of society.” She called for enhanced collaboration among academia, government, industry, and civil society, to ensure that Makerere University remains at the forefront of sustainable development and impact for the benefit of current and future generations.

The Minister for Science, Technology, and Innovation, **Hon. Dr. Monica Musenero**, called upon the government to buy local products. She asked President Museveni to mandate that all procurements for vehicles for MPs, Ministers, and all government agencies be sourced from Kiira Motors. Minister Musenero argued that this move would provide a ready market for the new local car production plant and foster its rapid growth. She expressed that the same approach should be applied to all domestically produced items developed by Ugandan researchers and innovators.



A group photo of Mak-RIF Secretariat GMC and top University Management with H.E the President of the Republic of Uganda, Yoweri Kaguta Museveni.

MAKERERE UNIVERSITY'S RESEARCH AND INNOVATION WEEK 2025 IN PICTORIAL



Some of the panelists during the Research and Innovation week 2025 Discussions and Pitching



some of the University Students and Studets' Guild Leadership, in a group photo with H.E the President of the Republic of Uganda, Yoweri Kaguta Museveni.



THE MAK-RIF OFFICES



Prof. Fred Masagazi Masaazi, Mak-RIF Chairman



GOVERNMENT OF UGANDA

Mak-RIF has since 2019 awarded grants for research projects, forged collaboration with ministries, departments and agencies as well as promoting dissemination of research findings to the community and policy makers and this is made possible with funding from the government of the Republic of Uganda.



MAKERERE UNIVERSITY

RESEARCH DISSEMINATION

Prof. Ezra Suruma (C), Prof. Barnabas Nawangwe (5th Left), Prof. Fred Masagazi-Masaazi, and officials from the PDM Lab, NPA, MoFPED, UNDP, OPM, OWC after a brainstorming workshop to discuss findings and emerging issues in the implementation of the Parish Development Model (PDM) on 12th November 2024.



Prof. Barnabas Nawangwe, VCMakerere University with the Mak-RIF Grants Management Committee, and Secretariat convened an engagement with representatives from Government Ministries, Departments and Agencies to review the Mak-RIF Research Agenda in August 2023.



Members of the Grants Management Committee (GMC), College Principals, and the Mak-RIF Secretariat pose for a group photo at the Makerere University Main Building after the meeting on 23rd October 2025



Kampala Capital City Authority (KCCA) at MaK-RIF offices meet to benchmark and understand ways in which Mak-RIF can support research on urban development and form urban policy.



A group photo of participants at the dissemination of a competency profile for graduate teachers in Uganda based on the competence based secondary school curriculum in 2024.



Dr. Roy Mayega (standing), the Secretary to the GMC, speaking about Mak-RIF's vision and the characteristics of college-led projects during a meeting between the GMC, College Principals, and the Mak-RIF secretariat which was held in Makerere on 23rd October 2024.



Prof. Fred Masagazi-Masaazi, Chairperson of the Mak-RIF Grants Management Committee, addressing the CHUSS CERTL International Conference at Fairway Hotel on 15th November 2024

Mindset Change and Socioeconomic Transformation from People's World (MiSeT) project

Dr. Twine Hannington Bananuka, the Principal Investigator (PI) of the Mindset Change and Socioeconomic Transformation from People's World (MiSeT) project has noted that the government has been doing much to move people from poverty into middle income status through poverty-alleviation initiatives like Bonna Bagaggawale (prosperity for all), National Agricultural Advisory Services (NAADs), and Operation Wealth Creation among others.

He has however added that these initiatives have yielded little or no results and has associated their limited success to the absence of community participation in the development of the initiatives. Several other explanations have been advanced as to why previous government programmes have minimally achieved their intended objectives, among which has been peoples' mindsets.

"Many people know about government programs and are benefitting from them. However, poverty alleviating programmes are conceived by the government, development partners, and researchers without putting into consideration what people are thinking or what they want," said Dr. Bananuka.

The MiSeT project interacts with communities using the problem-posing approach and engages local leaders, change agents, and selected community members to walk a journey of mindset change.

This approach leads project participants into critical reflection where they come up with solutions to better their lives. "Mindset change is not achieved by some form of an education or training. It is rather a lifestyle informed by a conscious process of engagement with people and is highly contextual.

We empower communities to collectively develop solutions to the problems they have, change their mindsets, and take action towards their development," Dr. Bananuka adds. Connection to the Parish Development Model (PDM) One of the seven pillars of PDM focuses on mindset change. However, most times, when programmes talk of mindset change, it is assumed that people ought to change towards a particular world view/standard.

MiSeT facilitates people to engage in a process of self-

awareness/conscientization to question, re-evaluate their beliefs, and to construct a pro-development mindset in their given contexts. Mindset is not uniform but affects behaviors and people's attitude towards life.

A positive mindset is perhaps something that would enable people to live better lives and harmoniously with one another. "Government is slowly realizing that people's problem is not just money but rather mindsets. However, one pillar on mindset change in the PDM is not enough. For best results, we need a whole government project on mindset change that runs for at least 5-7 years," says Dr. Bananuka.

MiSeT creates opportunities such as increased productivity and higher incomes, an equitable society, value-consciousness, better livelihoods for all, and the ability to tame nature. The project's findings also create an opportunity for central and local governments to benchmark for wider usage.

The one year project was launched in Kampala on 27th August 2024 and is funded by the Government of Uganda through the Makerere University Research and Innovations Fund (Mak-RIF).



Dr. Twine Hannington Bananuka, the Principal Investigator of the Mindset Change and Socioeconomic Transformation from People's World (MiSeT) project speaking during its launch in Kampala on 27th August 2024.



Representatives from Mak-RIF, CEES, and other participants pose for a group photo at the launch of the MiSeT project

ENHANCING CAPACITIES OF WOMEN TO LEADERSHIP POSITIONS IN UNIVERSITIES IN UGANDA (WOLEP)



Principal Investigator: Dr. Florence Nakamanya

This project employed an interpretive approach and purposely selected 29 females from Makerere University, Kyambogo University, Kabale University, Uganda Christian University, Uganda Martyrs' University, Ndejje University, Kampala International University, Nkumba University, and St. Lawrence University. Leadership trainings were done using online technologies such as Zoom. Additionally, senior female leaders served as mentors and were invited to share their leadership experiences using online technologies such as recording videos. Their leadership



of participants poses for a group photo after a dissemination meeting on Enhancing Capacities of WOLEP held in Kampala

experiences were profiled and later accessed by other female leaders to enable them to overcome challenges, hence increasing the number of women in leadership in Ugandan Universities. Dr. Nakamanya urged universities to initiate sustainable networking platforms that provide avenues for incumbent and aspiring leaders to share experiences, challenges and new insights on how to perform their duties through periodic meetings and reflective seminars.

TACKLING YOUTH UNEMPLOYMENT: ALIGNING UNIVERSITY TRAINING TO INDUSTRY SKILLS DEMAND THROUGH A UNIVERSITY-INDUSTRY COMMUNICATION MODEL



Principal Investigator: Dr. Annabella Habinka

This project tracked the educational journey of students who enrolled in Primary One in 2007 and followed them until graduation. It was found that only 6 percent of the cohort managed to reach Senior Six, with the remaining 94 percent dropping out. Dr. Habinka and the project team questioned how many of

the 6 percent who attend university actually secure employment after graduation. Project partners include Makerere University, Makerere University Business School (MUBS), National Planning Authority (NPA), National Council for Higher Education (NCHE), and the National Curriculum Development Center (NCDC) among other stakeholders. Project team members include Dr. Annabella Habinka, the Principal Investigator, Ms. Barbara Kayondo, Co-Principal Investigator, Dr. Hamis Mugendawala, a researcher at NPA, and Mr. Moses Muhame, the Project Coordinator.



Dr. Annabella Habinka providing a project background during a dissemination workshop held in Kampala on 11th December 2024

INTEGRATION OF ON-GRID AND OFF-GRID DECENTRALIZED RENEWABLE ENERGY SYSTEMS IN UGANDA



Participants at the dissemination meeting held in the college Boardroom on 15th November 2024.

The Department of Electrical and Computer Engineering at the College of Engineering, Design, Art, and Technology (CEDAT) conducted a study on the Integration of On-Grid and Off-Grid Decentralized Renewable Energy Systems in Uganda. A dissemination seminar was convened at the college on 15th November 2024, during which stakeholders were apprised about the process, findings, and recommendations of the research, supported by the Government of Uganda through the Makerere University Research and Innovations Fund (Mak-RIF). The research team led by Dr. Abubaker Waswa Matovu, the project Principal Investigator presented the findings and recommendations from the project whose objective was to undertake a Techno-Economic Analysis of the integration of the centralized grid and decentralized renewable energy off-grid system, by developing a model for integrating centralized grid-based connections with decentralized off-grid systems. Key among the recommendations was the institution of conducive policies and regulations such as enabling grid feed-in and cost-effective tariffs for off-grid developers, and collaborative planning, design, and installation of mini-grids, ready for grid integration. Ms. Josephine Kakande, who is part of the project team noted that the project was implemented at three sites namely Nyenje and Kyampisi for

on-grid and Kiwumu in Mukono District for off-grid where a mini-grid was installed with solar PV, battery storage, and genset. She explained that the study came up with a Smart Energy Meter prototype that would help the customers get an understanding of their energy consumption patterns. Makerere University in partnership with Power for All and Energro developed a customized monitoring and data collection package designed to accommodate the limitations of rural settings. A power monitoring solution using Beitutu Smart Plugs and Amazon Cloud services was developed and deployed for monitoring the power consumption patterns of the appliances. The Dean of the School of Engineering, Assoc. Prof. Dorothy Okello who was at the dissemination event said that the project was one way of showcasing demand for energy resources upon which other players can build. Ms. Evelyn Nyachwo, a Research Support Officer who made remarks on behalf of Mak-RIF urged researchers to take research findings from the shelves and use it to benefit communities. This study was done in partnership with Mak-RIF, Power for All, Umeme, Equatorial Power, NOA Uganda services, the Centre for Research in Energy and Energy Consumption (CREEK), as well as the communities, farmers, solar system operators, and technicians who gave valuable information.



Principal Investigator: Mr. Ronald Jjagwe

FIRM-SPECIFIC, MARKET-CENTRIC, AND POLICY-RELATED DETERMINANTS OF THE 'COMMERCIALIZATION VALLEY OF DEATH' ENCOUNTERED BY TECHNO-BUSINESS FIRMS IN UGANDA SYSTEMS IN UGANDA.

“Turning ideas into marketable products can be challenging, and firms often struggle to bridge the gap between prototype development and successful product commercialization,” Mr. Jjagwe’s study is being funded by the Government of Uganda through

Mak-RIF and it aims to examine and evaluate the various factors influencing CVD, with a particular emphasis on often-neglected firm-specific, market-oriented, and policy-related elements within Uganda’s emerging techno-business sector.

MOLECULAR EPIDEMIOLOGY OF CANDIDA SPECIES
CAUSING OROPHARYNGEAL CANDIDIASIS IN HIV/AIDS INDIVIDUALS IN UGANDA



Mr. Benson Musinguzi after presenting his abstract on Molecular Epidemiology of Candida Species Causing Oropharyngeal Candidiasis in HIV/AIDS Individuals in Uganda held at Hotel Africana on 16th – 17th October 2024

A study on Molecular Epidemiology of Candida Species Causing Oropharyngeal Candidiasis (OPC) in HIV/AIDS Individuals in Uganda has stressed the need for research on increasing capacity to combat communicable and non-communicable diseases and reduce the pressure on Uganda's health systems. While presenting his abstract during the 18th Joint Annual Scientific Health Conference (JASHC) held at Hotel Africana on 17th October 2024, Mr. Benson Musinguzi, the Principal Investigator of this research project noted that OPC is an AIDS-defining illness in over 90% of HIV infected individuals and that 45,000 HIV/AIDS associated OPC occur each year in Uganda.

“This study uses molecular approaches to determine the candida species, antifungal resistance profiles, virulence profile and relatedness of candida species causing OPC among HIV/AIDS individuals in Uganda,” Mr. Musinguzi explained. Molecular Epidemiology of Candida Species Causing Oropharyngeal Candidiasis in HIV/AIDS Individuals in Uganda is the first study to characterize candida species causing OPC in Uganda. Its findings will be used to provide evidence-based information on the candida species. Mr. Musinguzi appreciated the Government of the Republic of Uganda for funding his research through Mak-RIF.



Mr. Benson Musinguzi (1st right) after presenting his abstract on Molecular Epidemiology of Candida Species Causing Oropharyngeal Candidiasis in HIV/AIDS Individuals in Uganda during the 18th Joint Annual Scientific Health Conference (JASHC) held at Hotel Africana

IMPARTING ENTREPRENEURSHIP SKILLS IN UNIVERSAL SECONDARY EDUCATION LEARNERS THROUGH STUDENT TRAINING FOR ENTREPRENEURIAL PROMOTION



CO - Principal Investigator: Dr. Badru Musisi

Researchers at Makerere University have developed a scalable and sustainable Student Training for Entrepreneurial Promotion (STEP) program to Universal Secondary School (USE) teachers and students. During a dissemination meeting at Makerere University on 10th October 2024, Dr. Badru Musisi, the Co-Principal Investigator of the project said that unlike regular entrepreneurship training programs in Uganda, STEP is unique and innovative in the sense that it is action oriented, evidence based, scientifically evaluated, and locally embedded. He added that rising

unemployment and poverty among hordes of vulnerable young people who typically attend USE schools, needs urgent attention because it poses a clear and present social, economic, political, and security danger to the country. Researchers at Makerere University have developed a scalable and sustainable Student Training for Entrepreneurial Promotion (STEP) program to Universal Secondary School (USE) teachers and students. During a dissemination meeting at Makerere University on 10th October 2024, Dr. Badru Musisi, the Co-Principal Investigator of the project said that

unlike regular entrepreneurship training programs in Uganda, STEP is unique and innovative in the sense that it is action oriented, evidence based, scientifically evaluated, and locally embedded. He added that rising unemployment and poverty among hordes of vulnerable young people who typically attend USE schools, needs urgent attention because it poses a clear and present social, economic, political, and security danger to the country. 100 USE learners from Mityana SS and 100 USE learners from Nakanyonyi SS in Mukono district were trained in the first cohort in FY 2021/2022 while 100 USE learners from Lweru SS, Buikwe and 100 USE learners from Bombo SS, Luweero

have been trained in the FY2023/2024 cohort. Each group of students went through a 12-week training on how to identify viable business opportunities and how to start micro businesses. Mr. Abdul Nsereko, an Education Officer in Luweero district, commended the project for supporting and skilling youth in entrepreneurship. Through the project, learners can identify business opportunities and engage practically. With funding from the government of Uganda through Mak-RIF, the project is strengthening the capacity of teachers to support students.

DISSEMINATION OF MEDICAL RESEARCH FINDINGS AMONG MEDICAL RESEARCHERS IN A TERTIARY INSTITUTION IN UGANDA

A new study conducted at Makerere University's College of Health Sciences (CHS) has revealed that a staggering 80% of science research projects remain idle, failing to translate into practical solutions or drive development. The research, led by Dr. Alison Annet Kinengyere, found that scientists often struggle to communicate their findings beyond academic journals and conferences. The study was released as part of the Alliance For

Medical Research Communication (AMRC) project. In his key note address, Dr. Moses Ocan, a lecturer in the Department of Pharmacology at CHS urged researchers to improve the impact of research through policy briefs, stakeholder engagements, community dialogues, partnerships with the media, and adding incentives to publications among other strategies.

Project outputs

Some of the outputs of the AMRC project include

- A publication in the African Journal of Health Sciences accessible here <https://www.ajol.info/index.php/ahs/article/view/280088>
- News articles, documentaries, animations, infographics, TV talk shows, cartoons etc translating medical research into products that are more shareable and relatable to the public. Such products include <https://www.youtube.com/watch?v=CjHtEBm82Q>
- A draft policy brief. The final version will be shared with relevant MDAs

The AMRC project aims to inspire researchers to be more intentional about dissemination of research findings, conduct studies that contribute to improving healthcare in Uganda, improve channels of communication and research dissemination



Dr. Alison Annet Kinengyere, Principal Investigator

THE UNIVERSITY RESEARCH AGENDA 2025/2030

H.E THE PRESIDENT OF THE REPUBLIC OF UGANDA, YOWERI KAGUTA MUSEVENI LAUNCHED THE AGENDA ON 8TH APRIL, 2025

The Makerere University Research Agenda 2025/26 - 2029/30 was formulated in lieu of the national, regional and global context. Nationally, the plan is reflective of the range of current legal and policy frameworks including Vision 2040 and the Fourth National Development Plan (NDP IV). On the other

hand, the plan is globally anchored – among other frameworks - to the Sustainable Development Goals (SDGs) (2015) and Africa Agenda 2063. These contexts not only highlight the role of the University in national and global development but also influence the thinking behind the strategic direction.



President Yoweri Kaguta Museveni launches the Research Agenda 2025/26 - 2029/30. with him in the group photo from left is Dr. Crispus Walter Kiyonga - Chancellor, Makerere University, Dr. Monica Musenero - Minister of Science, Technology, and Innovation, Hon. Dr. Joyce Moriku Kaducu representing the First Lady and Minister for Education and Sports, Hon. Janet Kataaha Museveni, Mrs. Lorna Magara, Chairperson of Makerere Council, Prof. Barnabas Nawangwe, Vice Chancellor - Makerere University, Assoc. Prof. Robert Wamala AG. Director - DRGT

THE SIX RESEARCH AGENDA STRATEGIC OBJECTIVES.

The Research Agenda has six strategic objectives that the University aims to achieve through its research activities. These have been aligned with the University’s Strategic Plan and the overall mission, vision and values of the University.



1. To create an enabling, harmonious, transparent, and efficient environment for research and innovation



2. Cultivate strategic partnerships with other research institutions, industry partners, government agencies, and non-profit organizations to enhance research capabilities and address complex challenges collaboratively;



3. Enhance communication and outreach efforts to disseminate research findings to diverse audiences, including the public, policymakers, and industry stakeholders;



4. Facilitate the transfer of research findings and technologies from the University to industry, contributing to economic development and technological progress



5. Promote ethical research practices and responsible conduct of research, ensuring that the University's research activities align with high ethical standards;



6. Improve funding and resources to support research initiatives, infrastructure development, and the expansion of research programs

THE RESEARCH AGENDA PRIORITIES.

These objectives collectively guide the development and implementation of the University’s research agenda, providing a framework for prioritizing resources, fostering a culture of research excellence, and maximizing the impact of research activities on both academic and societal fronts. The University research agenda covers the following research priority areas:



Health and Health Systems



Agricultural Transformation, Food Security and Livelihoods



Natural Resources Management and Climate Change



Sustainable Urbanization and Housing



Education and Education Systems



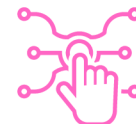
Cultural Heritage and Preservation



Governance, Social Justice, and Equity



Economic Growth, Business and Innovation



Science, Engineering and Technology

To execute this University research agenda and drive innovation across diverse disciplines, a well-defined and robust funding strategy is imperative. The University is working hard to secure sustainable funding from a variety of

sources (within and outside the country) to support the research initiatives, foster collaboration, and elevate the reputation of Makerere University as a leading research institution.



THE UNIVERSITY RESEARCH AGENDA 2025/2030

In alignment with the Makerere University vision of becoming a research-led university, the Vice Chancellor introduced excellence awards as a mechanism of motivating university staff to conduct competitive, impactful, and cutting-edge research.

During the 74th graduation ceremony in January 2025, several faculty members from different colleges were awarded the Vice-Chancellor’s Excellence Awards.

The Vice Chancellor found it important to streamline the process of identifying the best researchers and best teachers in the different Colleges in the University. This is in line with the Excellence Awards that are now a worldwide phenomenon, though they exist in different forms.

He therefore set up a Senate Committee with the overall objective of reviewing the Vice-Chancellor’s Excellence Award.

The Categorization of research excellence awards was made according to the Colleges, academic ranks, and academic disciplines. Categorization by Seniority is intended to encourage recognition of the young upcoming researchers; otherwise, they might be obscured by the senior researchers.

For the year 2024, the Committee considered four categories of awards out of the six award categories for each college in the university:

1. Early career Award,
2. Mid-career Award,
3. Senior Researchers Award and
4. The Best Teacher Award.

The remaining two categories, i.e, the Creative Works Award and the Best Supervisor Award, are to be considered in the future.



The Chancellor, Members of the University Management, and the recipients of the Vice-Chancellor’s Excellence Awards at the 75th Graduation Ceremony on 17th January, 2025.

EARLY CAREER AWARDS

In the last two years (2), the candidate should: (i) be at the rank of Assistant Lecturer, (ii) have at least three (3) peer-reviewed publications.

Table 1. Early Career Awards for academic staff by College

College	Award Name	Rank	Publications
CAES	Bwambale Erion	Assistant Lecturer	15 Publications.
	Nsubuga Denis	Assistant Lecturer	3 Publications.
	Asiimwe Robert	Assistant Lecturer	3 Publications.
CEDAT	Namakula Hidayat	Assistant Lecturer	5 Publications.
	Namujju Donna Lillian	Assistant Lecturer	4 Publications.
	Wesonga Rachael	Assistant Lecturer	4 Publications.
CEES	Oketch Okwong Reymick	Assistant Lecturer	3 Publications.
CoCIS	Ggaliwango Marvin	Assistant Lecturer	10 Publications.
CoBAMS	Ssempala Richard	Assistant Lecturer	5 Publications.
	Namugenyi Christabellah	Assistant Lecturer	5 Publications.
CHS	Ndejjo Rawlance	Assistant Lecturer	31 Publications.
	Nalwanga Damalie	Assistant Lecturer	6 Publications.
	Namutebi Mariam	Assistant Lecturer	6 Publications.
CoNAS	Omara Timothy	Assistant Lecturer	17 Publications.
	Mukiibi Ssewanyaga Ivan	Assistant Lecturer	3 Publications.
	Sadik Mustafa Abubakar	Assistant Lecturer	3 Publications.
CoVAB	Eneku Wilfred	Assistant Lecturer	7 Publications.
	Abigaba Rubaijaniza	Assistant Lecturer	6 Publications.
	Ssajjakambwe Paul	Assistant Lecturer	6 Publications.
CHUSS	Musanje Khamisi	Assistant Lecturer	10 Publications.
	Turyomurugyendo Florence	Assistant Lecturer	3 Publications.



Dr. Zahara Nampewo, Senior Lecturer and Deputy Principal. School of Law receiving the VC excellency award

MID CAREER AWARDS

In the last two years (2), the candidate should: (i) be at the rank of Lecturer or Senior Lecturer, (ii) have at least six (6) peer-reviewed publications

Table 2. Mid Career Awards for academic staff by College

College	Name	Rank	Publications
CAES	Mugabi Robert	Lecturer	23 Publications.
	Dramadri Isaac Onziga	Lecturer	14 Publications.
	Wanyama Joshua	Senior Lecturer	13 Publications.
	Nuwamanya Ephraim	Lecturer	12 Publications.
CoBAMS	Kisaakye Peter	Lecturer	11 Publications.
	Tibaingana Anthony	Lecturer	7 Publications.
	Atwebembeire Mushomi John	Lecturer	7 Publications.
	Sendawula Kasimu	Lecturer	7 Publications.
CoVAB	Muhanguzi Dennis	Senior Lecturer	14 Publications.
	Vudriko Patrick	Lecturer	12 Publications.
	Mutebi Francis	Lecturer	12 Publications.
	Nanteza Ann	Senior Lecturer	10 Publications.
CoCIS	Jjinga Daudi	Lecturer	18 Publications.
	Odongo Eyobu Steven	Lecturer	8 Publications.
	Namatovu Kasujja Hasifah	Lecturer	6 Publications.
CEES	Ssekatawa Kenneth	Lecturer	9 Publications.
CoNAS	Ssebugere Patrick	Senior Lecturer	9 Publications.
	Tugume Patience	Lecturer	8 Publications.
	Mulindwa Julius	Senior Lecturer	7 Publications.
CEDAT	Manga Musa	Lecturer	21 Publications.
	Yiga Vianney Andrew	Lecturer	18 Publications.
	Semiyaga Swaib	Lecturer	13 Publications.
CHS	Musoke David	Senior Lecturer	41 Publications.
	Kalyesubula Robert	Senior Lecturer	37 Publications.
	Katamba Achilles	Senior Lecturer	30 Publications.
CHUSS	Mwiine Amon Ashaba	Lecturer	8 Publications.
	Kizito Simon	Lecturer	7 Publications.

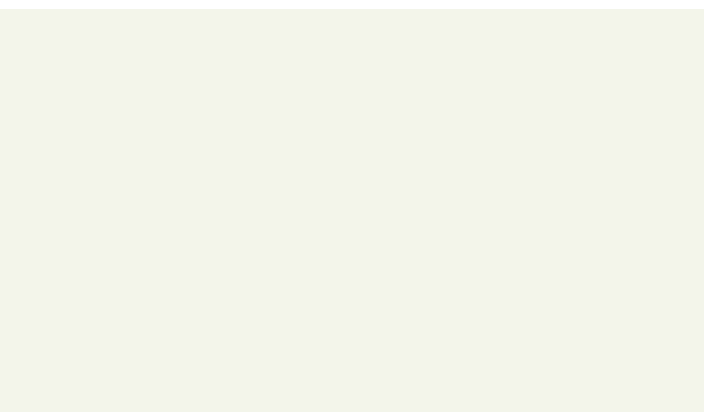


SENIOR RESEARCHERS' AWARDS

In the last two years (2), the candidate should: (i) either be at the rank of Senior Lecturer, Associate Professor, or Professor, (ii) have at least nine (9) peer-reviewed publications

Table 3. Senior Researchers' Awards for academic staff by College

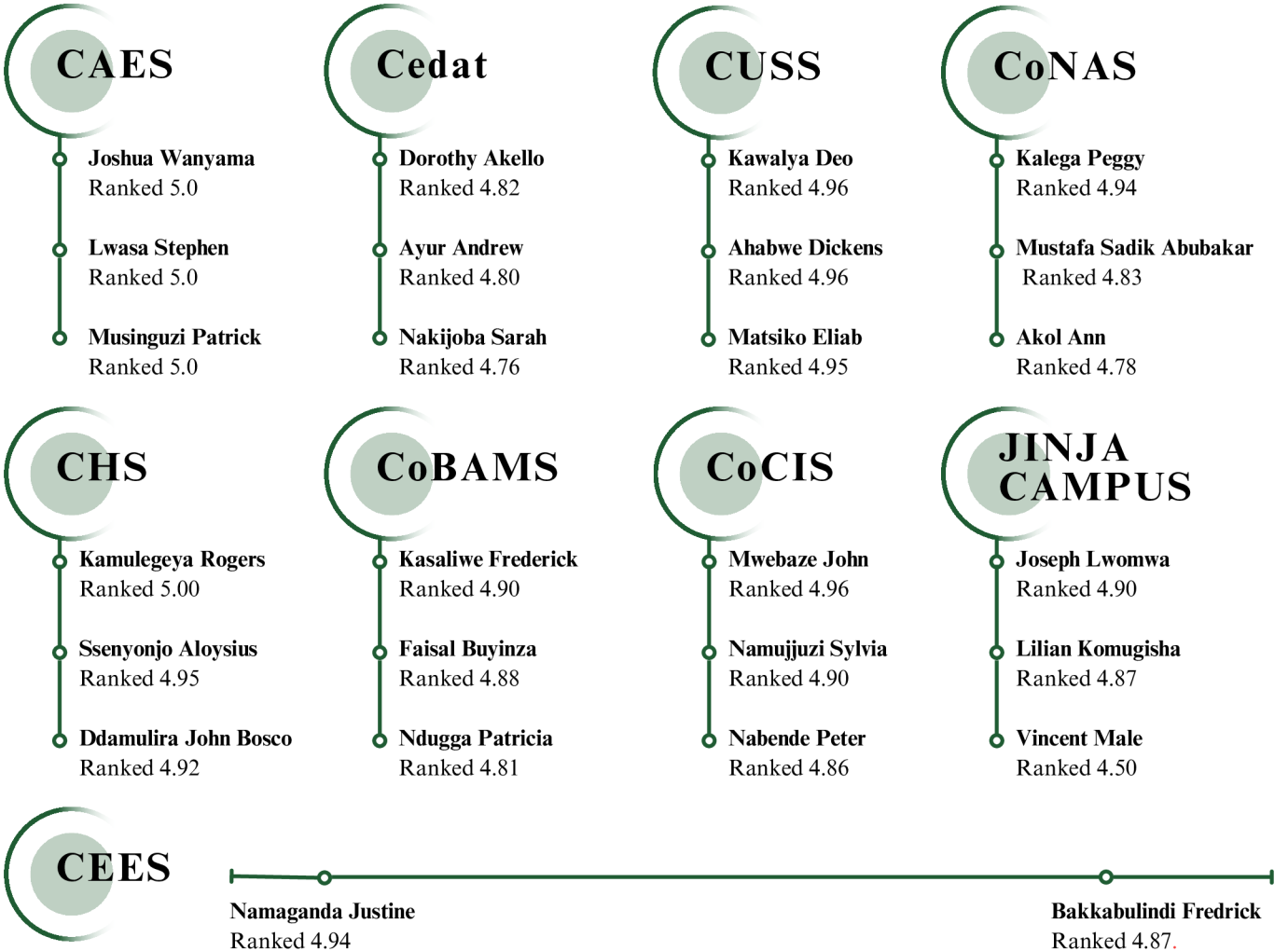
<p>CAES</p> <ul style="list-style-type: none"> ● Edema Richard Senior Lecturer 18 Publications. ● Bamutaze Yazidhi Professor 16 Publications. ● Egeru Anthony Associate Professor 15 Publications. ● Kabenge Isa Associate Professor 15 Publications. 	<p>CEDAT</p> <ul style="list-style-type: none"> ● Kirabira John Baptist Professor 25 Publications. ● Olupot Wilberforce Peter Associate Professor 24 Publications. ● Lubwama Michael Senior Lecturer 21 Publications. 	<p>CHS</p> <ul style="list-style-type: none"> ● Kamya Robert Moses Professor 84 Publications. ● Rhoda Wanyenze Professor 69 Publications. ● Waiswa Peter Professor 55 Publications. ● Nakasujja Noeline Associate Professor 44 Publications. ● Musoke David Senior Lecturer 41 Publications. 	<p>CoVAB</p> <ul style="list-style-type: none"> ● Mugisha Lawrence Associate Professor 19 Publications. ● Matovu Enock Associate Professor 19 Publications. ● Kankya Clovice Associate Professor 17 Publications. ● Mwiine Norbert Frank Professor 15 Publications. ● Nyakarahuka Luke Senior Lecturer 15 Publications.
	<p>CoCIS</p> <ul style="list-style-type: none"> ● Nakatumba Nabende Joyce Senior Lecturer 16 Publications. ● Engineer Bainomugisha Associate Professor 14 Publications. ● Nabukenya Josephine Associate Professor 9 Publications. 		<p>CoBAMS</p> <ul style="list-style-type: none"> ● Buyinza Faisal Associate Professor 13 Publications. ● Wandera Ojiambo Stephen Senior Lecturer 9 Publications.
<p>CoNAS</p>	<p>Masembe Charles Associate Professor 18 Publications.</p>	<p>Senku Jamilu Edirisa Senior Lecturer 18 Publications.</p>	<p>Kasozi Juma Associate Professor 18 Publications.</p>

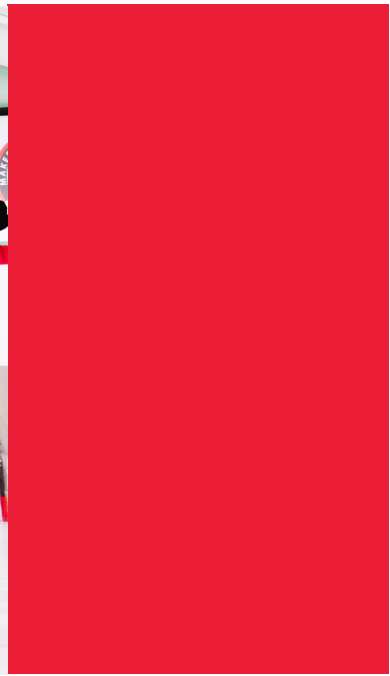


TEACHER OF THE YEAR AWARDS

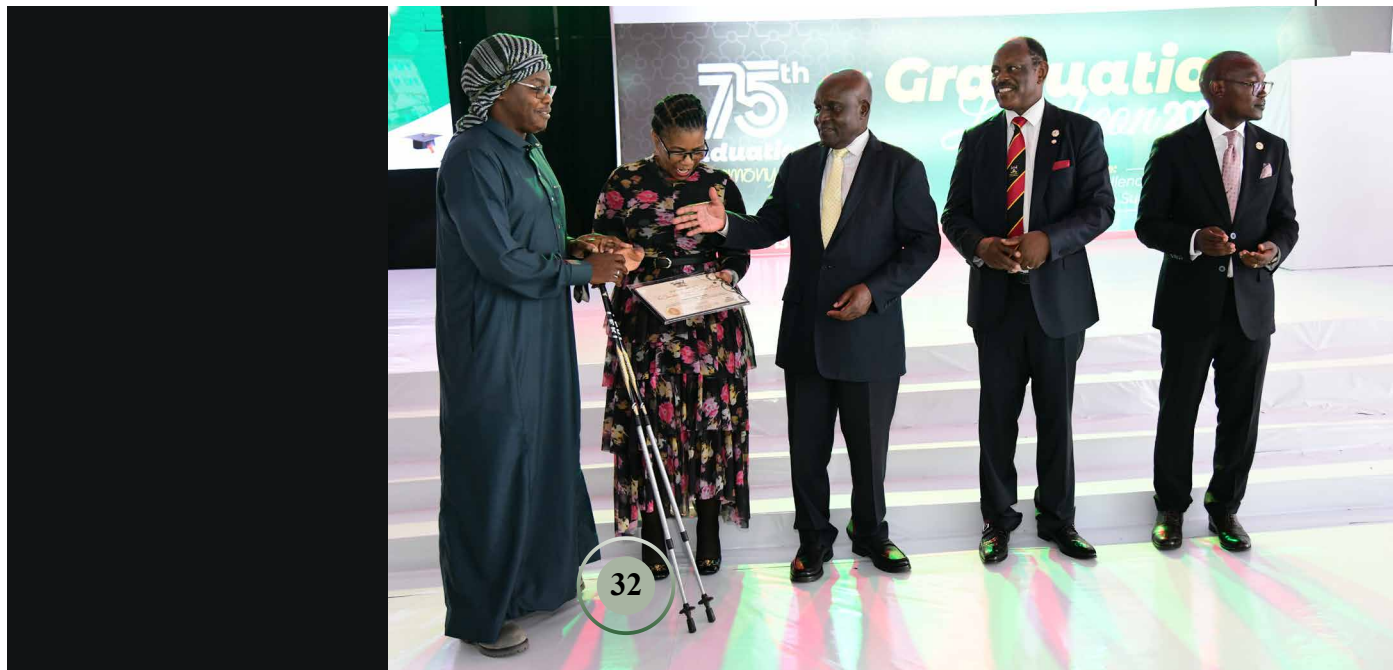
This award is for the recognition of outstanding teachers in order to incentivize all faculty members to enhance their pedagogical skills. In the last two years (2), the candidate should: (i) be at any academic rank in the university, (ii) have been the most highly evaluated teacher/faculty by the students after assessments conducted by the Directorate of Quality Assurance (DQA). The average scores were evaluated based on 16 parameters.

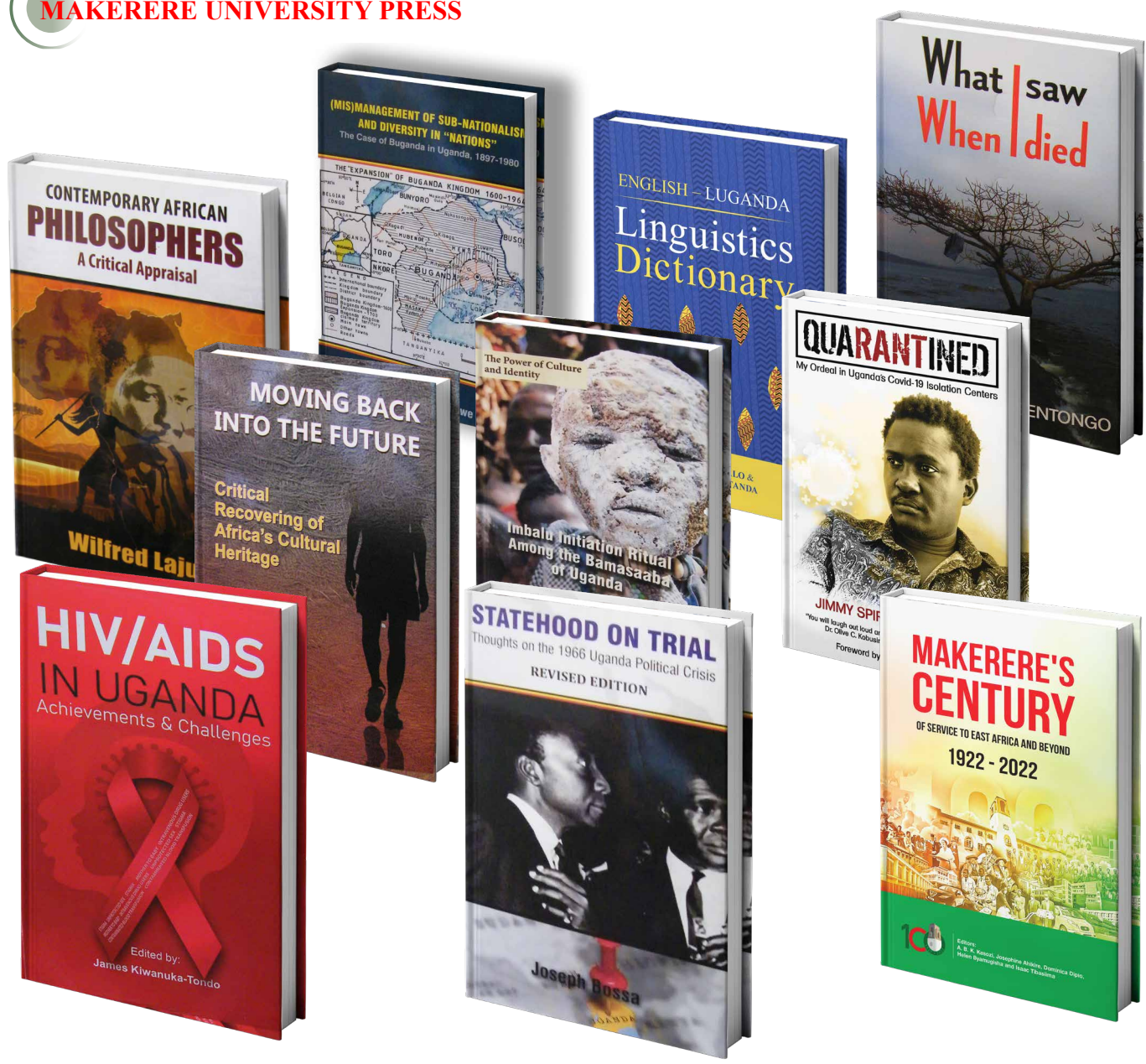
Table 4. Top Ranked Three Teachers/Faculty Following Students' Evaluations by College





The Chancellor Hon. Crispus Kiyonga handing over a certificate to Dr. Hasifa Namatovu (A researcher from COCIS) at the convocation function, Makerere University





BACKGROUND

The Makerere University Council approved the establishment of the Makerere University Press (MakPress) in December 1995. It was subsequently launched by the President of Uganda,

H.E. Yoweri K. Museveni, on 24th January 1997. The MakPress receives funding from the Government of Uganda through the Scholarship Vote.

The MakPress is administered under the Directorate of Research, Innovation and Partnerships (DRIP). Its core mandate is the production and dissemination of knowledge and research outputs, mostly for academic purposes. The MakPress publications are in all disciplines of the university.



*Dr. William Tayeebwa,
Managing Editor (ME), MakPress*

The MakPress was set up to:

1. Publish scholarly monographs, academic texts, reference works, research reports, and scholarly journals;
2. Encourage members of staff and students of the University to publish worthy academic works in books and journals of international standards;
3. Encourage teachers and other writers from various institutions of learning to write and publish.
4. Obtain copyrights from authors and publishers to reproduce essential reading materials, such as textbooks, among others.
5. Exploit the potential in the publishing market, which is currently under-utilised, to generate income for the University; and
6. Publish textbooks and other materials for primary, secondary, and tertiary institutions.

Overall Activities of the MakPress

The MakPress undertook a number of activities throughout the reporting period, 2024-2025. It is these activities that underlie the achievements of and challenges faced by the Mak Press in the attainment of its goals. The MakPress team has carried out these activities during the reporting period:

- I. Developing and maintaining internal policies and practices;
- II. Engaging in promotions, sales, and marketing of MakPress products;
- III. Maintaining communication with internal and external stakeholders;
- IV. Receiving and processing manuscripts;
- V. Developing proposals for partnerships and funding support;
- VI. Identifying peer reviewers, copyeditors, illustrators, cover designers, typesetters, printers, and marketers.

KEY ACHIEVEMENTS

During the reporting period, MakPress has registered the following achievements as per the above strategic goals:

a) Publishing of manuscripts

Seven manuscripts have gone through all stages of the publishing chain and by close of the year are at the pre-press stage to be published in May 2025. These seven books are:

- i. *Quantum mechanics: An Introduction with Sample Questions and Model Solutions* by Daniel Mukiibi and Yusto Kaahwa
- ii. *Medical and Veterinary*

- iii. *Ectoparasitology in the Tropics* by Rubaire-Akiiki Christopher
- iv. *Religious Movements Shaping Society: The Pentecostal Movement in Uganda* by Paddy Musaana
- v. *The Cultures of the Banyakitara*, edited by Oswald Ndoleriire and Edith Natukunda-Togboa
- vi. *English-Luganda Linguistic Dictionary* by Saudah Namayalo

- vii. *Classical Mechanics: Classical Mechanics: Introductory Treatment with Sample Questions and Model Solutions* by Daniel Mukiibi and Yusto Kaahwa
- viii. *Quarantined: My Ordeal in Uganda's Covid-19 Isolation Centers* by Jimmy Spire Ssentongo

b) Increased contract publishing projects

Table 5: Contract/private publishing projects by MakPress in 2024/2025

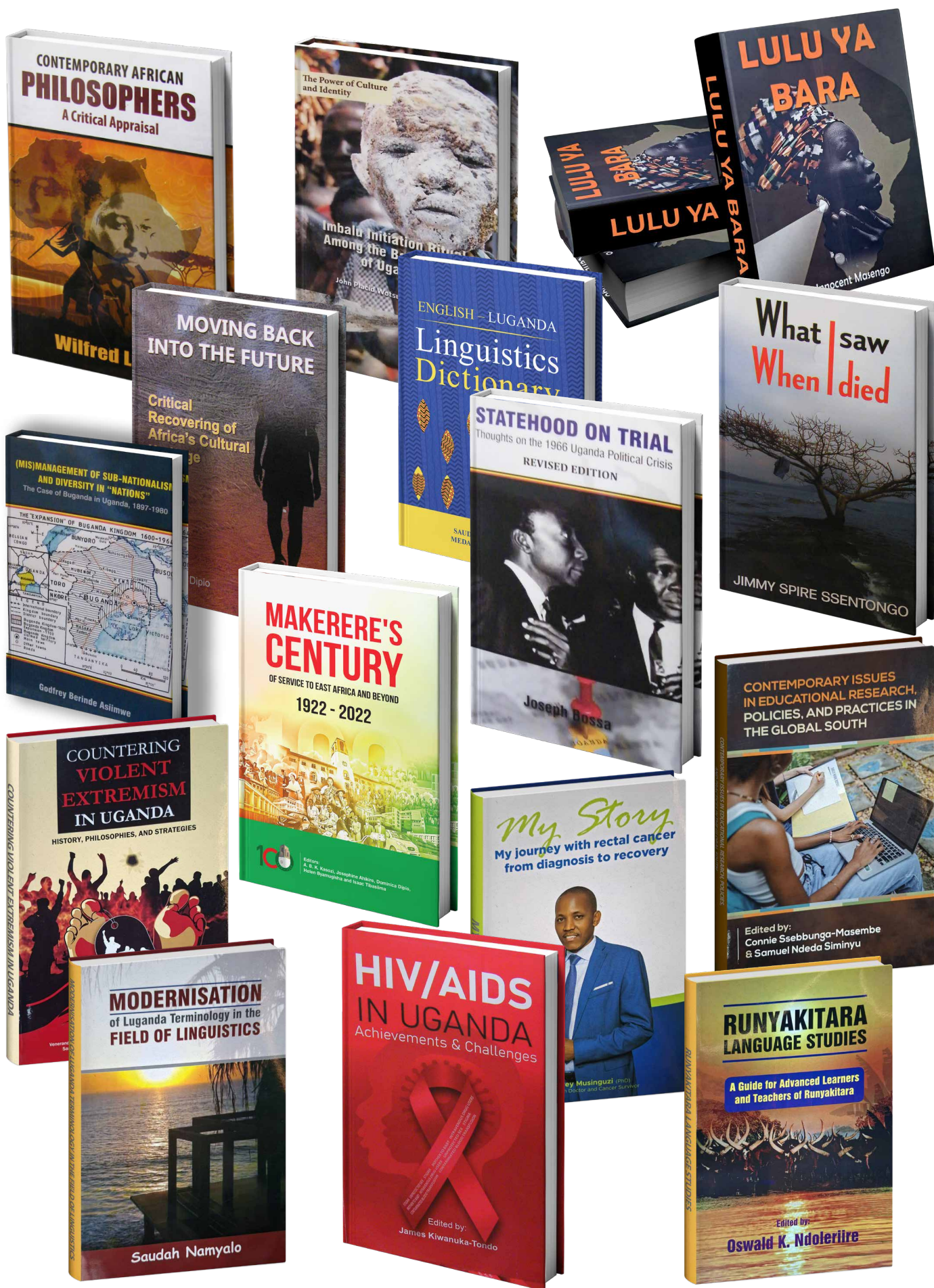
Book Title	Authors/Editors	College/ Unit/ Sponsors/ Co-publishers
1. My Journey with Rectal Cancer: From Diagnosis to Recovery	Geofrey Musinguzi	College of Health Sciences (CHS) / School of Public Health (SPH)
2. Reading Archives, Memory and Method from Makerere University: Debates and Insights	Josephine Ahikire; Levis Mugumya; Pamela Khanakwa; Amon Mwiine; Edgar Nabutanyi	College of Humanities and Social Sciences (CHUSS)
3. Diversity Management in Higher Education Institutions: Prospects and Future	Elizabeth Kyazike et al.	Kyambogo University
4. From Records to Publication: A Guide to Academic Authorship	Elisam Magara (ed.)	College of Computing and Information Sciences (COCIS)

Book Title	Authors/Editors	College/ Unit/ Sponsors/ Co-publishers
5. Ndoto ya Muziki; Familia ya Baraka; Maisha ya Mtoto Yatima; Hurumia Kijiji Chetu; Uganda Lulu Ya Africa; Mvumilivu hula Mbivu; Viongozi Wetu	Caroline Asimwe (ed.)	East African Swahili Commission/ CHUSS
6. Reinventing Uganda. Political Imagination and Social Change After the Fall of Idi Amin	Justin Willis and Florence Brisset-Foucalt (eds.)	Co-publication of the MakPress with AFRICAE/ Nairobi
7. Higher Powers: Alcohol and after in Uganda's Capital City	Scherz, C., Mpanga, G., and Namirembe, S. (2024)	University of Notre Dame The University of California Press
8. Higher Powers: Alcohol and after in Uganda's Capital City	Scherz, C., Mpanga, G., and Namirembe, S. (2024)	University of Notre Dame The University of California Press
9. Having People, Having Heart: Charitay, Sustainable Development, and Problems of Dependence in Central Uganda	Scherz, C. (2014)	University of Notre Dame The University of Chicago Press
10. Lango Cultural Institution	Okaka Dokotum et al.	Lira University
11. Contemporary Issues in Adult Learning and Education: Perspectives from Uganda	George Ladaah Openjuru and Samuel Siminyu (eds)	College of Education and External Studies (CEES) in partnership with DVV International/German Adult Education Association
12. Demystifying the Jewel Called the ILO	Mthunzi Mdwaba	Co-publication of the MakPress with University of Johannesburg Press



The Managing Editor, Makerere University Press (MUP), Dr. Samuel Siminyu (Right) with some of the authors and CHUSS Staff at the Book Launch on 28th June 2022, Yusuf Lule Central Teaching Facility Auditorium, Makerere University.

BOOKS ON SALE DURING FISCAL YEAR 2024/2025





GRADUATE STUDENT ENROLMENT AT MAKERERE UNIVERSITY

Makerere University aims to increase graduate student enrollment to 30% of the total student population.

A wide range of graduate programmes, including PhDs, Master degrees, and postgraduate diplomas are offered.

Makerere University's graduate programmes are known for their research-led approach and focus on addressing national and global challenges.



Prof. Mukadasi Buyinza Ag. DVC (A/A) and Prof. Julius Kikooma, (the Director, DGT) at the orientation of PhD students' cohort two 2024/2025 held at the School of Food Science Auditorium, Makerere University on Friday 2nd May, 2025.

Table 6. General statistics of the Graduate enrolment at Makerere University

STUDENT ENROLLMENTS		2024		2023		2022		2021		2021	
Postgraduate	Male	3,638	61.5%	2,925	63.2%	2,646	64.1%	2,415	64.1%	2,899	63.1%
	Female	2,276	38.5%	1,702	36.8%	1,485	35.9%	1,351	35.9%	1,693	36.9%
Total		5,914	100.0%	4,627	100.0%	4,131	100.0%	3,766	100.0%	4,592	100.0%

Table 7. Number of Graduate Students Enrolments per College, 2024

YEAR	CATEGORY	CAES	CEDAT	CEES	CHS	CHUSS	CoBAMS	CoCIS	CoNAS	CoVAB	SoL
2023/24	PhD	106	23	70	70	113	17	38	45	19	4
	Masters	472	548	245	1,391	781	689	288	201	205	130
	PGD	18	43	167	-	57	6	5	-	8	-
	Total	596	614	482	1,461	951	712	331	246	258	134
2022/23	PhD	62	14	52	41	54	18	22	19	6	6
	Masters	338	307	146	729	468	323	168	83	108	84
	PGD	6	29	110	-	51	9	10	-	5	-
	Total	406	350	308	770	573	350	200	102	119	90
2021/22	PhD	71	19	45	47	51	22	15	14	6	1
	Masters	245	249	112	674	403	343	138	152	72	57
	PGD	7	38	48	-	43	10	1	-	10	-
	Total	323	306	205	721	497	375	154	166	88	58



RESEARCH CAPACITY BUILDING

A. SMALL COMPETITIVE PHD COMPLETION GRANT, 2024/2025

In the fiscal year 2024/2025, the DRGT supported staff members in completing their PhD studies through research budget support. Seven (7) PhD students have been supported. They are the following:

Table 8. List of PhD small research grant beneficiaries

S/N	Name	Sex	College	Research Title
1	Twongirwe Calorine	F	CoBAMS	Do foreign investors predict better? Stock return predictability, investment horizon, and investor domicile, evidence from the US-listed firms
2	Masimengo Tadeo	M	CoBAMS	Google search volume and bank financial stability
3	Tuhaise Betty Tumuhirwe	F	CoBAMS	Bond Market Development, Government Effectiveness and Infrastructure Financing: An analysis of Countries with the portfolio investment bonds
4	Okol Moses	M	CONAS	Transport-Related Air Pollution (Trap) Exposure Among Commercial (Boda-Boda) Motorcyclists in Kampala City
5	Gulaita Norah	F	CoVAB	Plants used to smoke vessels during traditional sour milk (Makamo) processing in Kiruhura district and their effects on its quality and safety
6	Nanteza Moureen	F	CHUSS	Languages in Contact and Conflict: A Diachronic Appraisal of Luganda in Contact with other Indigenous languages of Uganda.
7	MutegandaAmonKabahima	M	COCIS	Enhancing Pandemic Preparedness in Uganda: A System Dynamics Approach for Policy Gap Analysis, Model Construction, and Decision Validation.

B. CARNEGIE CORPORATION SUPPORT TO MAKERERE UNIVERSITY

Makerere University received a grant worth USD 1,250,000 from the Carnegie Corporation of New York to implement a Consolidating Early Career Academic Programme at Makerere and Partner Public Universities (CECAP). The fellowship is implemented in partnership with Busitema University, Gulu University, Kyambogo University and Mbarara University of Science and Technology.

The project is hosted at the Directorate of Research, Innovations and Partnerships (DRIP) and is scheduled to run for 30 months, from 2025 to 2027.

The project's overall goal is to consolidate the research capacity of early career academics to enhance their research productivity

and ability to contribute effectively to knowledge generation. Specifically, the project is set to: Enhance the capacity of the fellows to conduct quality, relevant research with appropriate mentorship at Makerere University and the PPU; Strengthen the enabling environment to encourage the retention of fellows at Makerere University and the PPU;

1. Fortify the individual and institutional capacity for communication of research outputs to academic and non-academic audiences;
2. Contribute to bolstering the capacity and opportunities for female academics at Makerere University and the PPU.



In the middle, Prof. Buyinza Mukadasi, the DVC (A/A), together with the newly awarded postdoctoral fellows, on 19th March, 2025, at Makerere Senate Building

The project is designed along a research team approach of three individuals. The research teams comprise the Fellow as the Principal Investigator (PI), a mentor, who is a senior academic, and a master's degree student.

The mentors supervise and provide discipline-specific expertise to the Fellow – mentoring the Fellow into a grounded researcher, and the Fellow is expected to supervise the master's student.

The grant allows the Fellow to undertake research, publish at least two journal articles, organise research dissemination engagements, participate in capacity-

building workshops, and attend an international conference. The project also awarded a capacity development grant to each department hosting a Fellow to enhance its research environment/infrastructure.

As the host of the project, the DRIP will also organise short courses to improve the research culture at Makerere University and partner public universities.

These project activities are anticipated to expand the community of research leaders and doctoral supervisors at Makerere University and public partner universities.

Table 9. List of Postdoctoral Fellows supported by CARNEGIE, 2025-2027

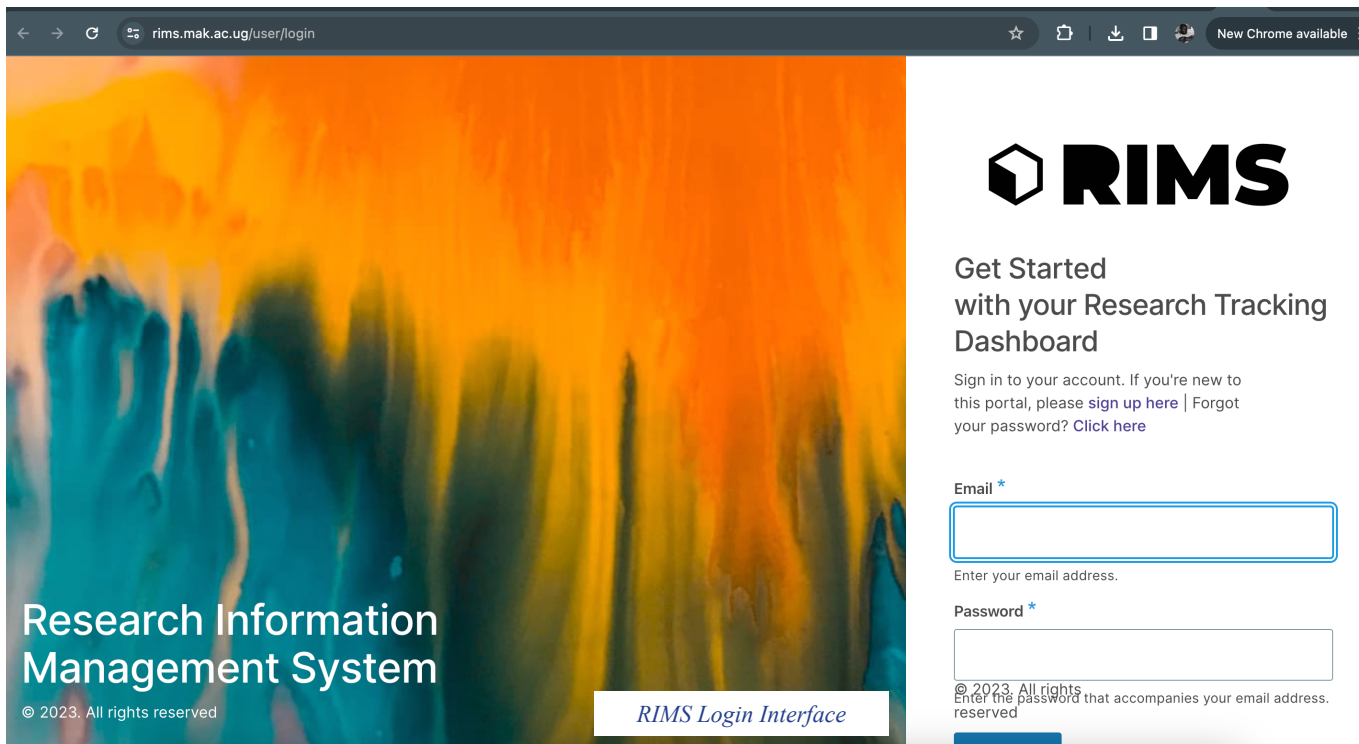
SN	Name	College	Research Topic
1	Dr. Dan Ngabirano	School of Law	Beyond Legal and other Formal Approaches to the Grand Corruption Problem in Uganda: The Role of Indigenous African Customary Laws, Norms and Institutions
2	Dr. Karlmax Rutaro	CONAS	The role of Nutrition, Climate Change and Exposure to Air Pollution on Multimorbidity, Functional Disability and Quality of Life among Boda Boda operators in Uganda.
3	Dr. Florence Nantaba	CONAS	Development of an Efficient, Selective, And Sustainable Insulin Loaded Biosilica Nanocapsules for Oral Administration of Insulin Drug for Diabetic Patients.

SN	Name	College	Research Topic
4	Dr. Samuel Ojelel	CONAS	Unlocking the importance of neglected and underutilized edible plants (NUFPs) in alleviating malnutrition in Karamoja, Uganda
5	Dr. Yiga Andrew Vianney	CEDAT	Rice husks lignin as flame retardant coatings for banana stem waste textile materials
6	Dr. Sendawula Kasimu	CoBAMS	The contribution of industrial symbiosis in fostering scalability of smallholder farmers in Uganda
7	Dr. Peter Babyenda	CoBAMS	Energy Demand and Efficiency among Households and Small and Medium Scale Industries in Uganda
8	Dr. Sekito Zaid	CHUSS	Unravelling the Youth Question in Uganda: A Historical Analysis, 1962 – 2021
9	Dr. Rachael Mugabi Ddungu	CHUSS	Bridging Gaps: Enhancing Disability Services for a Gendered Inclusive Academic Success
10	Dr. Marjorie Kyomuhendo	CHUSS	Co-creation of a Social Behaviour Change Communication Framework to Promote Uptake and Reduce Hesitancy of New Malaria Vaccine in Uganda
11	Dr. Olivia Nankinga	CoBAMS	The Home environment and Early Childhood Developmental Outcomes in Uganda
12	Dr. Peninah Agaba	CoBAMS	Pregnancy in sickle cell disease: Experiences of women with SCD in the use of maternal healthcare services in Uganda
13	Dr. Alina Marion Olga	CHUSS	Tracing the effect of Uganda’s Declining Civic Space on Media Coverage of Corruption: An analysis of The New Vision newspaper during the Parliament Exhibition
14	Dr. Richard Kimera	Dept of Information Technology, MUST	Maternal Understanding through Language-Aware Multimodal AI in Uganda (MULAMU)
15	Dr. Sharon Aol	Dept of Physics, MUST	Modeling ionospheric electron density derived from Swarm satellites over Africa
16	Dr. Julius Tumusiime	Dept of Biology, MUST	Alternative sustainable medicinal plant remedies for the treatment of schistosomiasis in endemic regions of Uganda
17	Dr. Godfrey Mironde Kibalya	Dept of Computer Engineering and Informatics, Busitema	Zero-Touch Pipeline for Critical Infrastructure Monitoring and Predictive Analytics Using Generative AI and Social Media

SN	Name	College	Research Topic
18	Dr. Rashidah Akoba	Dept of Physics, Busitema	Hydrothermal-Assisted Synthesis of Activated Carbon from Agricultural Waste Doped with Transitional Metal Dichalcogenides for Lithium-Ion Capacitors (LIC)
19	Dr. Akullo Jolly Oder	Dept of Animal Science, Busitema	Mass rearing of crickets (<i>Acheta domesticus</i>) for household income, food and nutrition security to communities in Teso sub region, Eastern Uganda
20	Dr. Lawrence Okidi	Dept of Food Science and Post Harvest Tech, Gulu	Enhancement of Dairy Cattle Performance and Milk Processing Quality Characteristics through Feed Supplementation using Optimized Low-cost Urea-Molasses Blocks (EPSOM Project)
21	Dr. Richard Manasseh	Dept of Agronomy, Gulu	Adaptation of wheat in mid-altitude agroecologies of Uganda
22	Dr. Beatrice Arwenyo	Dept of Chemistry, Faculty of Science, Gulu	Nutrient enriched biochar Fertilizer innovation from agricultural feedstock for climate smart farming
23	Dr. Ahishakiye Emmanuel	Dept of NetworKs, Kyambogo	Artificial Intelligence Tool for Monitoring and Prediction of Tumor Response to Chemotherapy in Breast Cancer Treatment
24	Dr. Judith Nagasha	Dept of Development Studies, Kyambogo	Climate-induced migration and gender-based livelihood adaptation mechanism among communities surrounding Lake Mburo National Park, Uganda
25	Dr. Nina Olivia Rugambwa	Dept of Library and Information Science, Kyambogo	Leveraging Indigenous Knowledge Strategies to reduce risky sexual behavior among out- of- school rural Teenage Girls: A Case of Bugiri District, Uganda



RESEARCH INFORMATION MANAGEMENT SYSTEM



Makerere University is transforming into a research-led university, responding to national, regional and global development challenges, as well as contributing to global knowledge generation (Mak strategic plan, 2020-2030). However, the University has been facing a challenge of preserving and managing voluminous research data, especially in this era of big data, artificial intelligence, internet of things and the fourth industrial revolution in general.

In 2023, the Directorate of Research and Graduate Training took the initiative to develop the Research Information Management System (RIMS) to develop the database looking at the following;

- (i) Develop a digital Research Information Management Systems for Makerere University
- (ii) Establish and update a database for monitoring graduate research at Makerere University
- (iii) Monitoring the research management

The development of a Research Information Management System (RIMS) at Makerere University, focusing on Postdoctoral Research, Conferences & Seminars, Research Innovations, and Graduate Supervisions, is expected to bridge the gap in **centralized visibility, coordination, and tracking of research activities and outputs** across the university. Currently, fragmented and manual processes limit the institution's ability to monitor research progress, showcase innovations, support collaboration, and guide strategic planning.

By integrating these four key components into a unified digital platform, the system will enhance institutional research capacity, improve reporting and decision-making, foster knowledge sharing, and strengthen Makerere University's national and global research profile.

The system is integrated with E-HRMS, ACMIS, GAMSU, and the University Library.

The DGT/DICTS team led by Prof. Julius Kikooma conducted the first consultative meeting on use of RIMS with CEES staff on the 15th April, 2025





RESEARCH CENTRES AND INSTITUTES AS OF JANUARY, 2025



COLLEGE OF AGRICULTURE AND ENVIRONMENTAL SCIENCES **CAES**

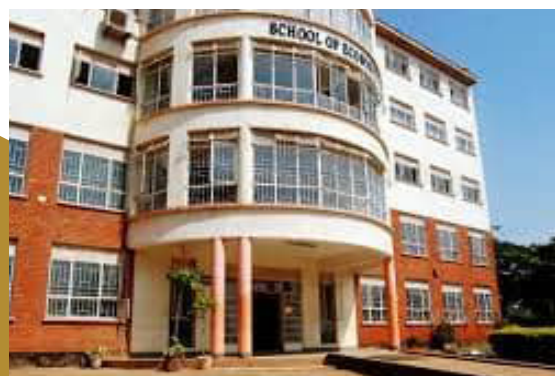
- Makerere University Regional Center for Crop Improvement (MaRCCI)
- Makerere University Centre for Excellence in Waste Management
- Makerere University Agricultural Research Institute Kabanyolo (MUARIK)
- Food Technology and Business Incubation Centre (MUBFS)
- Continuing Agricultural Education Centre (CAEC)

- Makerere University Centre for Climate Change Research and Innovations (MUCCRI)
- Makerere University Centre for Soyabean improvement and development (MakCSID)
- The Makerere University Biological Field Station (MUBFS)
- The National Biodiversity Data Bank (NBDB) - Uganda
- Agricultural Policy Research Centre

- A consortium for enhancing university responsiveness to agribusiness development (CURAD)
- Uganda Forestry Resources and Institutions Centre (UFRIC), Makerere University
- Makerere University Tissue Culture Laboratory (MAKTCLAB)
- Centre for mountain resources and Disaster Management
- Centre for Environment and Development

COLLEGE OF BUSINESS AND MANAGEMENT SCIENCES

CoBAMS



- Economic Policy Research Centre (EPRC) Initiative
- Public Investment Management (PIM) Centre of Excellence

- Centre for Population and Applied statistics
- Environment for Development Initiative

- Makerere Entrepreneurship and Outreach Centre



COLLEGE OF EDUCATION AND EXTRANAL STUDIES

CEES

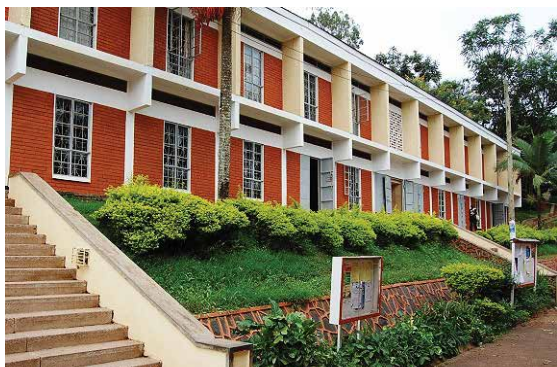
- Centre for life long learning (CLL)
- Centre for teaching & learning (CTLS)
- Makerere Institute of Education Research
- Institute of Open Distance and E-Learning

COLLEGE OF HEALTH SCIENCES

CHS



- Makerere University Walter Reed Project
- Infectious Diseases Institute (IDI), Makerere University
- Makerere University Lung Institute (MLI)
- Makerere University Biomedical Research Centre (MakBRC)
- Makerere University Centre for Health and Population Research (MUCHAP)
- Makerere Joint Aids Program (MJAP)
- Child Health Development Centre (CHDC)



COLLEGE OF HUMANITIES AND SOCIAL SCIENCES

CHUSS

- Makerere Institute of Social Research
- Makerere University Rotary Peace Centre
- Centre for Research, Teaching and Learning
- Centre for languages and communication services
- The Confucius institute is the only established institute in Uganda to handle the teaching and learning of Chinese



COLLEGE OF COMPUTING AND INFORMATION SCIENCES

CoCIS

- Center for Innovations and Professional Skills Development (CiPSD)
- Makerere Innovation and Incubation Centre (MIIC)
- The Center of Excellency in Software Engineering and Software Systems
- Huawei ICT Academy
- WIMEA - ICT
- Internet of Things
- Testing Centre
- The Makerere University Centre for Artificial Intelligence and Data Science (Mak-CAID)
- Health Informatics Research Group
- EvBAB Centre
- The Smart classroom
- Cisco Academy Support Centre
- Wireless Networks and System Security
- Informatics and visualization research group
- Air quality monitoring (AIRQO)
- Geospatial and Computational

COLLEGE OF ENGINEERING, DESIGN, ART AND TECHNOLOGY

CEDAT



- Centre for Research in Energy and Energy Conservation
- Centre for Geographical Information Systems (GIS)
- Institute of Heritage Conservation and Restoration
- Centre for Research in Transportation Technologies
- The East African Centre of Excellence in Renewable Energy and Energy Efficiency (EACREEE)
- Centre for Technology Development and Transfer
- The Africa Centre of Excellence for Materials, Product Development and Nano Technology (MAPRONANO)



SCHOOL OF LAW

SoL

● Human Rights Peace Centre (HURIPEC)

● The Public Interest Law Clinic (PILAC)

COLLEGE OF VETERINARY
MEDICINE, ANIMAL RESOURCES
AND BIOSECURITY

CoVAB



● Africa Institute for strategic
Resource services and
development (AFRISA)

● Joint National Animal
Diagnostics Centre(J-NADIC)

● Buyana stock Farm

● Ruth Keesling wildlife health
Extension, research and
Education

● Walter Reed Project
Laboratories for Emerging
Infectious Diseases

● Centre for Biosecurity,
zoonoses and Food Safety.

● Nakyesasa Incubation Centre
for Industrial Livestock
Research and business
Innovations



*Table 11:
Statistical summary of staff
Publications by the College*

SN	Name	No of Publications
1	CEDAT	73
2	CHUSS	120
3	CAES	174
4	CHS	525
5	CONAS	101
6	COVAB	70
7	COCIS	69
8	CEES	70
9	COBAMS	104
10	School of Law	20
	Total	1,326



MAKERERE UNIVERSITY WRITING CENTER

INTRODUCTION AND BACKGROUND

The Makerere University Writing Center (MakWC) is one of the entities in the Directorate of Research, Innovation and Partnerships. It is a pivotal center aimed at enhancing Makerere University's strategic goal of becoming a research-led institution by 2030.

The center provides faculty, staff and students with assistance on their papers, projects, reports, multi-modal documents and other writerly needs across disciplines. Writing centers are primarily spaces for collaboration in which writers and consultants work together to help writers achieve their goals. To achieve its objectives, the MakWC has developed a comprehensive training and mentorship program. The program engages content specialists and mentors with extensive experience in writing, collaborative research and publications.

Training employs a hybrid approach; integrating traditional teaching/ training methods with online platforms, case studies, and practical hands-on exercises. The Center also offers short courses spanning for 1 to 2 weeks for participants. Mentorship involves one-to-one connections between mentors and mentees, facilitated by the MakWC team.

The Writing Center (MakWC) therefore represents a transformative initiative poised to enhance academic

and scholarly writing and publication capacities at the University in particular and contribute to national and regional development agendas. With robust support from internal and external stakeholders, MakWC is positioned for long-term success in fostering a culture of excellence in scholarly, academic and scientific writing.

Focus of the Makerere University Writing Center (MakWC)

The MakWC is a trans-disciplinary entity intentionally established with a strategic commitment to covering broad areas of writing capacity development services that are of priority to the University and/ or its partners at national, regional, or global development levels. It will have the following broad thematic areas.

Objectives of the MakWC

- To offer targeted capacity-building and development programs in the form of professional/ technical or specialized training, including short courses and executive trainings that may not fit in the regular academic programmes of the existing academic departments.



*MakWC team meeting
Prof. Barnabas Nawangwe,
Vice Chancellor - Makerere University.*

- To lend prestige, standing, and exposure of researchers from all colleges to work together and write on a wide range of emerging thematic social issues that can inform governmental policy and interventions for socio-economic transformation
- To provide targeted mentoring services to faculty, staff and students across the various academic disciplines of Makerere University and its environs.

The broad thematic area of the Writing Center is training and mentorship in writing for research, innovation and publication to support early career researchers (ECRs), mid-career researchers, faculty, students and administrative staff among others.

MakWC Training and Mentorship programs

The training and mentorship vary ranging from 1 to 2 weeks to a month for short courses to 10 months or more for other training and mentorship programs.

The training facilitators and mentors are successful writing experts for diverse purposes, content experts, professors, senior lecturers and writing consultants. To ensure effectiveness of the program, mentors are selected based on their success story at leading collaborative research teams, publication record, and willingness to mentor. The mentors are senior researchers (or peer champions) and subject matter experts with more than ten years' experience at writing for different purposes and audiences.

The MakWC short training courses of 1 to 2 weeks to a month will benefit staff and students including staff in sister universities and local government. Relevant courses for the different categories proposed to be offered and based on need are:

- 1. Thesis and Dissertation Writing:** Planning and organizing your thesis/dissertation; Effective literature review strategies; Methodology and results writing; Editing and proofreading techniques
- 2. Academic Writing and Research Papers:** Fundamentals of academic writing; Structuring research papers; Writing literature reviews; Citing sources and avoiding plagiarism

- 3. Technical and Scientific Writing:** Writing for scientific journals; Technical report writing; Communicating research findings to non-specialist audiences
- 4. Publishing in Academic Journals:** Identifying suitable journals; Manuscript submission process; Responding to reviewers' comments; Ethical considerations in publishing
- 5. Writing for Social Sciences and Humanities:** Writing research papers in social sciences; Qualitative and quantitative research writing; Publishing in social sciences and humanities journals
- 6. Interdisciplinary Research Writing:** Writing for interdisciplinary audiences; Collaborating across disciplines; Integrating diverse methodologies; Publishing interdisciplinary research
- 7. Editing and Proofreading:** Techniques for effective editing; Proofreading strategies; Grammar and style in academic writing; Peer review and feedback
- 8. Effective Communication and Public Speaking:** Principles of effective communication; Public speaking and presentation skills; Communicating with stakeholders and policymakers; Interview techniques; Meeting minutes and agendas
- 9. Policy Writing and Analysis:** Writing policy briefs and reports; Policy analysis and recommendation writing; Communicating policy to diverse audiences; Evaluating policy impact
- 10. Writing for Community Engagement and Outreach:** Communicating research to the public; Writing for community impact; Creating outreach materials; Evaluating community engagement efforts
- 11. Professional Writing for Administrators:** Writing reports and official documents; Effective email and letter writing; Policy brief writing; Meeting minutes and agendas

The mentorship approach is a one-to-one connection type between the mentor and mentee. Each mentor may have up to three mentees. The MakWC team will use administrative matching to pair the mentors to the mentees based on common interests, knowledge areas and fit. The mentors and mentees may share short profiles ahead of the enrollment. The mentor-mentee pairings and matching is based on compatibility.





BACKGROUND AND CONTEXT



H.E. Tiffany Kirew, Deputy British High Commissioner to Uganda, delivered the keynote address at the launch of the Makerere University Centre for AI and Data Science, HE Tiffany Kirew, reaffirmed the UK's commitment to strengthening Uganda's AI ecosystem through research partnerships, digital skills training, and scholarships. She underscored the importance of developing homegrown AI solutions to tackle local challenges.

The launch of the Makerere University Centre for AI and Data Science (Mak-CAD) marked a significant milestone in Africa’s technological advancement and digital transformation. Set against the backdrop of a rapidly evolving global AI landscape, the Centre underscores Uganda’s commitment to becoming a leading player in the AI revolution, rather than just a passive observer.

The Mak-CAD was founded to harness artificial intelligence in tackling key development challenges across Africa. With a focus on healthcare, agriculture, language technology, and climate action, the Centre strives to create context-specific AI solutions that address the continent’s unique needs.

Research Focus Areas

Mak-CAD’s research agenda is strategically aligned with key development priorities in Africa, with a particular focus on:

1. **Healthcare:** Developing AI-powered diagnostic tools and solutions to address critical health challenges, building on earlier work in malaria microscopy.

- 2. **Agriculture:** Creating AI applications to enhance agricultural productivity, pest and disease management, and food security.
- 3. **AI for language technology:** Building language models and tools for African languages to bridge digital divides and enhance local content accessibility.
- 4. **AI for environment and Climate Action:** Utilizing AI for environmental monitoring, climate modeling, and developing adaptive strategies to mitigate the impacts of climate change.

Operating Structure

The Centre operates through two primary research labs:

A. The Makerere Artificial Intelligence Lab in the Department of Computer Science, College of Computing and Information Sciences. This lab specializes in the application of artificial intelligence and data science—including methods from computer vision, natural language processing, and predictive analytics—to problems in the developing world.

B. The Marconi Machine Learning Lab in the Department of Electrical and Computer Engineering in the College of Engineering, Design, and Art. This Research and

Innovation Laboratory pioneers a data-driven future through research and solutions developed with technologies including Artificial Intelligence, IoT, Space Technology, Software Engineering, Cloud Computing, and Blockchain. This dual-lab structure facilitates interdisciplinary collaboration and ensures a comprehensive approach to AI research and development.

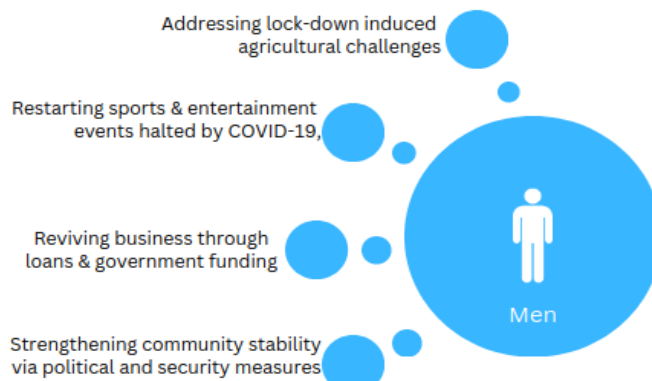
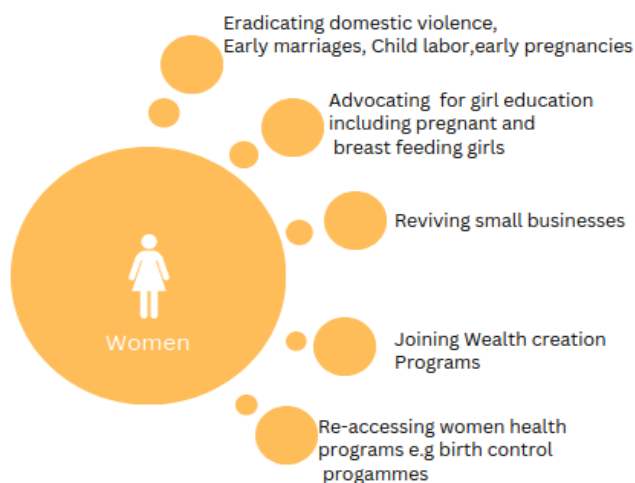
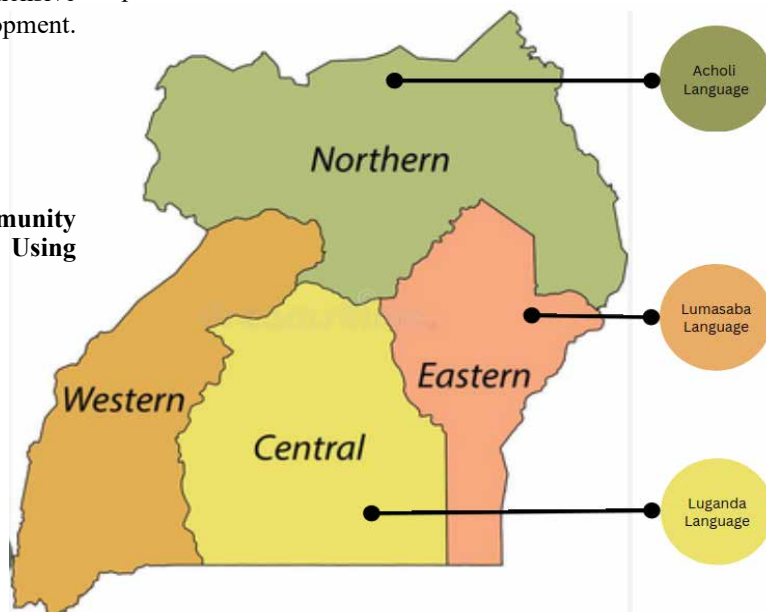
This project aims to analyze community perceptions during the COVID-19 pandemic by mining radio broadcasts using Automatic Speech Recognition (ASR) models. The primary focus is on understanding people's views on COVID-19 vaccines, misconceptions, lockdown measures, and activities post-lockdown.

PROJECTS

AI IN HEALTHCARE

Mining Radio Broadcasts for Community Perceptions on COVID-19 and Ebola Using Automated Speech Recognition Systems

A map of Uganda showing regions where radio data was collected, with varying colors representing different regions' vaccine perceptions



A chart visualizing gender differences in vaccine hesitancy or lockdown perception

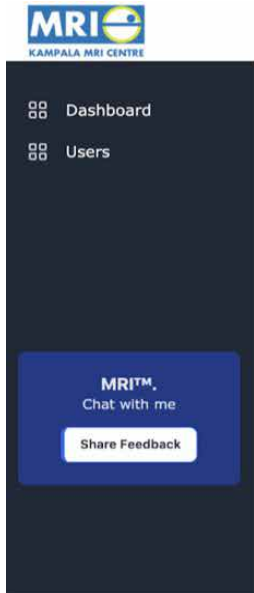
Automated Screening of Prostate Cancer from Multi-parametric MRI Sequences

Multiparametric Magnetic Resonance Imaging (MRI) is a crucial tool in the diagnosis, risk stratification, staging, and targeting of prostate cancer. However, its interpretation requires significant expertise, with variability between readers and challenges such as image distortion and motion artifacts. To address these issues, we propose a machine learning framework that automatically classifies prostate cancer from multi-parametric MRI sequences.

The model was trained on 188 sequences and tested on 74 sequences, achieving a classification accuracy of 78%,

with an F1-score of 0.87. The sensitivity was 0.88, and the selectivity was 0.5. Future work will focus on addressing class imbalances and incorporating additional MRI sequences like T2-weighted (T2W) images to detect more complex lesions, particularly in the transitional zone (TZ).

Additionally, an automated prostate MRI reporting system, based on structured reports from ECUREI, was developed to enable expert radiologists to generate accurate reports. These reports serve as a marking guide for students, improving assessment and training. This approach enhances student engagement, fosters social and emotional learning, and addresses gaps in healthcare education while ensuring COVID-19 safety compliance.



Report generated by the system for PIRADS3 Multiple Nodules

Improving Point of Care Learning for Prostate Cancer Imaging.

Current Point-of-Care (PoC) learning is unstructured, disrupts workflows, and requires close contact between learners, tutors, and patients, increasing the risk of disease transmission. This project proposes a structured radiology curriculum for prostate cancer imaging, powered by Machine Learning (ML), to enhance PoC learning.

The curriculum will be integrated into an ML-driven game, accessible via handheld tablets, and linked to the Picture Archiving and Communication Systems (PACS). Additionally, an automated prostate MRI reporting system, based on structured reports from ECUREL, will enable expert radiologists to generate accurate reports. These reports will also serve as a marking guide for students, improving assessment and training.

This approach enhances student engagement, fosters social and emotional learning, and addresses gaps in healthcare education while ensuring COVID-19 safety compliance.

MultiModal Deep Learning for Chest X-ray-based TB Screening in Uganda.

Tuberculosis (TB) remains a major global health challenge, with a high prevalence in Africa. The World Health Organization (WHO) recommends improving screening and

diagnostics to enhance TB detection and treatment. Chest X-ray (CXR) is the standard screening method; however, many African countries face a critical shortage of radiologists, which hampers the efficiency and effectiveness of TB screening.

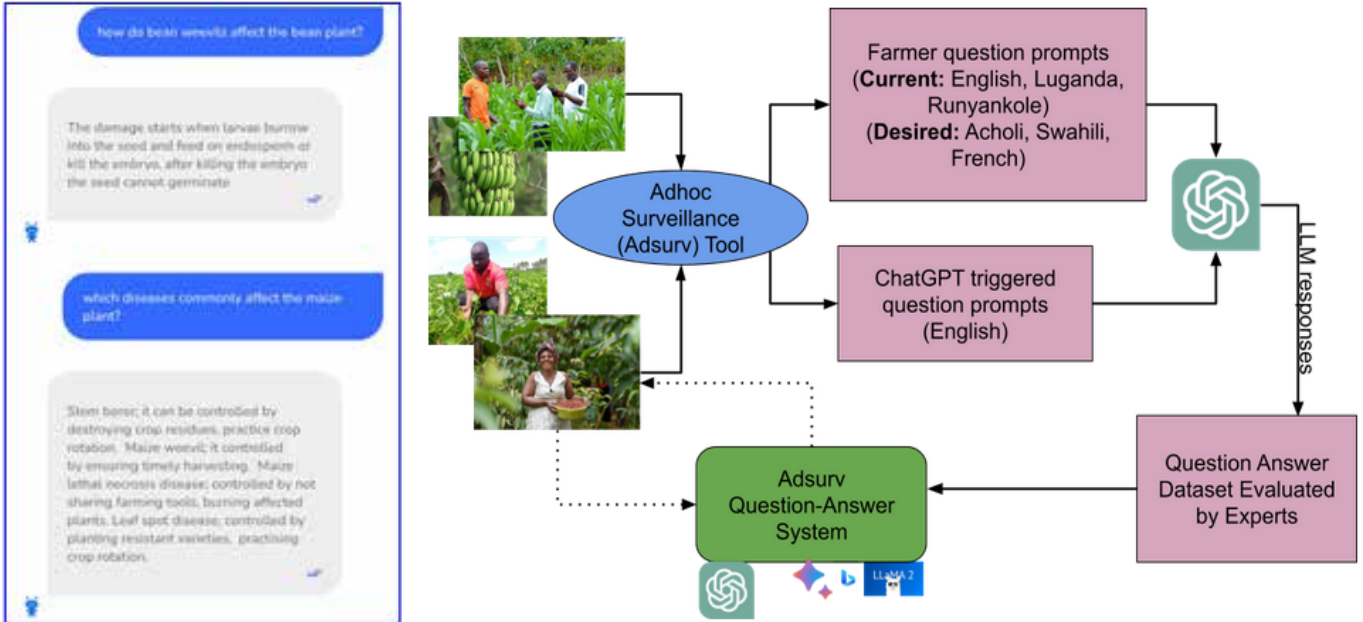
AI in Agriculture Analyzing Large Language Models for Multilingual Localized and Targeted Agricultural Advisory

This project explores the use of **Large Language Models (LLMs)** to provide **multilingual, localized, and targeted agricultural advisory** to smallholder farmers in Uganda.

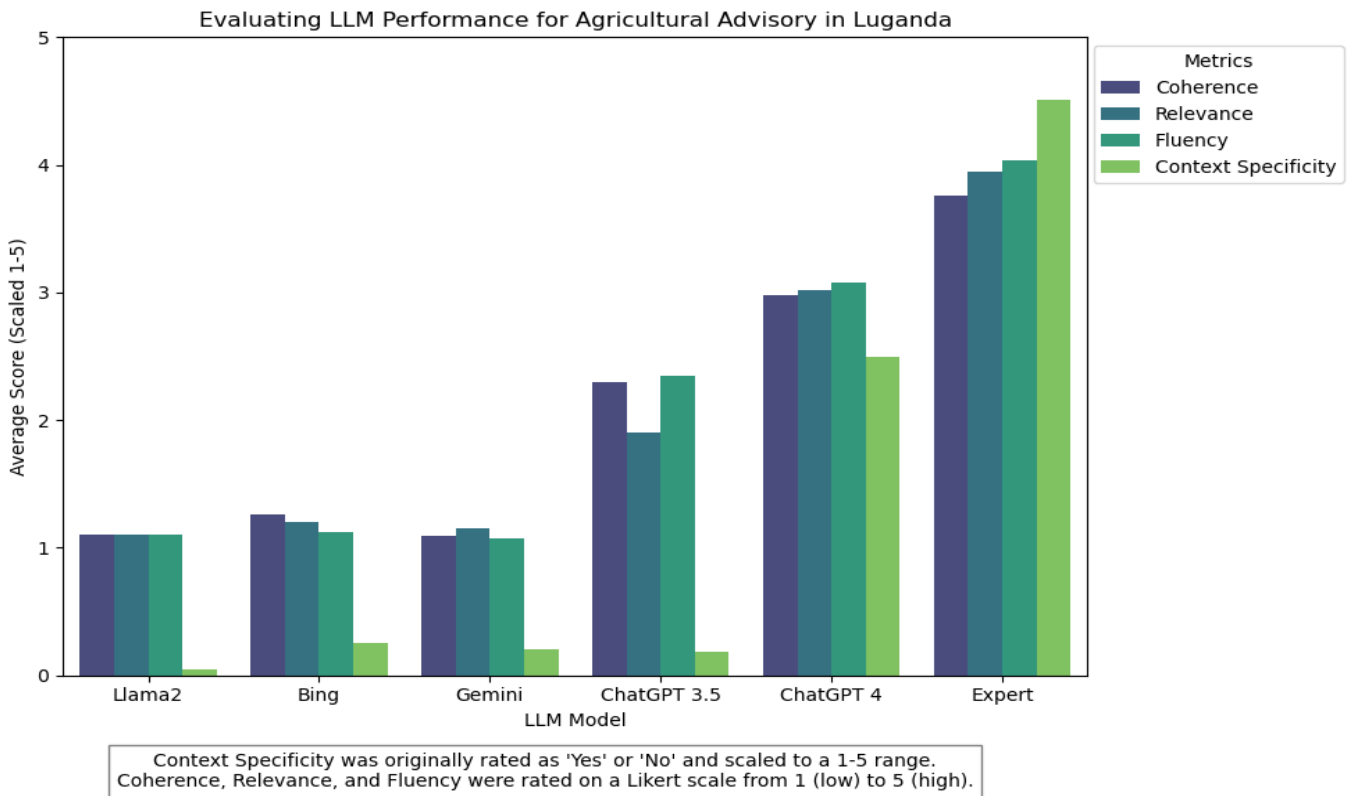
By utilizing LLMs, the project aims to bridge the gap between farmers and agricultural experts, offering timely and context-specific advice that can help address challenges such as **food insecurity** caused by diseases, pests, and poor yields.

The project focuses on developing and analyzing an **agricultural question-answer dataset** to ensure that LLMs, such as **GPT-4**, can generate relevant and coherent responses to farmer inquiries in **multiple languages**, including **Luganda**.

This solution leverages **mobile technology** to make advisory services accessible to rural farmers, overcoming limitations like the shortage of experts and the need for localized advice.



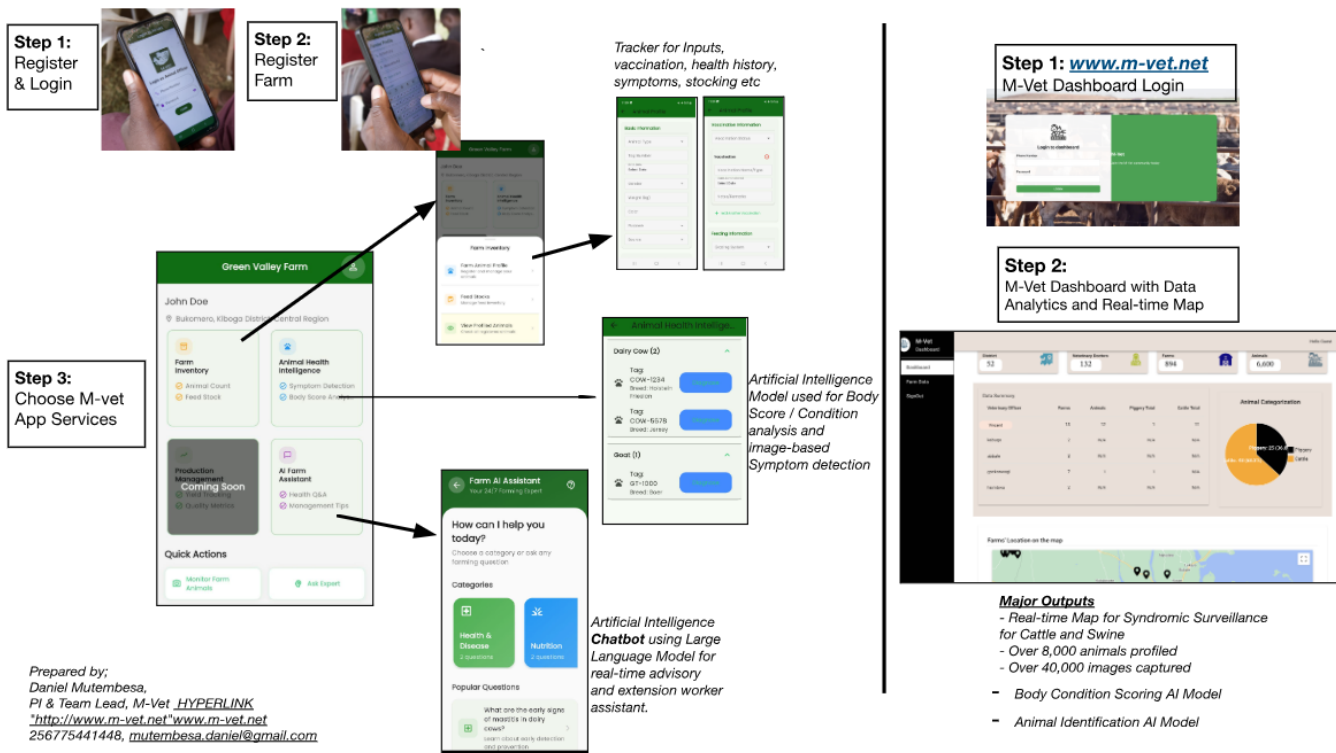
This image captures the cycle and highlights the key stages, from farmer questions to dataset expansion and expert evaluation, ultimately contributing to a better multilingual app.



This graph shows the analysis of the results from the expert evaluation of the LLM advisory on Luganda agricultural queries

M-Vet: Leveraging Data and AI for Livestock Health and Production Tracking

M-Vet curates real-time livestock health data to develop AI-driven solutions for improved disease monitoring, diagnosis, and response. This enhances veterinary care, boosts livestock health, and supports agricultural transformation in Uganda and beyond.



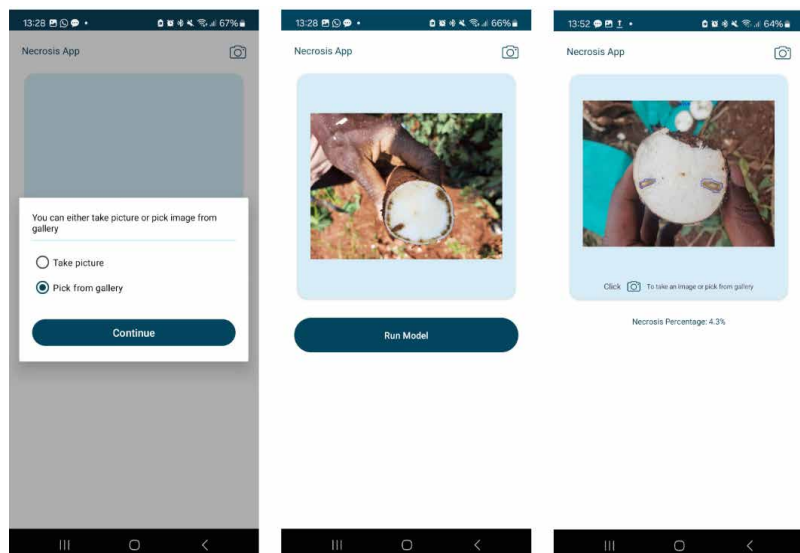
How the M-Vet Platform (www.m-vet.net) works (App, Dashboard, AI)

Development of Machine Learning Image Phenotyping Tools to Automate Cassava Breeding Tasks

Cassava breeders measure factors like Cassava Brown Streak Disease spread, whitefly count, and postharvest physiological degradation (PPD) to determine the usable shelf life of cassava and decide which genotypes to advance in the breeding cycle. Current methods rely on visual analysis, which is subjective and low throughput. This work presents

Machine Learning tools designed to provide accurate measurements, aiding breeders in making informed breeding decisions.

A Machine Learning image-based root necrosis detection system using a UNet model was developed, achieving an Intersection Over Union (IOU) of 0.901 for necrosis detection. The model is deployed as web and mobile apps.



mobile application interface of the UNet-based cassava root necrosis detection system **Post-harvest physiological deterioration (PPD)**



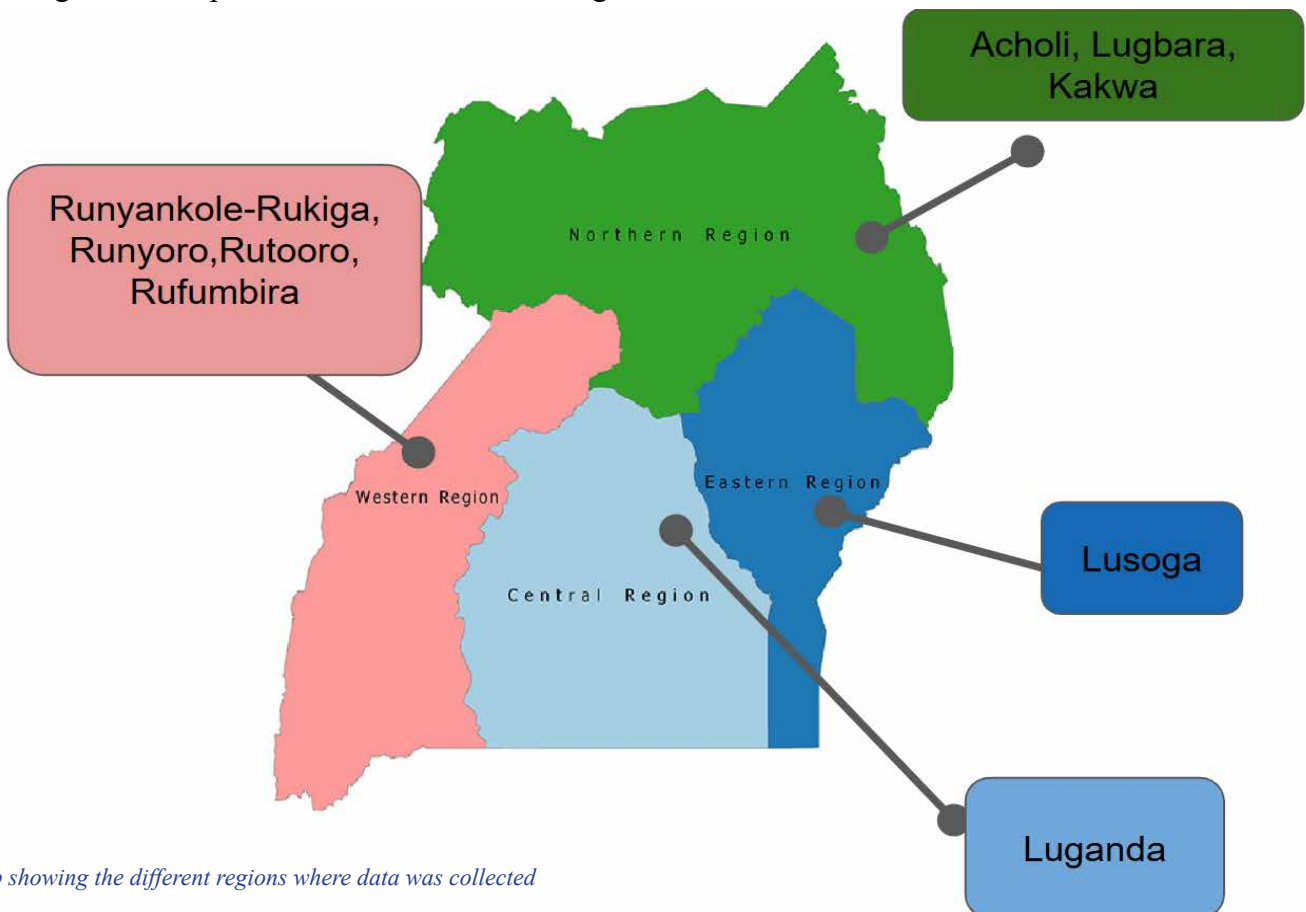
Visual representation of cassava post-harvest physiological deterioration (PPD) at different severity levels (low, moderate, high) as classified by the machine learning models

A I for language technology:
Building Machine Translation Models for Informal Speech

Traditional machine translation systems often struggle to accurately capture the nuances of informal speech, which is characterized by the use of slang, idioms, proverbs, and code-switching.

This limitation is largely due to the scarcity of appropriate datasets that reflect the richness and variability of informal communication in Uganda.

Data was collected through web crawling, local publications, and contributions from professional linguists, ensuring a diverse representation of informal speech across various Ugandan languages.

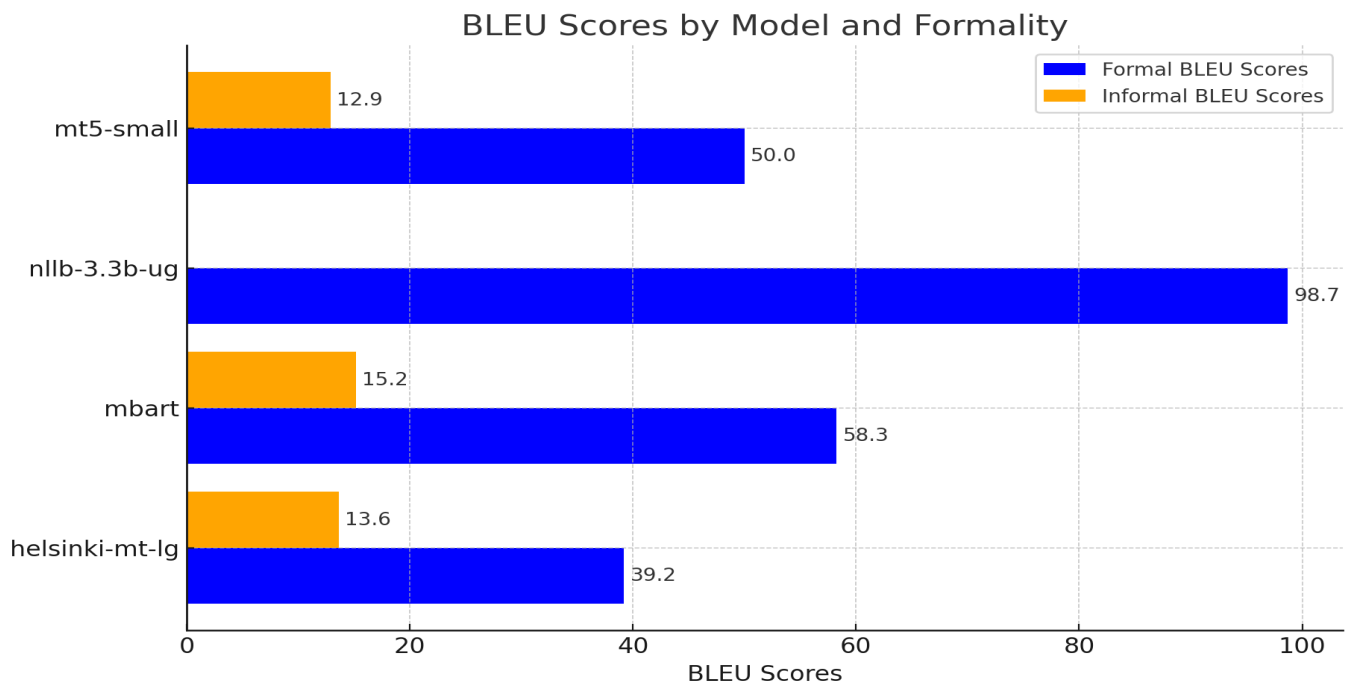


Map showing the different regions where data was collected

Text in Luganda	English Interpretation	Literal Meaning
Abalamu baseesa gwaka omuliro	The living keep up only the burning fire.	People love one when one is still alive
Abala ennage ava ku emu	One who counts kernels begins with one.	All things must have a beginning.

presents examples from the dataset, pairing informal sentences in Luganda with their English translations and literal meanings.

The quantitative evaluation showed significant performance differences, with the models performing notably better on formal sentences compared to informal ones.



Evaluation results showing significant performance differences; comparison between formal sentences and informal ones. bly better on formal sentences compared to informal ones.

Yogera App:

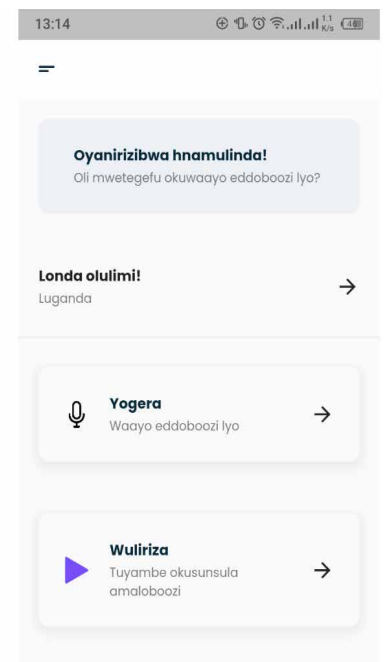
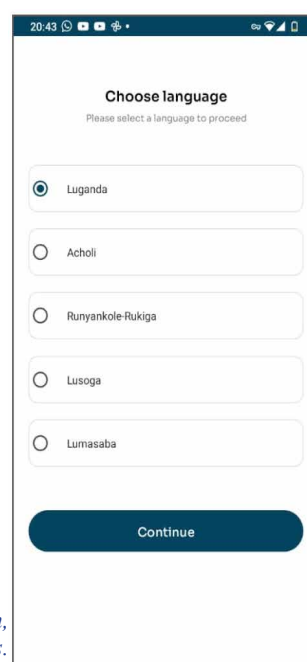
A Mobile Application for Voice Data Collection

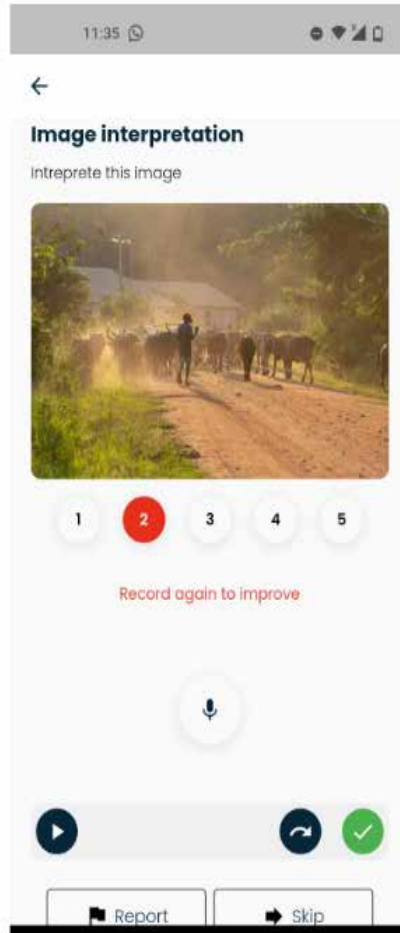
Yogera App is a mobile and web-based tool designed to collect speech and visual interpretation data for low-resource languages.

It builds speech recognition datasets through voice recordings and creates visual interpretation datasets via voice descriptions of images.

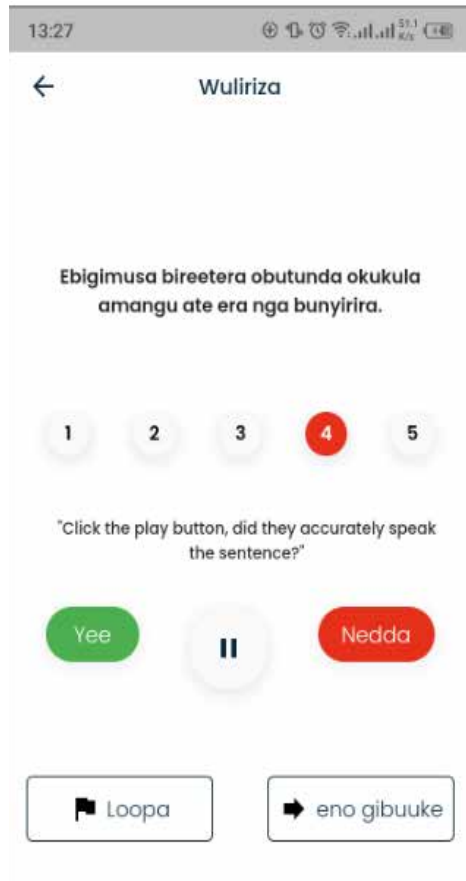
The app, supporting Luganda, Swahili, Runyankole, and Lumasaaba, helps address the lack of diverse datasets needed for training ASR and Vision Language Models.

The Yogera App user interface shows the account creation, login, and language selection processes for voice data contributors.

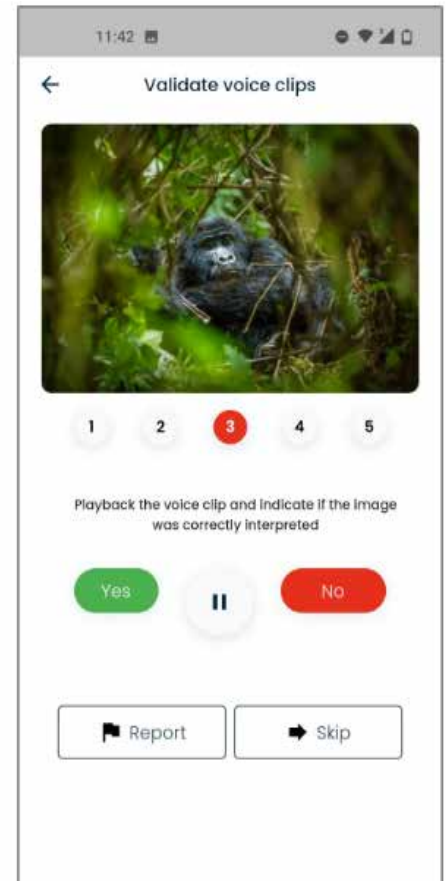




(L-R)
The Yogera App user interface for text recording and image interpretation.



(L-R)
The Yogera App user interface displaying validation for text recording and image interpretation.



Personally Identifiable Information (PII) Project

The Lacuna PII project aimed to create high-quality, privacy-aware datasets for Luganda, Lumasaaba, Hausa, and Kanuri, ensuring Personally Identifiable Information (PII) protection and gender bias labeling. The project collected and annotated text from various sources, including radio transcripts, newspapers, and open-source datasets. Annotation focused on labeling entities such as names, locations, organizations, dates, and contact details while ensuring grammatical correctness and linguistic integrity.

Multi-Modal Deep Learning for Chest X-ray-based TB Screening in Uganda

Tuberculosis (TB) remains a major global health challenge, with a high prevalence in Africa. The World Health Organization (WHO) recommends improving screening and diagnostics to enhance TB detection and treatment. Chest X-ray (CXR) is the standard screening method; however, many African countries face a critical shortage of radiologists, which hampers the efficiency and effectiveness of TB screening

FUNDING AND PARTNERSHIPS

The Centre is funded by the International Development Research Centre (IDRC) Canada and the UK's Foreign, Commonwealth & Development Office. Its operations are further strengthened through collaborations with institutions such as:

- **Welcome Trust**
- **African Population and Health Research Center (APHRC)**
- **Google**
- **National Institutes of Health (NIH)**
- **National Agricultural Research Organization (NARO)**
- **Uganda Cancer Institute**
- **Institute of African Languages.**

These partnerships provide resources, expertise, and platforms for the practical application of AI innovations

SCHOLARSHIP AWARDS

❖ **Advancing AI Research**

The Centre is committed to pushing the boundaries of AI research, focusing on developing innovative solutions that address critical challenges in healthcare, agriculture, climate action, and language processing. This includes:

- Building comprehensive datasets for African

languages, health applications, and other sectors

- Developing AI models tailored to local contexts and challenges
- Publishing research findings in reputable international journals to contribute to global AI knowledge

❖ **Capacity Building Initiatives**

A core priority of the Centre is developing local AI expertise through:

- Training MSc and PhD students in AI and data science
- Providing mentorship and research opportunities for young researchers
- Organizing workshops and seminars to enhance skills in AI development and application

❖ **Policy Integration**

The Centre aims to work closely with government and policy stakeholders to:

- Contribute to the development of a national AI policy for Uganda
- Ensure that AI innovations align with existing regulatory frameworks
- Advocate for responsible AI principles in policy formulation

❖ **Multidisciplinary Collaborations**

Recognizing that AI's impact spans multiple sectors, the Centre emphasizes interdisciplinary collaboration:

- Working with health scientists, engineers, linguists, and environmentalists
- Partnering with industry players to translate research into practical applications
- Collaborating with international research institutions to leverage global expertise.

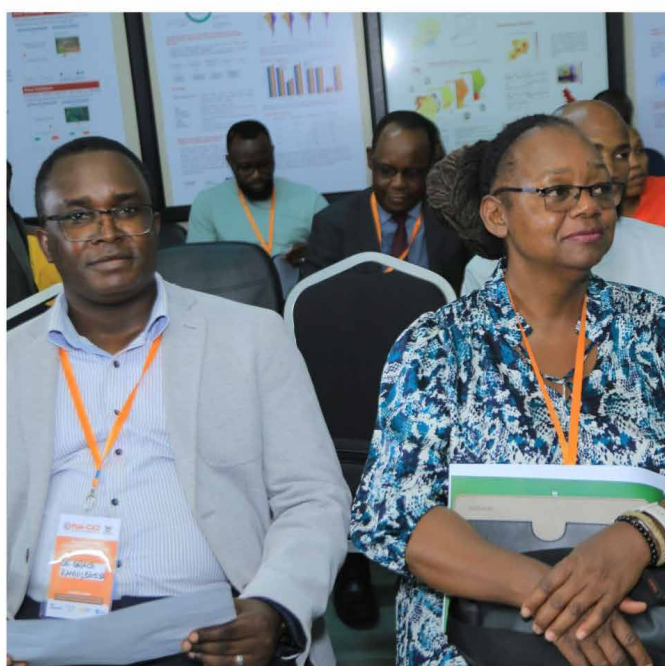
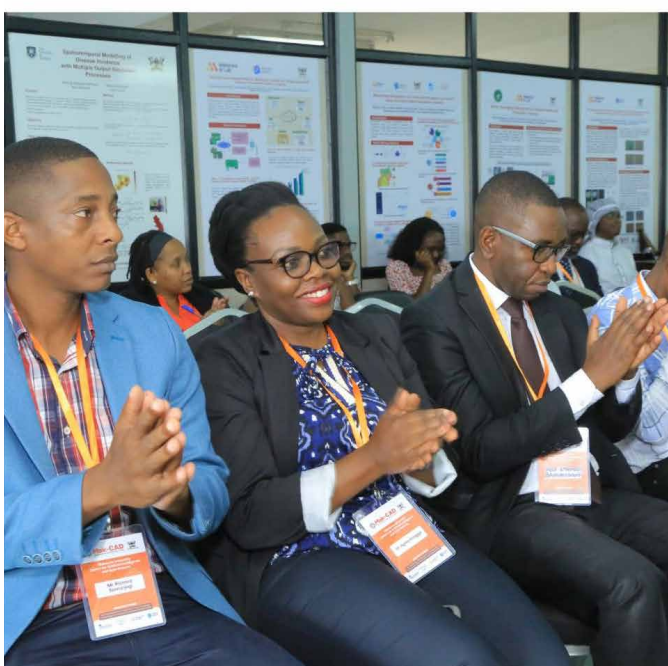
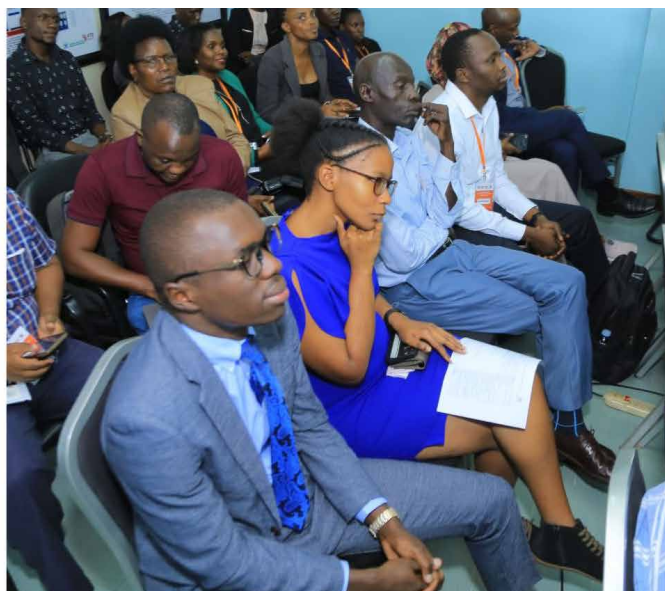
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- Partnering with industry players to translate research into practical applications





MAKERERE UNIVERSITY INNOVATION POD

MakUnipod a multi-disciplinary state-of-the-art facility, was established on 1st August 2022 and launched on 23rd January 2024, as an autonomous unit mandated by the Office of the University Vice Chancellor, with the aim of fostering a culture of innovation and entrepreneurship within the university community and beyond.

MakUnipod serves as a dynamic physical space and cultural melting pot, fostering innovation among students, faculty, and external individuals alike, irrespective of their academic backgrounds. It offers a nurturing environment where individuals can unleash their inherent design prowess to craft solutions.

MakUnipod's objectives were as follows:

1. To develop the capacity and strengthen the skills, abilities, processes, and resources of the unipod in regard to human resources and infrastructure.
2. To promote the services to the different stakeholders
3. To commercialize innovations for industrialization

4. To foster strategic partnerships and establish regional and international collaborations.
5. To mobilize financial resources to support innovation processes.
6. To develop and review innovation policy and legal frameworks

Marker spaces

MakUniPod is committed to providing essential infrastructure and facilities to nurture a community-focused innovation ecosystem. It was crucial to consider key factors during the planning phase to ensure the space is fair, inclusive, engaging, and safe.

Critical provisionstackledincluded: designing spaces for safety and functionality, creating collaborative workspaces, facilitating meeting and training locations, ensuring accessibility for individuals with disabilities, offering dependable internet access, and upholding clean restroom facilities.



A group photo during the MakUnipod Launch

UNIPOD SPACES AT MAKERERE UNIVERSITY (AREA OCCUPIED/DESCRIPTION)

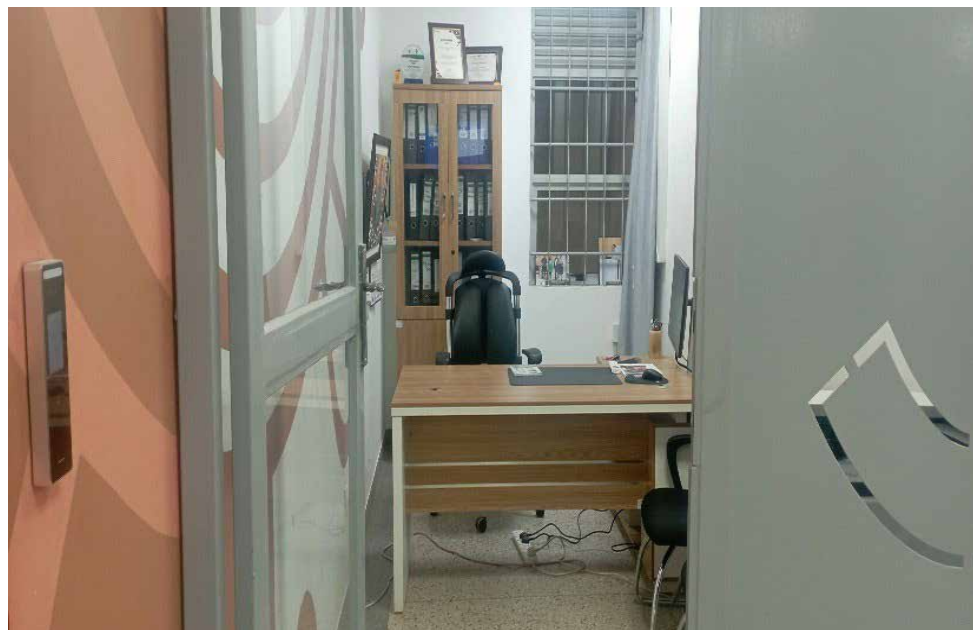


Reception (17.28m²)

An inviting and playful atmosphere, with captivating features such as a reception desk crafted from recycled materials. The space boasts eye-catching artwork that captures attention, inspiring quotes adorning the walls, a feature wall allowing visitors to leave message, an electronic LED screen showcasing scrolling video images of prototypes and event announcement, lush green plants or indoor trees that enhance the ambiance and an exhibition area on the wall to showcase physical products created within the MakUniPod.

Knowledge transfer office (9.8m²)

Operationalization, staffing, Strategic planning, offering Intellectual property protection support, commercialization, research, Partnership's engagement and resource mobilization

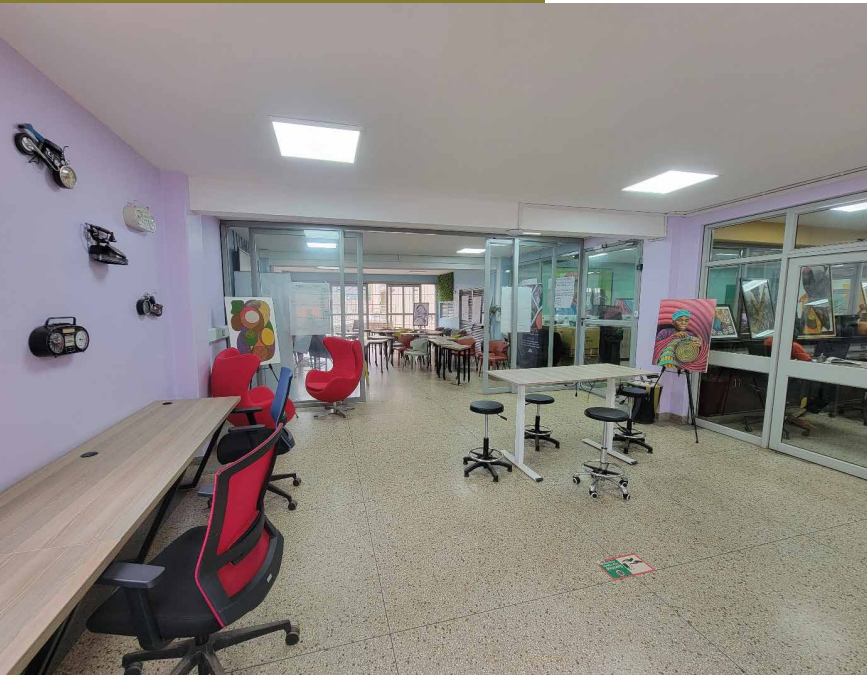


Lobby (64.9 m²)

Features vibrant and cozy seating arrangement, has a flat screen.

**CAD room1 (22.79m²) and
CAD room2 (30m²)**

Furnished with Computers and software to facilitate learning and innovation. Provides opportunity to utilize computer-aided design (CAD) software to develop solutions and subsequently proceed to bring their ideas to life by

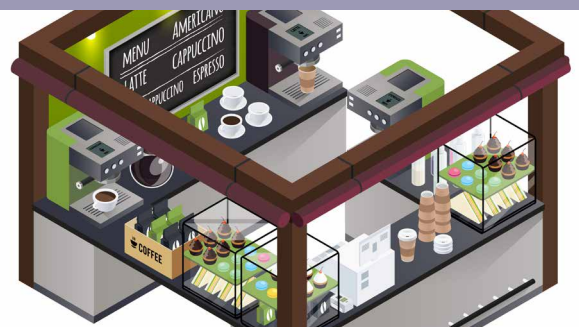


Design Lab/Collaborative space (48m²)

Meticulously set up, configured, and furnished to serve as an optimal environment for design thinking processes. Serves as a meeting room, training room, for mentorship and coaching sessions, workshops, seminars, conferences, pitching, and peer collaborations, ensuring a conducive environment for focused work and discussion

Food tech (25.65m²)

Furnished with baking equipment, Juice extractor, dryer, Oil press, grinder, vacuum sealing for packaging purposes and display area for finished products.



**Electronic
Makerspace (114m²)**



Textiles room (30m2)

Equipped with a variety of computerized embroidery machines and digitized sewing machines which are key to modern textile production.

PCB fabrication (16.96m2)

Facilitates the realization of a wide array of prototypes, offering capabilities for testing and manufacturing, including the production of double-sided printed circuit boards (PCBs). It has an electronic battery management training system, 3D printers, renewable energy training platforms. A tool shop where all the tools used in the MakUnipod are kept after use.



Workshop area (91.2m2)



Green Tech space

Provides opportunity to experiment and innovate in various areas, including plastics recycling and green energy. Has resources for sorting, cleaning, shredding, and injection molding of plastics, enabling users to explore recycling initiatives and develop sustainable solution, equipment, and expertise for the utilization of green energy technologies, with a focus on solar power, to support renewable energy projects and innovations. Provides opportunity for collaboration with other workshops within the MakUniPod to manufacture additional equipment needed for specific projects, enhancing the versatility and capabilities of users and soil analysis kits to facilitate improved farming practices, empowering agricultural innovation and sustainability efforts.

Mechanical space

Where materials are transformed into tangible products through mechanical processes. This workshop is equipped with a diverse range of tools, encompassing both traditional analog tools essential for materials fabrication and advanced digital tools such as computer numerical control (CNC) equipment. It serves as a hub for the assembly of products that bridge the realms of mechanics and electronics, known as mechatronic devices. Examples include robots and drones, which are partially constructed within this space, leveraging the integration of mechanical and electronic components to realize their functionalities.

Woodworking space

Where carpentry skills are imparted and honed through hands-on practice. It encompasses the use of a wide array of tools, ranging from traditional analog implements such as saws, planers, and drills, to modern digital equipment like the CNC router. It offers access to both traditional and cutting-edge tools, and caters to diverse learning needs and encourages experimentation and innovation in woodworking projects.

Work bench space

Outer space for working on projects

Audio-Visual and Augmented Reality/Visual Reality Studio

A powerful platform for generating simulations that offer a level of visual examination and exploration closely resembling real-life scenarios, particularly through immersive 3D experiences. Unlike conventional 2D representations found in typical videos, this technology provides a more immersive and realistic environment for users. Its significance extends beyond just a step in the iterative design process; it also facilitates the remote experience of simulated or envisioned realities. VR (Virtual Reality) and AR (Augmented Reality) technologies play a pivotal role in various applications, including training and remote guidance. They enable users to engage in immersive training experiences and receive expert guidance remotely across a diverse range of processes and industries.

Photography studio section (60m²)



Mixing studio section (60m²)



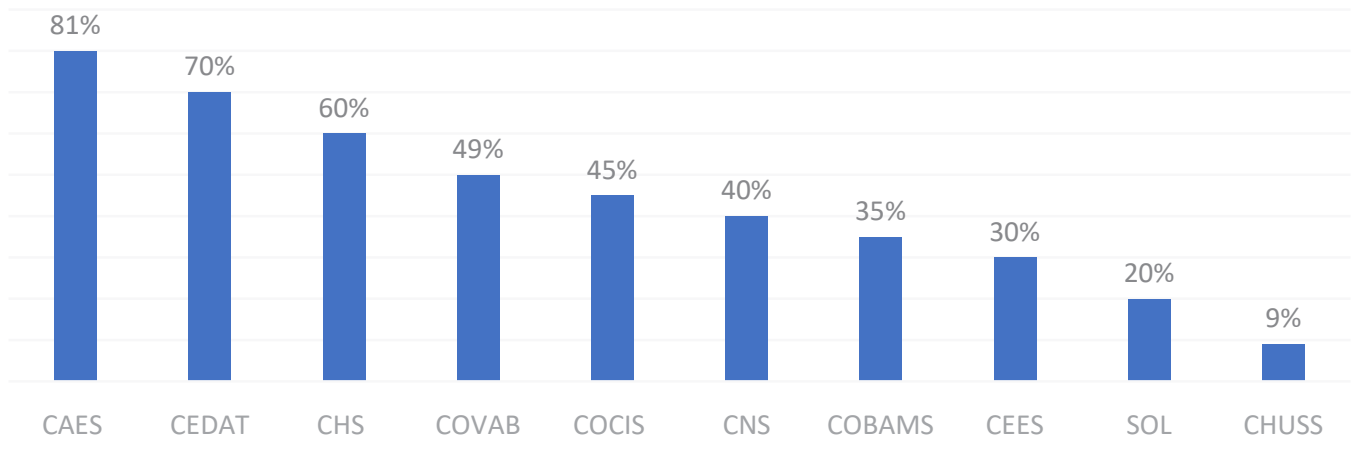
Audio production section (58.5m²)



INNOVATIVE PROJECTS AT THE UNIPOD

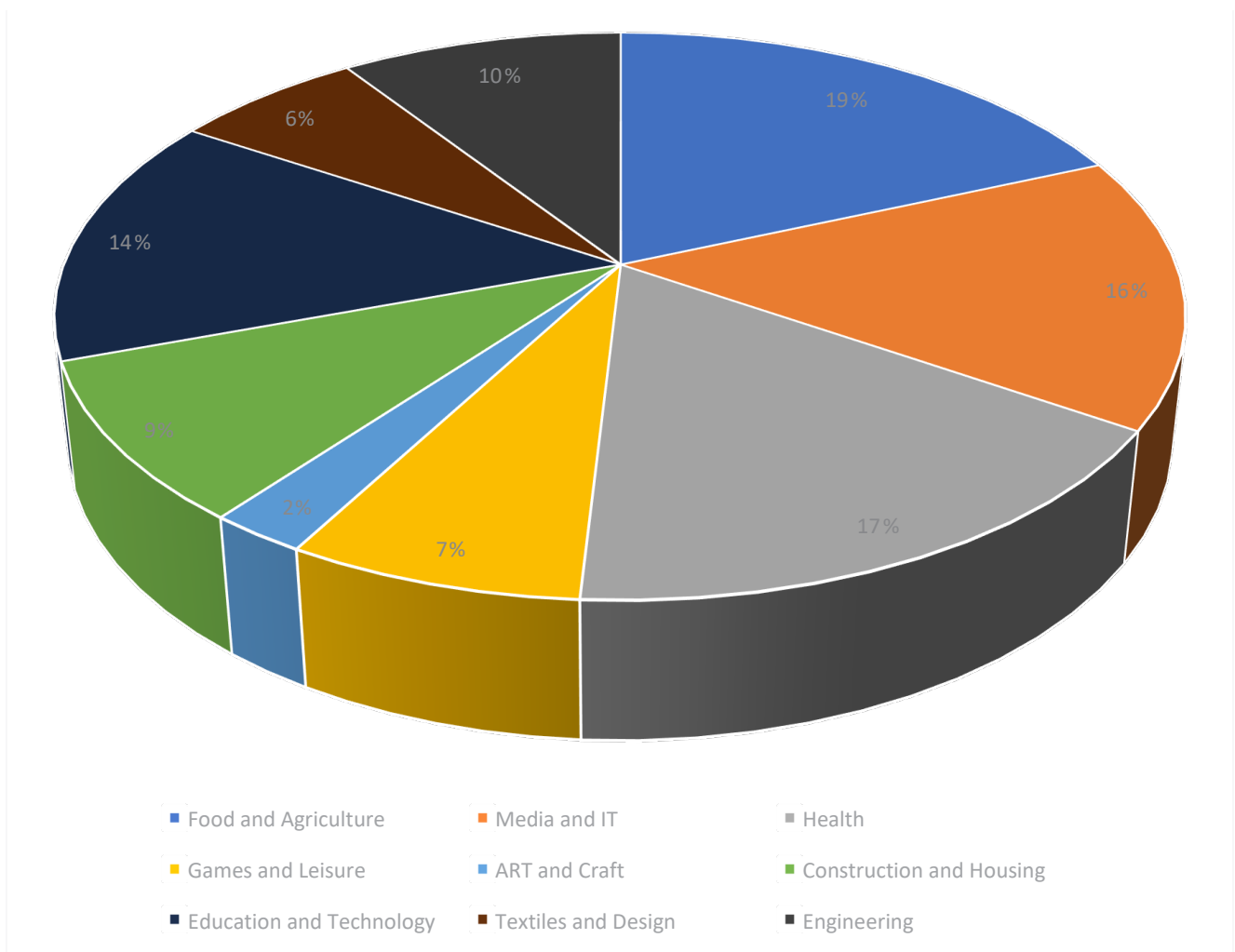
The College of Agriculture and Environmental Sciences (CAES) has the highest number of innovations that have used the equipment or have been supported by the Unipod through the year, 2024.

Innovations at MakUnipod by College



Innovations at MakUnipod by Sector

The highest number of innovations at the Unipod stem from the Food and Agricultural sector.



LIST OF INNOVATIONS AT MAKUNIPOD

Table 10. List of Innovations at MakUnipod

SN	Project	Innovator(S)	College
1	AQUA CLEANSE	Nabaasa sylvia Nyadoi Adriana	CAES
2	Automated brick laying robot	Ayebale Godfrey	CEDAT
3	Automated Pig Feeder	Ayebale Godfrey	CEDAT
4	Bionic eye Development	Sserunjogi Hillal Ntulume Wilson	CHS
6	Campus 360	Kyambadde Francis Raymond Kasule	CEDAT
7	Dual-axis solar tracker	Nakiwanuka Olivia	CAES
8	Eco-drive Energy system	Bageya Henry Musiime Duncan	CEDAT
9	Electric Renewal System	Hakuzimana Emmanuel	CEDAT
10	Electric train project	Obote Joshua Joe Okumu Gerald Ephream	CEDAT
11	Electronic Mweso playing Board	Mugabi Arafatih Lubega Juma	CEDAT
12	Enoch Tillers	Atumanya Joshua Kagumire	CAES
13	Face and finger biometrics-based exam access control and management system	Charles Murungi Samuel Ssenyonga	CEDAT
14	FLAV	Otim Timothy Musinguszi Patricia	CAES
15	Fruitie boost- Dried Jack fruit	Naluwooza Sheillah Faith	CAES
16	Furniture startup Development	Mukisa Joshua	CEDAT
17	GO Leather Investments Ltd	Ganyira Onesmas	CoVAB
18	Implementation of GPT powered inclusive voice assistant	Amwine Nelson Ndagire Racheal	CEDAT
19	Infinity radio	Tusime Miika	CHUSS
20	Intelligent Hive management and honey harvest forecast system using IOT and machine Learning	Mpairwe Lauben Rwenera David	CoVAB
21	Koonda Digi Greenhouse	Nakimbugwe Angel Denzol Ebony Owomugisha Olivia Tumwesigye Felix	CAES AND CEDAT
22	Lex Amica Podcast	Mahad Kisuze .M Nuwe Ahereza	School of law
23	LIISA PROJECT by MEC AUTO systems	Wabulembo Jethro Lweere Michael	CEDAT
24	MAK SAFESPACE	Mubiru Ivan Akol Abraham	CAES
25	MakSoy Varieties	Prof. Phinehas Tukamuhabwa	CAES
26	Maisha Malaria Syrup	Felix Ochom	CHS
27	MAT Water Solutions	Ategeka Matia	CAES

SN	Project	Innovator(s)	College
28	Mindbridge Connecting Youths to Care	Katono Lauryn Mamgbi Geofrey	COCIS
29	MpaMpe	Atuhairie Ronnie Ninsiima Patricia Banura Ssemaganda George	COCIS
30	NUTRIPULSE UGANDA	Matsiko Alex	CAES
31	Onyango's cakes and cookies	Onyango Benjamin	CAES
32	Organic pesticides	Olet Calvin	CAES
33	Plastic waste Accountability system (PWAS)	Katuramu Edgar Tukwasiibwe Martin	COCIS
34	Product design development and Innovation	Dr. Dorah kasozi Dr. Raymond Nsereko Dr. Ndagire Kavuma	CEDAT
35	Raven cock wine	Kansiime paul	CAES
36	Safe drinking water machine	Onyait Richard	CEDAT
37	Safepulse technologies	Ajolo Precious Mercy	CEDAT
38	Sharp Edge Technologies- CNC Mini Machine	Musiimenta Alfred Marvin	CEDAT
39	Smart flask	Buyungo John Baptist	CEDAT
40	Sweet Delights- tamarind jam	Nyapendi Angel Zita	CAES
41	Tendah Agro Sort company	Musalwa Moses	CEDAT
42	The Digiveta	Wabulembo Jethro Talitha Psalms Lweere Michael	COCIS
43	The Ideasmith's Turbo Trek	Kisolo Paul Nakatudde Hedridge Oscar Nuwanya	CHS
44	THE NUTRIBLEND BOOST	Kasule Ratib Mayanja Alkam	CAES
45	Traffic management system	Efrata Aron Nankya Shadia	CEDAT COCIS
46	Tripulex Bamboo products and wooden products	Tinyefuza paul	CoBAMS
47	TUSHBOT AI powered climate change chatbot for inclusive impact	Tony Tushabe	COCIS and CAES
48	UlcerFix	Dr. Kasozi Gabriel	CONAS
49	Uniwatsh	Abigaba Marvin Masuba Abdqadir	COCIS and CHUSS
50	Urban4G Limited-smart generator	Abaasa Abani	CEDAT
51	Winfred cookies and daddies	Adong Winfred	CAES
52	New York Kindergarten and Primary school	Ms. Leilah Lunkuse Dr. Hellen Namaweje	CoBAMS

STUDENT-LED STARTUP

These are innovations that students have been able to develop a minimum viable product and legally established companies registered with Uganda Registration Services Bureau

Table 11. showing Student-led startups Innovations

No	Startup	Founder and Team Leader
1	MAT Water Solutions	Mr. Matia Ategeka
2	Raven Cock Wine	Mr. Paul Kansiime
3	Truplex Kitchen Ware	Mr. Paul Tinyefuza
4	Maisha Malaria Syrup	Mr. Joel Felix Ochom
5	Wezuule Initiative Ltd	Ms. Mariat Namiiro

MAKUNIPOD WALL OF ME



Innovations that have formed companies the the MakUnipd and are now established in the market



H.E, The Ambassador of German to Uganda, Matthias Schauer on a tour of MakUnipod

COMMERCIALIZATION PROJECTS

Table 12. List of 15 commercialisation projects

No	Name of PI	College	Project description	Innovation
1	Dr. Ahamada Zziwa	CAES	Towards Scaling and Commercialization of a Hybrid Solar Dyer	Hybrid Solar Dryer
2	Dr. Alice Nabatanzi	CoNAS	Commercialization of Affordable Value-added PhytoNutra Chicken Concentrate Feeds	Ali Nutra Poultry Feeds
3	Dr. Andrew Tamale	CoVAB	Strengthening capacity for Doctoral training and supervision using a multidisciplinary mentorship approach	Graduate IRHub
4	Dr. Bosco Amerit	MUBS	Ajon/Malwa; from the Courtyards to the Supermarket shelves (Ajon Gold)	Emuriat Breweries
5	Dr. Edward Nyatia	CoVAB	Rice Husk Briquette Production: The One Health Bioenergy Combo	Greak Lakes Briquette Facility
6	Dr. Edward Ssebuufu	CoVAB	Enhancing and Replicating Vitex Medical Assistant Tool: A novel system for curbing Highly Infectious Diseases and AMR acquired in Hospital settings	Ganda Biomedical Technologies
7	Dr. Hillary Kasedde	CEDAT	Acceleration of e-mobility transition through a transdisciplinary approach.	Redvers Emobility International limited
8	Dr. Immaculate Nakalembe	CoVAB	PhytoFoodPlus: Phyto-nutraceutical products from wild edible fruits and vegetables for Mitigating Malnutrition among pregnant women and children	Akajulo Foods
9	Dr. Ivan Nathanael Lukanda	CHUSS	Senga-EduSave: Prevent school teenage pregnancies and EduSave a girl child in Uganda	Edu-Senga
10	Dr. Jacob Godfrey Agea	CAES	Upscaling the production of Canarium Schweinfurt wine (EMPAFU WINE) for commercialization	Empafu Wine
11	Dr. Joseph Kizito Bada	MUBS	Harnessing Multimedia Technology, Digital Games and Animated stories for educating Adolescents on Preventive Measures against early pregnancies and drug abuses	Edu-Technologies Ltd
12	Dr. Joshua Wanyama	CAES	Scaling up and commercialization of the sensor-based smart irrigation kit	SMART-IRR-KIT
13	Ms. Rhoda Nalubega	Library	Up-scaling digital land archival collection access in Makerere University Library	Mak Digital Archival Access
14	Dr. Rose Nakabuye	CoCIS	An E-health System For Improving Healthcare Access And Efficiency In Developing Countries With Focus On Uganda	Osyrx Technologies
15	Dr. Taddeo Ssenyonga	CoNAS	Accessibility of science practical's to both public and private schools in Uganda	Sci-Connect



HIGHLIGHT PROGRAMS AT THE MakUniPod

VISIT TO KIIRA MOTORS



Under the one year E-Mobility Skilling program that was launched in October 2024 to equip 25 students with cutting-edge skills in electric vehicle technologies in partnership with Makerere University, Kiira Motors Cooperation and UNDP.

On March 4th 2025 these students had an industrial visit to Kiira Motors Cooperation Plant in Jinja to further their knowledge through out the program. Currently the students are under an internship program in Jinja as part of the last phase of the 1st Cohort, the 2nd cohort is expected to launch this year in september.



Students training at the Emgrand EV450 Power Battery management System Training Table at MakUniPod

LAUNCH
OF THE INDUSTRY 4.0
TRAINING PROGRAM
30TH MAY 2025



Makerere University Innovation Pod, in partnership with **Lwera** Electronics & Semiconductors and development partner **UNDP Uganda**, officially launched the Industry 4.0 Skilling Program. The program aims to foster a vibrant Industry 4.0 ecosystem at **Makerere University** by equipping young innovators with hands-on skills in electronics, automation, and smart manufacturing. A cohort of 15 students and 5 graduates was selected to take part in this intensive training initiative. The program is designed not only to nurture professionals in the Industry 4.0 space but also to support the development of market-ready electronic products. The launch was officiated by the Minister of Science, Technology and Innovation, **Hon. Dr. Monica Musenero**, who commended the initiative for its role in shaping Uganda's future-ready workforce.



Hon. Dr. Monica Musenero, Minister of Science, Technology and Innovation at the Launch



LAUNCH OF REDVERS May 16th 2025
 the Vice Chancellor of **Makerere University**, Prof. **Barnabas Nawangwe**, officially launched Redvers, the first commercialization project from the **Makerere University Innovation Pod**. Redvers is a groundbreaking innovation that converts gas-powered

motorcycles into electric ones—offering a sustainable, eco-friendly alternative for urban mobility. This marks a significant step toward clean energy solutions and the commercialization of university-driven innovations. Redvers e-mobility International Ltd, founded by Mr. Daniel Senkungu. The company supported by **Makerere University Innovation Pod** is among the 15 projects that received MakRIF commercialization fund.

Redvers is supported by Prof. Hillary Kassedde and Prof. JB Kilabira from **Makerere University, School Of Engineering** as Principal Investigators.

BUSINESS CLINICS WITH URA



Program designed to demystify taxation and help students understand your responsibilities and rights as a citizen or entrepreneur in Uganda. The training program happens weekly at the Innovation Pod

REDEFINING CONCEPTS & PROTOTYPING WITH 3D PRINTING 26th March 2025

At Mak-Unipod, students from the Margate Trowell School of Industrial and Fine Art explored the power of 3D printing—learning how to transform ideas into tangible prototypes. Through hands-on training with our CNC technician [Robinson Mugerwa](#), they gained essential skills in digital design, modeling, and fabrication, equipping them to enhance both their academic research and innovative projects.



Makunipod HACKATHON Trainer Louis Kironde conducting the training session with students



UIPE President Eng Bosco Lepi, Eng Henry Mpuuga Vice President membership education and training UIPE, Dr. Cathy Ikiror Mbidde Manager MakUniPod pose for a picture with students from the different universities

INTELLECTUAL PROPERTY, INNOVATION AND ENTREPRENEURSHIP TRAINING FOR FIRST YEAR ENGINEERING COURSES 22-23RD FEB 2025

Students from different universities were trained by Makerere University Innovation pod in partnership with UIPE.

CLIMATE ACTION HACKATHON 22nd March 2025

The Mak-Unipod, in partnership with [csjuganda](#), kicked off a two-day hackathon under the theme “Innovate for Climate Action and Resilience.”



Prof. Robert Wamala addressing students during the launch of the CSJ HACKATHON



Participants from various courses at Makerere University formed teams to develop innovative solutions addressing the challenges smallholder farmers in Northern Uganda face due to climate change.

This hackathon also aimed to equip participants with the skills and insights needed to apply for the Uganda Climate Innovation Fund.

INTERNSHIP PROGRAM AT THE MAKUNIPOD

The MakUniPod opened up internship opportunities for continuing students in various fields. The Internship started in June 2025 to last for 3 months



Students developing designs in the Computer-Aided Design lab



Multimedia interns training



LAUNCH OF MAKUNIPOD

The official launch of the Makerere University Innovation Pod by UNDP on 23rd January 2024 was a landmark event, attended by prominent leaders including Ms. Elsie Attafuaah (UNDP Resident Representative), Ms. Ahunna Eziakonwa

(UNDP Assistant Administrator and Director, Regional Bureau for Africa), Hon. Monica Musenero (Minister for Science, Technology, and Innovation) and Ms. Lorna Magara (Chairperson Council, Makerere University).



Dr. Monica Musenero during the launch

UNDP BOOTCAMP TRAINING FOR UNIPOD TECHNICIANS AND MANAGERS

MakUnipod hosted 13 countries from Africa in a bootcamp training on Unipod management, machinery and equipment installation organized by UNDP. The bootcamp was successful in bringing together the MakUniPod network to reflect on the MakUniPod setup phase and generate insights for the implementation phase. Although the

network experienced major challenges during the set-up phase, the bootcamp demonstrated that with strategic guidance from timbuktoo and continuous inter MakUniPod communication, MakUniPods will take off this year and through timbuktoo ignite a start-up revolution in Africa.



Participants from 13 countries at MakUnipod during the bootcamp, 2024





RESEARCH ETHICS AND INTEGRITY

At Makerere University, the Research and Ethics Committees (RECs) are responsible for approving all research intended to be conducted within or outside the university. They are accredited, trusted, and approved RECs established to regulate research conducted in Uganda.

With RECs in place, all initial submissions are done online through the National Research Information Management System via <https://nrims.uncst.go.ug>. The following are the Makerere-approved RECs:



1. School of Medicine Research and Ethics Committee



2. School of Biomedical Sciences Research and Ethics Committee



3. School of Health Sciences Research and Ethics Committee



4. Uganda Cancer Institute Research and Ethics Committee



5. School of Social Sciences Research and Ethics Committee



6. School of Public Health Research and Ethics Committee



7. Infectious Disease Institute Research and Ethics Committee



8. Uganda Heart Institute Research and Ethics Committee



9. College of Business and Management Sciences Research and Ethics Committee



10. College of Agricultural & Environmental Sciences
Research and Ethics Committee

As part of the University's commitment to upholding research integrity, there is a need to understand the operations and challenges in ensuring ethical compliance within research conducted at Makerere University. Understanding the committees' operations and challenges will enable the Faculty and graduate students to explore available support mechanisms and strategies for enhancing ethical research practices at Makerere University.





MAKERERE UNIVERSITY VENTURE PROJECTS

Makerere University has a wide range of venture and research projects across various disciplines. These projects address diverse areas like sustainable development, public health, education, and technology, often with a focus on addressing local and global challenges. Some notable

projects include the MakSol Cooker, nanobody based point-of-care diagnostic kit for detection of covid-19 in saliva, Application of Iron Oxide Nanoparticles in Wastewater and Drinking Water Treatment and various research initiatives funded by the Research and Innovations Fund (RIF)

Table 13. List of Venture Projects funded supported by RIF

SN	Venture Title	Venture Led
	College of Engineering, Design, Art and Technology	
1	Direct Reduction Technology for Metallization of Ugandan Iron Ore	Prof. Wilberforce Olupot
2	Development of Solar Water Pumping and Water Drilling Technologies for Irrigation	Dr. Edmund Tumusiime
3	Development of Technology for Application of Iron Oxide Nanoparticles in Wastewater and Drinking Water Treatment	Dr. Robinah Kulabako Nakawunde
4	Nano-based adjuvants for vaccine and therapeutic application	Prof. JB Kirabira
5	Pathogen Economy Labs	Dr. Andrew Katumba
6	Development and production of medical and Biomedical Plastics	Prof. JB Kirabira
7	Valorization of Cassava Peels into Nano Adsorbents for Wastewater Treatment in Uganda	Kayiwa Ronald
	College of Veterinary Medicine, Animal Resources and Bio-security	
1	Lab Animal Research Facility	Prof JD Kabasa
2	ELISA antibody-based Surveillance Tools	Prof. Enock Matovu
3	Biomarker Facility	Dr. Kato Charles Drago
4	Development of a Sub-Unit Vaccine	Prof. Enock Matovu
5	Science-Led Productivity Accelerator Tool for Fast-Tracking Parish Development Model: Validation of Tool	Prof. John Kabasa
6	Developing a National Network of STI Excellence as a Foundry for Accelerated Transformative STI Human Capital Development	Dr. Claire Mugasa
	College of Natural Sciences	
1	Science Laboratory Reagents Project	Dr. John Wasswa
2	Design and fabrication of a continuous flow reactor for production of biodiesel from locally available waste	Dan Egesa

SN	Venture Title	Venture Led
College of Agriculture and Environmental Sciences		
1	Production scaleup and commercialization of the Makerere Smart Solar-electric Cooker for households, catering businesses and learning institutions: MakSol Cooker	Peter Tumutegyereize
2	Development of Canned Matooke and Gonja in Retort Pouches: A Proof of Concept for Sustainable and Convenient Agricultural Innovation	Martin Mutambuka
College of Health Sciences		
1	Smart Post-partum Haemorrhage Volumetric Drape	Maureen Etuket
2	Multiple function Neonatal Intensive Care Units (Baby Incubator)	Dr. Robert Sekitoleko
3	COVID-19 Biobank	Prof. Moses Joloba
4	Development and evaluation of nanobody based point-of-care diagnostic kit for detection of covid-19 in saliva	Prof. Charles Ibingira
5	Validation of Anti-plasmodium and Artemisinin pharmacokinetic enhancement potential of medicinal plants used by communities to manage symptoms of malaria	Ms. Bunalema Lydia
6	Clinical Trials for Natural Therapeutics	Prof. Bruce Kirenga
School of Public Health		
1	Vitamin D as a therapy for Chronic Conditions	Prof. Jude Lubega

EQUIPMENTS PROCURED THROUGH THE VENTURE PROJECT

A. College of Veterinary Medicine, Animal Resources, and Biosecurity

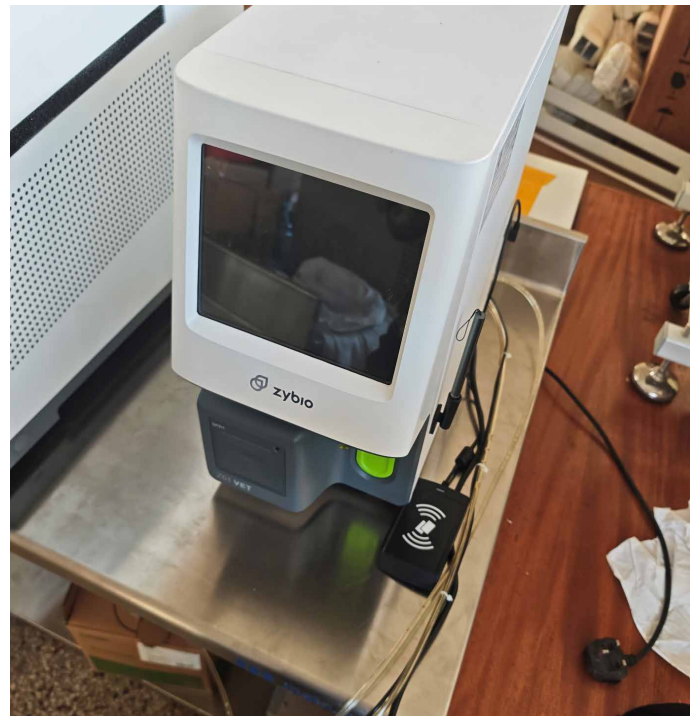
LC-Ms/MS Zenotof 7600 Sciex System



The system identifies and elucidates the unknown new structure of molecules in Proteomics, Metabolomics, Food safety, Toxicology, Drug development, Biotherapeutic, etc.



EXC200 Chemistry Analyzer (ZYBIO) Generates clinical biochemical parameters of human and veterinary samples.



Z51 VET Haematology Analyzer (ZYBIO) Generates hematology parameters of erythrocytes and leucocytes results of human and veterinary samples.



Lateral flow dispenser

Dispenses the conjugated colloidal gold, antigens and antibodies onto the nitrocellulose membrane at uniform flow rate.



Lateral Flow Strip Cutter Cuts the nitrocellulose membranes into uniform strips of RDT to be packed



Foil Lateral Flow Printer Prints on the foil packages of the RDT strips



UV-VIS Spectrophotometer It measures absorbance and transmission of visible light absorbed by sample (proteins, minerals) providing information about the sample properties and interactions with light.



Microplate Reader. It is used in the reading of microplates to measure chemical, biological or physical reactions, properties, and analyses within the well of a microplate to generate absorbance and concentrations of samples in microplates of ELISA and cultures.

Eppendorf BioSpectrometer® basic, 230 V/50 – 60 Hz . For Protein Techniques and recombinant DNA technology for Diagnostics Development (Protein analysis, purification, refrigeration of samples/consumables used in biomedical research) cultures.



Circulating water bath 39L



Freezer (-80)



Refrigerator (-20 and 4°C)



Innova-44 Incubator Shaker



ELISA Plate Washer (Touch Microplate Washer)



Centrifuge MiniSpin® plus, non-refrigerated, with Rotor F-45-12-11, 230 V/50 – 60 H



**ChemiDoc MP Imaging systems
(Accessories)**



**GelDoc Go Imaging System
including Tray and software**



**Agarose gel Apparatus - Sub-cell
GT Cell Horizontal Elec. System**



**SDS-PAGE Apparatus – Mini
Protean Tetra Cells Gel 1MM
with FC**



**Western Blotting Apparatus-
Mini Trans blot Cell (BOM)**



**Trans-Blot Turbo Starter
System**

*B. College of Engineering, Design, Art & Technology (CEDAT):
Materials Laboratory, Department of Mechanical Engineering*



**VP sigma 300 Scanning Electron Mi-
croscope** Materials characterisation and
Nanotechnology research (High resolu-
tion microscopy up to the nanoscale level).



**Malvern Analytical Zeta size (Ultra
Blue)** Materials Science & Nanotechno-
logy – Particle size determination and charge
determination which is suitable for drug
studies and pharmacological formulations.

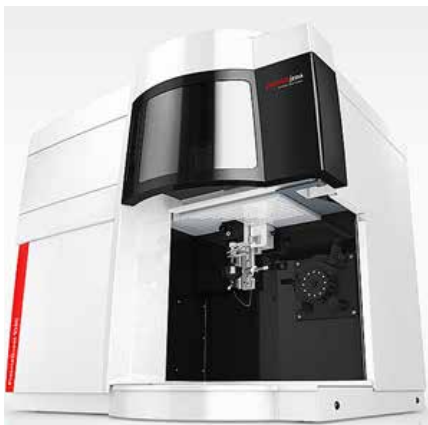


Probe Sonicator. Materials, Life sciences, Pharmacology - For Nanoparticle dispersion, Protein extraction, DNA isolation, enzymatic studies etc

Probe Sonicator. Materials, Life sciences, Pharmacology - For Nanoparticle dispersion, Protein extraction, DNA isolation, enzymatic studies etc



FDM 3D Printer. For additive manufacturing/rapid prototyping using plastic materials/filaments, End-use parts low cost production



Analytik Jena pq 9100 Inductively Coupled Plasma-Optical Emission Spectrometer (ICP-OES). Elementary analysis and composition of a sample and also to quantify the concentration of each element present

C. College of Natural Sciences (CoNAS)



Weinmann medical ventilator. Mechanical ventilation on participants who may be unable to breathe on their own or whose breathing is insufficient.



Clinical trial ward beds.



Crash cart/trolley.



EGG Machine. Used to monitor cardiac safety of the investigational products used in the participants



Treatment trolley. Used for handling of items needed to perform daily study procedures



Suction machine. Used for clearing the airway in case of blockage



Mindray hemolyser. Supports Complete Blood Count (CBC) testing of the participants



Stethoscopes. Used for participant examinations (auscultation or listening to internal sounds).



Sample mixer. Mixing participant samples such as blood



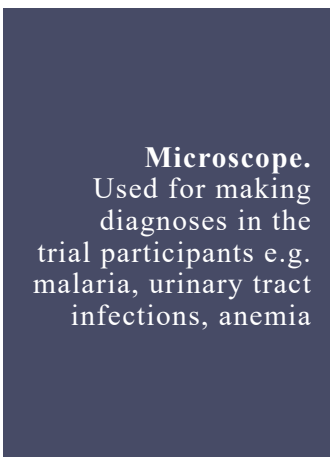
Participant Monitors. Monitoring participant vitals such as blood pressure, pulse, blood oxygen saturation (SP02).



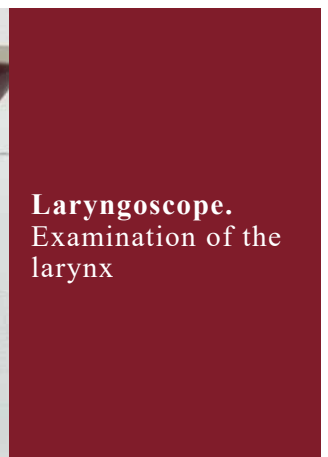
Chemistry Ion Analyzer. For renal and liver function testing of the participants



Mindray fusion Machine. For precise delivery of medications to patients sounds).



Microscope. Used for making diagnoses in the trial participants e.g. malaria, urinary tract infections, anemia



Laryngoscope. Examination of the larynx

SUMMARY OF THE COLLEGE RESEARCH, INNOVATION AND PARTNERSHIPS

1. COLLEGE OF BUSINESS AND MANAGEMENT SCIENCES

CoBAMS



The College of Business and Management Sciences is a constituent College of Makerere University. It is composed of three (3) Schools, School of Economics, School of Business and School of Statistics and Planning.

The College has seven (7) Departments and a Center for Population and Applied Statistics (CPAS).

The College is currently home to 5500 students across 21 taught programmes from undergraduate to doctoral levels.

The training programmes seek to prepare learners for further studies and also to enable them analyze and deal with problems of development in the region through a blend of theory from the classroom with practice from the 'world of work' through the internship programmes.

RESEARCH GRANTS AT CoBAMS

Table 14. List of Research Grants at CoBAMS

No.	Project Title	Principal Investigator
1	Masters Programmeme in Economics (MA ECON)	Dr. Ibrahim Mike Okumu
2	CASH-IN Privately Managed cash transfers in Africa	Dr. Bruno Lule Yawe
3	Environment for Development Initiative (EfD-MAK CENTER)	Prof. Edward Bbaale
4	Inclusive Green Economy (IGE- EfD MAK)	Prof. Edward Bbaale
5	Economic and Health Impact and the resilience of last mile populations in artisanal and small scale minniing unplanned settlements in Sahara Africa	Dr. Betty Kwagala
6	UN Capital Development Fund and Local Economic Acceleration Programme	Dr. Yusuf Kiwala
7	Harmonization of Entrepreneurship Education Delivery Project (HEED-Africa) - IAAMS	Dr. Allen Kabagenyi
8	Supported Childcare and Female Labor market	Dr. Nicholas Kilimani
9	Retail Finance Distribution (ReFinD) Research Initiative	Dr. Aisha Nanyiti
10	Fanancial Awareness and Literacy Leadership	Dr. Hellen Namaweje
11	Clean Energy for Development-A Call for Action	Prof. Edward Bbaale
12	Peer Learning Forest Management Capacity Building Programme 2023, Funded by Environment for Development Initiative (EfD-Global Hub), University of Gothenburg, Sweden.	Babyenda Peter
13	Quasi-experimental Evaluation of National Forestry Authority Projects in Uganda, Grant from Environment for Development Initiative (EfD), University of Gothenburg, Sweden.	Babyenda Peter
14	Environment for Development (EfD)- 2023, MS-1505, Principal Investigator; Electric Cooking in the Energy Transition: How much Subsidization is needed?	Aisha Nanyiti
15	Environment for Development (EfD)- 2023, MS-1487, Co-investigator; Climate-related risk and Sustainable Cage Fish Farming in Vietnam and Uganda.	Aisha Nanyiti c
16	JPAL Proposal Development Project Grant on Supported childcare and female labor market participation in East Africa	Nicholas Kilimani
17	Environment for Development Initiative Research Collaborative project on Solar-powered irrigation systems for resilience to climate change: An economic viability analysis. This Grant is between Researchers from the EfD Centre at Makerere University, EfD- Ethiopia, EfD-Ghana, Duke University, and Vrije Universiteit Amsterdam.	Nicholas Kilimani
18	Environment for Development Initiative Research Collaborative project on Electric cooking in the energy transition: How much subsidization is needed? This Grant is between Researchers from the EfD Centre at Makerere University, EfD- Ethiopia, EfD Kenya, and University of British Columbia-Canada.	Nicholas Kilimani
19	A faculty research grant by the African Economic Research Consortium on human capital development in sub-Saharan Africa for a project entitled: Is bigger necessarily better? Household size, expenditure, and children's educational attainment"	Nicholas Kilimani
20	The state of mental health at the workplace	Ms. Nakabuye
21	POLYCVIS: Confronting the Polycrisis in Europe and Africa. Makerere University, Partner Institution. Stephen Ojiambo Wandera, Team Member. Grant Amount: Euros 1.2 million. CIVIS application for a Jean Monnet Network on External Policy: EU-Africa. ERASMUS-JMO-2023-NETWORKS-HEI-NON-EU-AFRICA.	Dr Stephen Wandera

No.	Project Title	Principal Investigator
22	Assessing Dementia and Frailty among Older Persons in Selected Rural Districts in Eastern Uganda. Stephen Ojiambo Wandera, Ph.D. (PI), Dr. Monica Maria Diaz (CoPI), Assoc. Prof. Noeline Nakasujja (Co-PI) & Assoc. Prof. Leah Rubin (Consultant). Alzheimer’s Association of the USA. Grant Number: AARGD-NTF-22-975156, Grant Amount: USD 150,000. Funding Period: February 1, 2023 – January 31, 2026.	Role: Wandera SO, PI.
23	Carnegie Corporation of New York and Makerere University. 2023.Skills enhancement for Departmental faculty and outreaches to Population agencies to promote the Department of Population Studies graduate programmes, at Makerere University. Grant Amount USD 7,000.	Olivia Nankinga, Stephen Ojiambo Wandera, Betty Kwagala, Peninah Agaba, Peter Kisaakye, Allen Kabagenyi, John Mushomi Atwebembeire, Patricia Ndugga (CECAP FELLOW).
26	The effectiveness of Information Education and Communication (IEC) interventions in reducing stigma among Sickle Cell Disease patients in Alebtong district, Northern Uganda” in partnership with Uganda Sickle Cell Rescue Foundation (USCRF) and the office of the District Health officer, Alebtong district, with support from the Government of Uganda through the Makerere University Research and Innovation Fund (MAK-RIF) designed and implemented the above project	Dr. Peninah Agaba & Dr. Olivia Nankinga
27	Integrating Refugees in to Economic Activities Through Mobile Entrepreneurship Skilling	Dr. Anthony Tibaingana
28	The Jean Monnet Policy Network NEAR-ER (Network for European and African Research and Education) is a thematic network under the Jean Monnet Actions funded by the Erasmus+ Programmeme. This network fosters collaboration between European and African higher education institutions to promote research, education, and policy debates on EU-Africa relations.	Dr. John A. Mushomi





Makerere signs MoU with Leading Universities in East Africa

It was an exciting day as Makerere University and Queen’s University Global signed a Memorandum of Understanding (MoU). Vice-Chancellor **Prof. Barnabas Nawangwe** and Vice-Provost for Global Engagement **Dr. Sandra den Otter**, represented Makerere University and Queen’s University Global respectively.

The MoU signifies a commitment to institutional collaboration and cooperation, leveraging each institution’s strengths, experience, technologies, methodologies, investments, opportunities, and resources to achieve shared and complementary goals. Specifically, the agreement encompasses: Collaborative academic and research initiatives, exchange programmes for undergraduate and postgraduate students, Staff mobility programmes, provision of briefing services for visitors from each institution, exchange of information and materials of mutual interest and additional forms

of cooperation that the institutions may jointly arrange. This partnership promises enhanced educational and research capabilities of both universities, fostering a mutually beneficial relationship.

Makerere University signs MoU with Queen’s University Global



In a historic move aimed at revolutionizing postgraduate education and research across East Africa, Makerere University has signed a Memorandum of Understanding with five prominent universities.

The agreement, formalized on May 24, 2024 brings together the University of Addis Ababa (AAU), the University of Rwanda (UR), Makerere University (Mak), Universidade Eduardo Mondlane (UEM), the University of Dar es

Salaam (UDSM) and Jönköping University, Sweden. While signing the MoU on behalf of Makerere University,

The Ag. Vice Chancellor, Prof. Umar Kakumba emphasized the importance of leveraging collective strengths to enhance academic excellence and research impact. He also expressed optimism that the collaboration will create new opportunities for faculty and students to engage in cutting-edge research and contribute to addressing pressing societal challenges.

CoBAMS partners with UMA to increase industrial research



At the MoU signing ceremony held at UMA on February 27, 2024, **Mr. Deo JB Kayemba**, the Chairman of UMA's Board, referenced the significant progress witnessed in countries like India, Japan, and South Korea, attributing it to the integration of research in supporting industrial advancement.

He emphasized the pivotal role of innovation in driving the manufacturing sector forward and underscored the necessity of collaboration in realizing research-led manufacturing.

Prof. Eria Hisali, the Principal of CoBAMS at Makerere University, expressed appreciation for the collaborative efforts and committed to operationalizing the MoU.

He stressed the importance of enhancing graduates' practical skills by involving industry experts in curriculum development and delivery, thus enriching students' knowledge base and fostering skills development.

Building Resilience: CoBAMS Leads Climate Finance Training for Finance Officials



In a significant step towards enhancing Uganda's resilience against the economic impacts of climate change, Makerere University has partnered with the Centre for Sustainable Finance at SOAS University of London and the World Resources Institute (WRI) to launch the Resilience and Adaptation Mainstreaming Programme (RAMP).

This initiative aims to equip officials from Uganda’s Ministry of Finance, Planning, and Economic Development (MoFPED) with the knowledge and tools needed to navigate the complex landscape of climate finance. RAMP is part of a broader international effort to strengthen the capacity of governments, particularly in vulnerable and low- to middle-income countries, to manage the

economic risks posed by climate change. Led by the WRI and supported by a network of 20 universities from Africa, Asia, and the West Indies, RAMP focuses on integrating climate adaptation strategies into the core operations of ministries of finance. This integration ensures that economic development priorities are aligned with climate adaptation needs, thereby enhancing access to adaptation finance.



International Collaboration Sparks Innovation in Statistical Methods at Makerere University.

Makerere University Kampala, Uganda, hosted a dynamic workshop on multivariate statistics and time series analysis. This event, held from June 11 to June 20, 2024, brought together academic staff and students from Makerere’s School of Statistics and Planning, alongside esteemed professors from the University of Padova, Italy. Funded by the Erasmus Mundus Plus programme, this workshop exemplifies the transformative potential of global partnerships in higher education.

The Erasmus programme, a pillar of the European Union’s educational initiatives for over 35 years, expanded its reach beyond Europe in 2015. Through the International Credit Mobility (ICM) scheme, Erasmus+ has enabled students

and staff from around the world to engage in enriching educational exchanges. Makerere University’s participation in the ERASMUS+ KA171 programme aligns seamlessly with its 2020-2030 Strategic Plan, aiming to foster a research-led, responsive university with a versatile workforce.

The collaboration between Makerere University and the University of Padova, rooted in a Memorandum of Understanding (MOU), underscores a commitment to academic exchange and innovation.

This partnership has already seen three graduate students from Makerere—two Master of Statistics students and one PhD candidate—embark on transformative research experiences at the University of Padova. Additionally, academic staff from Makerere have engaged in reciprocal visits, fostering a vibrant exchange of knowledge and expertise.

RESEARCH DISSEMINATION

EfD Takes Research Findings to Parliament: Advocates for Regulatory and Policy

Mak Environmental Economists Explore Uganda’s Albertine Oil Fields: Identifying Research and Collaboration Opportunities



A team of environmental economists from Makerere University recently visited the Albertine oil fields in Uganda to assess ongoing operations in terms of oil and gas exploration and uncover potential research and collaboration opportunities. The field visit conducted from 17th-20th July 2024 by the EfD –Mak centre in the districts of Hoima, Buliisa and Kikuube aimed to bridge the gap between academic research and practical applications, focusing on the interaction between oil extraction activities and local communities, environmental management and sustainable development.

EfD Hosts Policy Dialogue on Energy Efficiency and Reduced Emissions: Hoima Residents Call for Expanded Access to Clean Energy

Hoima, July 18, 2024 Stakeholders from Hoima’s local government, private sector, and civil society organizations have urged the government to expand access to clean energy sources like electricity and LPGs to facilitate the country’s transition from biomass and achieve its green growth strategy. Despite Uganda’s capacity to generate and export electricity to neighboring countries, access and affordability remain significant challenges for rural areas and a large portion of the population.



During a policy dialogue hosted by the EfD-Mak Center in Hoima, themed **“Energy Efficiency and Reduced Emissions in Uganda: Facts and Prospects,”** stakeholders highlighted the necessity of addressing these challenges. The event, part of the EfD Annual Meeting, gathered district local government officials, both technical and political, as well as academia, youth, and members of the private and civil society organizations.



Members of the academia and EfD research fellows on 25th April, 2024 held a co-creation workshop with representatives from government ministries, civil society organization and the private sector to generate a context-relevant Micro, Small and Medium Enterprise (MSMEs)-led model for supporting the transition to low-carbon ag-tech by smallholder farmers.

The EfD in collaboration with Partnership for Economic Policy (PEP) embarked on the study titled, “Clean Energy for Development: A Call for Action (CEDCA): Renewable Energy MSMEs operating to modernize agriculture in Sub-

Saharan Africa and South-East Asia: Barriers, opportunities, and implications for an inclusive low carbon transition”

The project funded by the International Development Research Centre (IDRC) is being implemented in four countries namely; Burkina Faso, Kenya, Uganda, and Vietnam.

The EfD-Uganda project team is composed of **Prof. Edward Bbaale**, who is also centre Director, **Dr. Aisha Nanyiti** Lecturer, School of Economics, **Dr. Florence Lwiza**, Lecturer, School of Agricultural Sciences and **Gyaviira Ssewankambo**, Junior Research Fellow.

2. COLLEGE OF AGRICULTURE AND ENVIRONMENTAL SCIENCES



CAES

Makerere University College of Agricultural and Environmental Sciences (CAES) is one of the 10 Constituent Colleges within Makerere University. Born from the amalgamation of the former Faculty of Agriculture, Faculty of Forestry and Nature Conservation, Makerere University Institute of Environment and Natural Resources, and the Department of Geography, CAES embodies a rich legacy of expertise and innovation. Comprising three dynamic schools—School of Agricultural Sciences (SAS), School of Food Technology, Nutrition and Bioengineering (SFTNB), and School of Forestry, Environmental and Geographical Sciences (SFECS)—CAES hosts a total of eight Departments. Additionally, the College boasts of two premier research institutes: Makerere University Agricultural Research Institute Kabanyolo (MUARIK) and Makerere University Biological Field Station (MUBFS). Augmenting its academic prowess, CAES operates 14 specialized centers, further enriched by facilities at Nyabyeya Forest College and Budongo Conservation Field Station, catering specifically for Forestry students. With a dedicated workforce of 400 employees, including 170 Academic staff, 140 of whom hold PhDs—with a commendable 20% representation of female faculty—CAES epitomizes academic excellence. Fostering a vibrant learning environment, CAES offers a diverse array of programmes, including 15 undergraduate programmes, 19 master’s programmes, 11 PhD programmes, and three postgraduate diplomas, spanning the domains of agriculture, food science, nutrition, forestry, environmental, and geographical sciences.

RESEARCH GRANTS

In 2024, the College of Agricultural and Environmental Sciences (CAES) continued to lead vital initiatives focused on driving sustainable change in Africa's agricultural and environmental sectors, particularly addressing the challenges of climate change

and the need for inclusive sustainable agri-food systems. The College has attracted a considerable number of research grants both from within the Country and from International agencies.

Table 15. Research projects supported by Development Partners

No.	Project Title	Principal Investigator
1	ARUA Water Centre of Excellence	Prof. Isa Kabenge
2	Implementation of Annual Agriculture and Market Support Household surveys in the framework of the WFP CSP UG 01	Prof. Bernard Bashaasha
3	Improving Pig Productivity and Incomes through an Environmentally Sustainable and Gender Inclusive Integrated Intervention Package	Dr Donald Kugonza Rugira
4	Genetic Characterization of Cattle Populations for Optimized Performance in African Ecosystems (OPTIBOV)	Dr Donald Kugonza Rugira
5	Capacity Building for Socially Just and Sustainable Energy Transitions. A joint Project between the Department of Geography, Geoinformatics and Climatic Sciences – Makerere University, NTNU - Norway, University of Juba - South Sudan and University of Nairobi - Kenya	Dr Frank Mugagga Co-PI
6	Foodland	Dr. Isa Kabenge
7	Locally-driven Codevelopment of Plantbased Value Chains Towards More Sustainable African Food System with Healthier Diets and Export Potential - InnoFood Africa	Assoc. Prof. Yusuf Byaruhanga
8	Achieving the SDGs in East African Drylands: drylands transform	Dr Denis Mpairwe
9	Improving Essential Oil Feedstocks and High-Value Products from Mentha SPP to Benefit Local Uganda Economies (MENUM)	Dr. Ivan Mukisa Muzira
10	Sustainable Off grid Solutions for Pharmacies & Hospitals in Africa – SoPHIA Project	Dr. Nicholas Kiggundu
11	Participatory analysis of the conventional agro-ecological intensification continuum for increased productivity and sustainability in the coffee-banana systems of the Mt Elgon region of Uganda.	Dr Jeninah Karungi
12	DESIRA (Development Smart Innovation through Research in Agriculture)	Prof. Samuel Kyamanywa
13	Refugee insect production for food and feed (REfiPRO)	Dr. Dorothy Nakimbugwe
14	LOCUST 4 INDUSTRY	Dr. Dorothy Nakimbugwe
15	CECAP PHASE I	Dr. Simon Kizito
16	The Agroforestry Paradox- Climate Clever Coffee (APCCO)	Dr. Susan B. Tumwebaze
17	Partnerships to Strengthen Graduate Training and Research Capacity for Developing Climate Smart Agrifood Systems in Central and East Africa (CSAS)	Dr. Susan B. Tumwebaze

Table 16. Research projects supported by the Government of Uganda through the Mak-RIF Round 5 Grant

No.	Project Title	PI
1	Development of a smart handheld soil moisture and nutrient sensor with an integrated fertilizer rate calculator for improved nutrient use efficiencies in farmers' fields in Uganda	Dr. Emmanuel Olupot
2	The Implication of Oil Exploration, Extraction, and Processing Industry on Agriculture and Livelihoods of Smallholder farmers in Uganda: The Case of the Albertine Region in Uganda	Dr Isaac Onziga Dramadri
3	Prioritisation of agricultural value chains for improvement of Uganda's trade competitiveness	Dr Florence Lwiza
4	Access to food in urban areas and its implications for the health system	Dr Sarah Akello
5	Design and Development of an Autonomous Precision Seed Rover: A Robotic Planter for Precision Farming (Seed Rover)	Dr Wanyama Joshua

Table 17. Research activities and innovations

No.	Project Title	PI
1	Exploring agritourism development as a unique product to enhance tourism sector competitiveness and product diversification in Uganda	Dr Francis Mugizi
2	Enhancing Disaster Preparedness and Risk Management at the Local Government Level in Uganda: A Comprehensive Research and Capacity-Building Initiative.	Henry Galiwango
3	Investigating <i>Listeria monocytogenes</i> Exposure among Pregnant Women of High Socio-Economic Status in Uganda: Food Sources and Safe Practices	Dr Aguttu Goretti
4	Developing a community-based sweetpotato seed system for increased productivity in Uganda	Dr Wasswa Peter
5	Developing a Competitive Local Chicken Value Chain in Teso Sub region	Zainah Nampijja
6	Towards Scaling and Commercialization of a Hybrid Solar Dyer: profiling critical stakeholders and exploring market prospects	Dr Ahamada Zziwa
7	Scaling up and commercialization of the sensorbased smart irrigation kit	Dr Ahamada Zziwa
8	RIF Technology Commercialization grant worth UGX75 million	Dr Simon Kizito



Ms. Nankya Jane, a farmer in Semuto Sub County, Nakaseke District, also beneficiary of the FoodLAND Project training irrigating her farm. She's grateful for the training received from the project.

COLLABORATION AND PARTNERSHIPS

Mak, Oregon State University Signs Cooperation Agreement.

Makerere University Vice Chancellor, **Prof. Barnabas Nawangwe** on 19th July 2024 endorsed the Memorandum of Understanding between Makerere University and Oregon State University to collaborate in different aspects of academics.

At Makerere, the MoU will be implemented by the Department of Forestry, Biodiversity and Tourism under the leadership of **Prof. Jim Ayorekire**. At Oregon State University, it will be implemented by the College of Forestry. Under the MoU, the two institutions have agreed

to mutually promote the following programmes, based on their respective academic and educational needs;

- i) Exchange of scholars and faculty staff,
- ii) Exchange of undergraduate and graduate students for research and study,
- iii) Exchange of academic information and materials, iv) Joint research activities and publications,
- v) Participation in conferences and academic meetings
- vi) Joint running of short-term academic programmes,
- vii) Resource mobilization in respect of areas of mutual interest, and any other areas which may promote their mutual interests.



The Vice Chancellor, **Prof. Barnabas Nawangwe** signing the MoU between Makerere University and Oregon State University The MoU signing ceremony was witnessed by members of staff from the College of Agricultural and Environmental Sciences (CAES) namely; **Dr Revocatus Twinomuhangi**, Dean, School of Forestry, Environmental, and Geographical Sciences (2nd L); **Dr Lawrence Orikiranza** Head, Department of Forestry, Biodiversity and Tourism (R); and **Prof. Jim Ayorekire** from the same department (2nd R). Oregon State University was represented by **Dr Ian E. Munanura**, an Associate Professor in the Department of Forest Ecosystems and Society, College of Forestry (R), and **Ms. Racheal Fahrenbach**, Manager International Programmes at the College of Forestry (3rd R).



Mak, Nanjing University of Information Science & Technology, Sign Collaboration Agreement

Makerere University in July 2024, signed a Memorandum of Understanding with Nanjing University of Information Science and Technology (NUIST) to formalize collaboration. Under the agreement, the two institutions intend to leverage each other's respective strengths, experience, technologies, methodologies, and resources to achieve shared and complementary goals. Areas of cooperation will include; i) Mobilization of resources in respect of areas of mutual interest, ii) Conducting research, publishing research findings, and promoting outreach to the

relevant state and non-state actors, iii) Exchanging academic and technical information including transfer of technology between the two institutions within acceptable institutional structures and policies, iv) Staff and student exchanges, v) Strengthening networking and identifying partnership opportunities between the two institutions/parties, and vi) Organizing and participating in joint academic activities such as seminars, workshops and conferences in respect of areas of mutual interest. The two institutions are also in negotiations to establish an African climate school to strengthen research and training in atmospheric science/ meteorology.

Left: The Representative of Makerere University Vice Chancellor, Dr Revocatus Twinomuhangi, and the Vice President of NUIST signing the MoU. Right: The representative of Makerere University Vice Chancellor, also Dean SFECS, Dr Revocatus Twinomuhangi, handing over a signed MoU to the Vice President of NUIST.



Makerere University renewed its partnership with the CGIAR to enhance equitable agrifood systems

Makerere University and the CGIAR, in August 2024, renewed their Memorandum of Understanding (MoU) to accelerate efforts to create more inclusive agricultural systems in Africa.

With funding of US\$99,935 through the CGIAR GENDER Impact Platform, Makerere University will implement the activities through the Gender-responsive Researchers Equipped

for Agricultural Transformation (GREAT) Project, co-implemented by the College of Agricultural and Environmental Sciences and the School of Women and Gender Studies. This renewed partnership focuses on developing and enhancing postgraduate training and research in gender and agrifood systems at Makerere University. This is in line with the broader aim of nurturing a cadre of gender-responsive agricultural researchers (both social and biophysical scientists), equipped to contribute to inclusive and effective agricultural systems that address the priorities of both women and men in Sub-Saharan Africa and beyond.

RESEARCH DISSEMINATION

FoodLAND Project Nakaseke and Kamuli District farmers sensitized on modern agricultural practices

Farmers in Nakaseke and Kamuli Districts are indebted for the support and training received from the FoodLAND Project. Although many had been engaged in the activity, they lacked knowledge and skills of modern farming.

Connected to Food and Local, Agricultural, and Nutritional Diversity (FoodLAND) through VEDCO, a non-governmental and not for profit agricultural organization, the farmers have acquired skills on value addition, precision irrigation/fertigation, smart storage systems, gardening and hydroponics systems, biodegradable mulching, precision crop protection systems, precision harvesting systems and agro-ecological intensification practices.

On 16th July 2024, the project team held a dissemination

workshop for Nakaseke District leaders and farmers to sensitize them on different aspects including the research findings and recommendations for improved farming practices. Launched in 2020 and funded by the European Commission within the Horizon 2020 programme, the project aims to develop, implement and validate innovative, scalable, and sustainable technologies to support the nutrition performance of local food systems in Africa, while strengthening agro-biodiversity and food diversity as well as diversity of healthy diets.

The project has registered numerous achievements including the development of nutrient enhanced food products, establishment of infrastructure at MUARIK for research and training on fertigation and precision irrigation, development of technology for smart cold storage of perishable foods such as fruits and vegetables, development of technology for rodent control in



Participants including leaders of farmer groups in Nakaseke and District officials at the training venue at Butalangu District Headquarters. Right: Ms. Nankya Jane, a farmer in Semuto Sub County, Nakaseke District, also beneficiary of the FoodLAND Project training irrigating her farm. She's grateful for the training received from the project.

Mak Climate Conference

The International Climate Change Conference held at Makerere University on 25th-26th July 2024 sparked significant discussions on the need to tailor global climate resilience and adaptation strategies to fit the African context. The conference, themed, “**Grounding Climate Change in East Africa,**” brought together over 100 participants from eight universities in East Africa and the diaspora encompassing natural scientists, social scientists, humanities, medical, law and art scholars as well as Government ministries and agencies, the private sector and civil society organizations to debate and propose solutions for the pressing climate issues facing East Africa. Funded by University of

Cambridge in the US, the two day conference was convened by Makerere University’s Department of Environmental Management in conjunction with University of Cambridge. The conference underscored the urgent need to reframe global climate strategies to better suit African realities. Integrating local knowledge, mainstreaming climate issues across disciplines, enhancing collaboration between academia and practitioners, and valuing cultural perspectives provide a comprehensive roadmap for effective climate action in East Africa. The participants called for immediate and sustained efforts to implement these resolutions to address the climate crisis effectively.



Participants at the workshop venue at Makerere University

3rd GORILLA Conference Deliberates Strategies for Realizing the Global Development Agenda 2030

Held on 4th-6th December 2024 at Hotel Africana in Kampala, the 3rd International Conference on Geographical Science for Resilient Communities, Ecosystems and Livelihoods under Global Environmental Change (GORILLA), attended by researchers and policy makers from 50 countries, focused on discussing strategies for realizing the Global Development Agenda 2030. Six years to the deadline for the realization of the Global Development Agenda, only 17% of the Sustainable Development Goals (SDGs) targets are on track to be achieved.

Hosted by the College of Agricultural and Environmental Sciences (CAES), Makerere University, the conference specifically sought to provide a platform for conceptual, empirical, and theoretical conversations to establish how science can help in bridging gaps and addressing sustainable development deficits. The Conference featured twelve (12) themes namely:

1). Geographies of Climate Change, Climate Justice and Just Transition, Spaces and patterns;

2). Biodiversity Informatics, Sustainable Ecosystems, Landscapes and People;
3). Green Growth and Transitions to Land Degradation Neutrality and Net Zero;
4). Water Governance and Transitions to Land Degradation Neutrality and Net Zero;
5). Interconnected Geo-hazards and Disasters in a Changing World;
6). Polycrisis: Migration, Displacement, Conflict and Humanitarianism;
7). The changing Geography of Agrifood Systems; 8) Nature Best solutions for inclusive and equitable development;
9). Emerging and novel technologies for societal resilience;
10). Sustainable Cities and Urban Systems in SSA;
11). Geographies of Energy and Energy Transitions; and
12). Environment and Health. Coordinated by Prof. Yazidhi Bamutaze, Deputy Principal, CAES and Dr. Jerome Ssebaduka Lugimira from the National Environment Management Authority (NEMA), the conference was presided over by the State Minister for Environment, Hon. Beatrice Atim Anywar, and graced by His Royal Highness Jude Mike Mudoma, the Umukhukha of Bamasaba Cultural Institution, Inzu Ya Masaba.

Left: The Minister of State for Environment, Hon. Beatrice Atim Anywar, together with the Umukhukha Jude Mike Mudoma (2nd R), the Ag. Vice Chancellor, Makerere University, Prof. Buyinza Mukadasi (L), the Chair of the Organizing Committee also Deputy Principal, CAES, Prof. Yazidhi Bamutaze (3rd R), and other participants after the opening ceremony of the Conference. Right: Mr. Ronald Kaggwa, Assoc. Prof. Justine Namaalwa, Ms. Pauline Nantongo Kalunda, Dr. Harriet Rachel Kagoya and Mr. Moses Nadiope in a panel discussion following a keynote address on Remote Sensing of Biodiversity in Africa.



Participants at the opening ceremony of the 3rd GORILLA Conference on 4th December 2024.

CPUG Project Meeting

On 11 June 2024, a consortium meeting of “Clean and Prosperous Uganda - Fecal Sludge and Solid Waste Management for Improved Livelihoods (CPUG)”, a 4-years project funded by the Austrian Development Cooperation through its APPEAR programme (Austrian Partnership Programme in Higher Education and Research for Development), took place at Makerere University’s School of Agricultural Sciences.

The meeting was convened by representatives of all four project partners: Makerere University coordinated by **Assoc. Prof. Jeninah Karungi**, Vienna University of Technology coordinated by Dr. Therese Schwarzböck, Uganda Red Cross Society (URCS) coordinated by Mr. James Mundrugo, and Mbarara University of Science and Technology coordinated by Mr. Elias Oyesigye.

The meeting covered progress of the project within the first two years, highlighting its successes, and discussing the outlook of the remaining two years. Within the first two years, investigations on different fecal sludge utilization processes, such as co-composting, anaerobic digestion, pyrolysis, and black soldier fly composting were conducted. Fecal sludge product performance was assessed via field experimentation on test crops. Further, socioeconomic aspects of fecal sludge utilization were investigated (e.g. marketability and willingness to pay amongst farmers).

A closer look was given to two municipal solid waste composting plants where the composting process and the product quality were assessed to develop possible improvements. Composting residues were investigated to reveal usability as fuel for the industry or work on recycling options.



Right: Prof. Gorette Nabanoga, Principal CAES, together with Dr. Katja Kerschbaumer, Head of Office from the Austrian Development Agency’s office in Kampala, and Dr. Brian Kanaahe, Director Disaster Risk Management at the Uganda Red Cross Society, during the meeting



Makerere University-IOWA State University Community Transformative initiatives

Makerere University and Iowa State University have had a longstanding collaboration spanning 20 years in which they are transforming communities in Kamuli District through a range of livelihood-enhancing programmes in the areas of agriculture, education, nutrition and environmental conservation.

Through this collaboration there has been increased school retention rates, child and maternal nutrition, enhancing household incomes through livestock and crop enterprises. Makerere University thanked Professor Gail Nonnecke of Iowa State University for continuously mobilizing funds for varied initiatives.

Skilling Agro-processors on Quality Standards

Agro-processing is a key component of Uganda’s manufacturing sector accounting for almost 70% of total manufacturing output while manufacturing itself has accounted for approximately 8% of GDP over the last decade (Uganda Bureau of Statistics). However, many Micro, Small, and Medium Enterprises (MSMEs) in this sector face significant challenges in meeting quality standards, accessing markets, and adopting best practices. To contribute towards

the improvement of the sector in Uganda, the School of Food Technology, Nutrition and Bio-engineering (SFTNB), Makerere University, through a project titled; “Empowerment of the Agro-Processing Industry to meet the Quantity and Quality for Local and Export Market (EAPI Phase II)” has embarked on a transformative journey to empower agro-processors through practical skills training, mentorship, and support. EAPI is a multi-year project conceptualized under the guiding principles of Makerere University Strategic Plan, which emphasizes research excellence, community engagement, and innovation.

It is funded by the Government of Uganda through Makerere University Research and Innovations Fund (Mak-RIF). On 9th April 2024, the School of Food Technology, Nutrition and Bio-engineering held a workshop to disseminate the project outputs and to share insights, best practices and success stories from the trained processors and students. The event held at Makerere University featured a panel discussion involving agro-processors as well as representatives from line departments who shared experiences and the challenges affecting the sector. Key amongst the challenges highlighted was the bureaucratic process of acquiring certification and the heavy taxes imposed on the processors.



Left: CAES Principal touring the Makerere University Food Technology and Business Incubation Centre. Right: One of the Refractance Window drying technologies developed by staff at the Department of Food Technology and Nutrition at CAES.

3. COLLEGE OF ENGINEERING, DESIGN, ART & TECHNOLOGY

CEDAT



The College of Engineering, Design, Art and Technology (CEDAT) is a constituent college of Makerere University as provided in Section 29 of the Universities and Other Tertiary Institutions Act as amended in 2006. It comprises former Faculties of Technology and the Margaret Trowel School of Industrial and Fine Arts (MTSIFA). It has been operational for 12 years. The College has in place infrastructure relevant for the teaching and learning as well as practical exposures to the students both graduate and under graduate. These include research laboratories, computer laboratories and lecture rooms in addition to the research centres. At MTSIFA for instance, the College hosts the Institute of Heritage Conservation and Restoration, which is renowned for research in Art. However, the infrastructure is not adequate in terms of number of classrooms and condition of maintenance. Many laboratories have obsolete equipment. Office space is far from being adequate as many staff have to share. There is, therefore, urgent need to improve on the teaching infrastructure.

RESEARCH GRANTS

1. Assessing the Feasibility of Utilizing Nano Sugarcane Bagasse Ash as a Supplementary Cementitious Material in Cement-Based Materials. Funded by Research and Innovation Fund (RIF) Makerere University, May 2024.
2. Carbon Offsetting Measures for Traditional Fired Clay Brick and Mudbrick Production in Uganda. Funded by Research and Innovation Fund (RIF) Makerere University, Jan 2024.
3. In 2024, a new grant of US\$ 130,000 for the project, Estimation of Pathogen Hazards from Sanitation Technologies in Africa was signed. This project is funded by the Bill and Melinda Gates Foundation through the University of North Carolina at Chapel Hill (USA). The project started in January 2024 and is expected to end on 31 December 2025.
4. In 2024, the Water, Behavior Change and Environmental Sanitation: Sustainable Solutions to Research, Knowledge and Professionalization (WABES) – Integrated Water, Sanitation and Solid Waste Services (INTEGRATE), received the second tranche payment of US\$ 59,986. The activities were implemented through 2024, which marked the transition from the second year to the third year of the project.
5. Dr. Dorah Kasozi from DIIAD Applied for Mak Rif funding Round 6: 2024 on a research project, “Revitalizing Indigenous Knowledge and Sustainable Design: Enhancing Karamojong Artisanry through Academic-Community Collaboration in Product Design Innovations for Uganda’s Industrial Development”.
6. Water, Behavior Change and Environmental Sanitation: Sustainable Solutions to Research, Knowledge and Professionalization (WABES) – Integrated Water, Sanitation and Solid Waste Services (INTEGRATE). It is funded by the Swiss Agency for Development and Cooperation (SDC), through Eawag (Swiss Federal Institute of Aquatic Science and Technology), based in Dübendorf, Switzerland.
7. Estimation of Pathogen Hazards from Sanitation Technologies in Africa. This project is funded by the Bill and Melinda Gates Foundation through the University of North Carolina at Chapel Hill (USA). The project started in January 2024 and is expected to end on 31 December 2025.
8. Beyond the networked city: Building innovative delivery systems for water, sanitation and energy in urban Africa (Ref: R101355-10186440) supported by the UK Economic and Social Research Council (Grant no: ET/T007656/1) awarded under the Global Challenges Research Fund. The project started in April 2020 and ended on 28 June 2024.
9. Collaborative Research between Makerere University-CEDAT and Kampala Capital City Authority (KCCA) to establish and share scalable models and Technologies for enhancing city wide integration sanitation. The project started in February 2020 and will be ending on 31st December 2025. The project supported by the City-Wide Integration Sanitation Project under KCCA and has a budget of USD 150,000.
10. Development of Technology for Application of Iron Oxide Nanoparticles in Wastewater and Drinking Water Treatment. The project is funded by the Government of Uganda through the Science, Technology, and Innovation Secretariat, Office of the President (STI-OP) (STI-OP/2023/INFRASTRUCTURE INNOVATION/05).
11. “Collaboration for Active Mobility in Africa CAMA” under the programme “Partnerships for sustainable solutions in sub-Saharan Africa” and ends in May 2025. The consortium constitutes the Karlsruhe University of Applied Sciences (HKA) and Universität-Kassel (Germany), Makerere University (MAK) (Kampala Uganda), University of Nairobi (UoN) (Nairobi Kenya), and Mekelle University (MU) (Mekelle Ethiopia) and is funded by both the German Academic Exchange Service (DAAD) and the Federal Ministry of Education and Research (BMBF). Among others, the project aims to provide tailor-made exchange and training programmes between the partner universities in addition to capturing the requirements of the pedestrians and cyclists, facilitating the development and uptake of tailor-made solutions, promoting active mobility, utilising learning alliances and preparing real-life experiments (living labs) and test innovative solutions.
12. Reconstruction of an Extreme Flooding Event on River Katonga bridge crossing. 2023–2024 Makerere University Research and Innovation Fund (MakRIF) Award.
13. Facilitating early adoption of blue-green infrastructure for urban water system adaptation in East Africa, Lund University, Sweden, Makerere University and University of Rwanda. ARUA-U21 Early Career Research Collaboration Award.

RESEARCH DISSEMINATION

Exhibitions

- **Nature’s Assertion:** Circularity shapes Versatility – The SUS Basketry Ware EXHIBITION: Nakisanze Sarah in Collaboration with Easy Afric Designs at the Xenson Art Space from 24th August to 22nd Sept 2024, Instagram: xensonartspace & easyafricdesigns



Opening:
24th August,
3:00PM

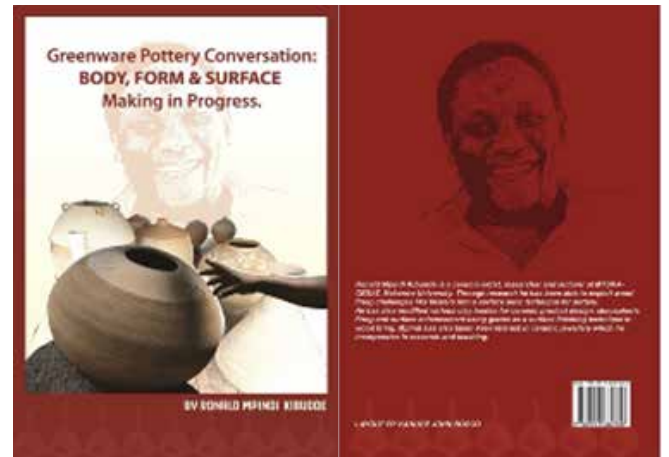
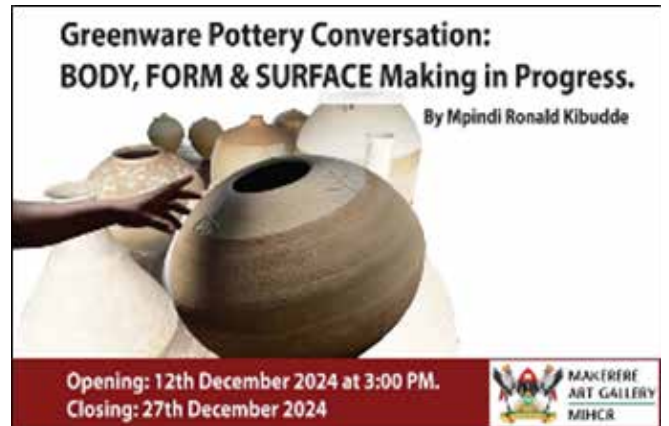
NAKISANZE SARAH
IN COLLABORATION WITH
EASY AFRIC DESIGNS

Dates:
24th August -
22nd September
2024

Nature’s Assertion:
Circularity Shapes Versatility -
The “SUS” Barkcloth Basketry ware

 Xenson Art space | info@xensonartspace.com
+256756276275 | www.xensonartspace.com

- Greenware Pottery Conversation: BODY, Form & SURFACE Making in Progress a publication with an ISBN: 978-9913-682-80-0. An exhibition by Ronald Mpindi Kibudde, that opened 12th–27th December 2024 and later an extension to 30th January 2025. Banner for the show



Different But One 27, Academic staff exhibition in 2024 at the Makerere Institute of Heritage Conservation and Restoration (IHCR) MTSIFA-Makerere University. Showcased Jewelry artwork.

Policy Briefs

1. Incorporating climate change in transport asset planning using HDM-4 for World Bank group, 2024. Climate resilience, transport planning.
2. Policy briefs –On Sustainable Financing for Land Registration Services. Prepared on behalf of GIZ Uganda and submitted to the Ministry of Lands, Housing, and Urban Development – by Dr. Ronald Ssendendo.

Working Paper Series

- Developing manuscript on Waste to Wealth: A Case of Kiteezi Landfill site as a source of new Raw Materials for jewelry production for Community Empowerment in Uganda, Dr. Dorah Kasozi.

- Revitalizing Indigenous Knowledge and Sustainable Design: Enhancing Karamojong Artisanry through Academic-Community Collaboration in Product Design Innovations for Uganda’s Industrial Development. Dr. Dorah Kasozi.
- Developing manuscript on Jewelry Design through an Academic/Community Collaboration: A Sustainable Solution for Women and Youth Empowerment, Dr. Dorah Kasozi.
- “Revitalizing Indigenous Knowledge and Sustainable Design: Enhancing Karamojong Artisanry through Academic-Community Collaboration in Product Design Innovations for Uganda’s Industrial Development.” By the research team. By Ms. Esther Ndagire.

Innovations and Other Scientific Discoveries

This is a work in progress:

1. Development of the dried urine fertilizer.
2. Innovative wastewater and drinking water treatment systems utilizing iron oxide nanoparticles.

COLLABORATIONS AND PARTNERSHIPS

- Public lectures and talks –Former students and other professionals came in as guest lecturers in some of the course units. E.g. Our former student and land officer with UNHabitat Ms. Evelyn Ajambo gave a lecture to our 4th year students on A methodology for re-tracing parcel boundaries using Fit for Purpose (FFP) Land Administration Techniques in Uganda
- From the Civil and Environmental Engineering Department, the following were undertaken. On the 5th March 2024, A/Prof. Charles B. Niwagaba attended the 1st General Assembly of the EAC Research and Development Working Group (RDWG); and on the 6 – 8th March 2024, he attended the 3rd Science, Technology and Innovations Conference of the EASTECO in Nairobi, Kenya.
- On 28th March 2024, A/Prof. Charles B. Niwagaba became a full member of the International Water Association (IWA), and Editor of Water Science and Technology Journal.
- On the 2nd February 2024, A/Prof. Charles B. Niwagaba and Dr. Robinah N. Kulabako received the Vice Chancellors’ Research Excellence Award as a result of their outstanding contribution to Scholarly publications at Makerere University
- Between the 30th of September and 1st October 2024, A/Prof. Charles B. Niwagaba attended the 1st Executive Committee Meeting of the Regional Research and Development Working Group, in Dar es Salaam, Tanzania.
- On the 18th November 2024, A/Prof Charles Niwagaba was a panel discussant on the topic “Research as a catalyst for disruptive technology and innovations to achieve SDG 6 in Africa” at the 94th Meeting of AfWASA Strategic and Technological Council (STC).
- On the 19th December 2024, A/Prof. Charles B. Niwagaba was invited to serve on the Programmeme Committee for the upcoming 2025 IWA Water and Development Congress and Exhibition Congress in Bangkok, Thailand, from 8-12 December.
- In November 2024, Dr.Eng. Jotham Ivan Sempewo was an opponent at Makerere University Business School PhD defense titled “Governance, Urbanization, Financial Development and Modern Renewable Energy Consumption in East Africa.”
- In 2024, Dr. Robinah N Kulabako examined Masters’ theses (3 No. as External Examiner) for Uganda Christian University, Mukono.
- In 2024, Dr. Robinah N Kulabako was an examiner panel member for PhD thesis defenses entitled “Utilization of Technological Innovations in piped water services: A case of Prepayment System in urban poor settings in Kampala, Uganda” and “Urban Micro-entrepreneurship and empowerment of women in Kampala central division, Uganda” in the College of Humanities and Social Sciences, Makerere University.
- Dr Seith Mugume was successfully selected and participated in the scoping meeting for the Inter-Governmental Panel on Climate Change (IPCC), Seventh Assessment Report (AR7) under Working Group 1 – The Physical Science Basis, held in Kuala Lumpur, Malaysia, from 9 to 13 December 2024.



Ms. Evelyn Ajambo giving a guest Lecturer to 4th Year Students in October 2024

- In June 2024, Dr Seith Mugume attended the 16th IWA/IAHR International Conference on Urban Drainage (ICUD) in Delft, the Netherlands, and was elected as Executive Member of the IAHR/IWA Joint Committee on Urban Drainage (JCUD) for 3 years.
- Dr. Seith Mugume organized a lecture series titled “Fluid Mechanics at Small Scales: Dynamic Relative Permeability in Two-Phase Flows in Porous Media – Recent Progress and Open Research Problems.” Under the ERASMUS +ICM staff mobility exchange programme between Makerere University, Department of Civil and Environmental Engineering, and the University of West Attica Greece, Department of Civil Engineering. The lectures were delivered by Dr. Marios Valavanidis Professor of Hydraulics and Flow in Porous Media from the University of West Attica Greece.
- In July 2024, Dr. Seith Mugume was appointed to serve on the National Artificial Intelligence Task Force by the Uganda Communications Commission.

Dr. Mugume has successfully contributed to the development of a concept paper titled “Artificial Intelligence Development and Adoption for Uganda.”

- Dr. Sarah Nalisanze (MITSIFA) Undertook Capacity Development for Socio-Economic Sustainability of Ngalo Women’s Community Handicraft Enterprise: Backcloth Basketry. 1- Handicraft Knowledge & Skills Module Development in collaboration with CraftAnsa (Jan - March 2024), 2. Handicraft Knowledge & Skills development Training with CraftAnsa (May-August 2024) Instagram: Craftansaead & easyafricdesigns.
- Dr. Ronald Mpindi (MTSIFA) Re-constructed a wood kiln at the Margaret Trowel School of Industrial and Fine Art, Makerere University and it will soon start to be used by the students. Also with this kiln, there was an experimental insulating brick body that was made and we are yet to see its ability to stand the high temperatures and the whole firing session.



L_R: Scaling the kiln design on the new floor, Preparing for the experimental insulating material and also the bricked session, to a completed kiln

- NORPART project Common Ground (2022-2027). Project member from Makerere University and also the Master's student application coordinator for full scholarships, and half-year and workshop exchanges to the University of Bergen, Norway. <https://kmd.uib.no/en/Calendar/news/exchange-with-makerere>.
- Partnership as a member of the 7th HERS-EA Leadership Academy. Academy July 19th – July 26th 2024 Gulu University, Gulu, Uganda.
- Partnering with Karamoja Private Sector Development Centre-Lira District Uganda.
- Collaborating with women jewelry makers of Acholi Quarters in Kireka Banda (the majority of these women migrated from Northern Uganda to escape the LRA war insurgency) this project holds training workshops to train communities in Jewelry Design. In the end, Jewelry has become a voice of Women's empowerment and social change.
- Official research tour of Pagirinya Refugee Settlement in Adjumani District in July 2024 to identify and develop collaborative research ideas from issues that affect the refugee settlement.
- Community/Research engagement with Wawotto Kacel, an Arts and Crafts organization located in Gulu-Northern Uganda. This project was done with women who settled in Gulu after the Lord's Resistance Army guerrilla war. The majority of these women are living with HIV and engage in several arts and crafts activities including jewelry making.
- Member of the National Research Foundation (NRF) postgraduate research programme, Geopolitics and the Arts of Africa.
- Disability Awareness Week seminar at Rhodes University titled, navigating the world of work while differently-abled which was scheduled on 6th September, 2024.
- Weekly writing and reading sessions (pomodoros) with colleagues and my supervisor at least once a week (every Monday) as it is a practice among the team members in the SARCHI programme.
- Weekly seminars for postgraduates at the Fine Art department where we share our research projects with fellow research mates and lecturers every Wednesday as it is a routine at our department.
- Public lectures and talks. Latecomer development and value capture in the emerging medical cannabis global value chain: the case of South Africa.
- Staff, Dr. Dorah Kasozi and Dr. Namaganda Jane attended The 7th HERS –EA Women's Leadership training. HERS –EA Seventh Academy July 19th – 26th, 2024 at Gulu University. Reimagining Women Leadership in Higher Education for the 21st Century.
- Makerere University and Durban University of Technology Research Collaboration Project, 2023-2028 led by Dr. Nathan Kibwami. The objective is to pursue collaborative academia and industry research as individuals or Colleges, Schools, Institutes, departments, and directorates.
- The CEDP programme – Implemented under the MoLHUD, the Competitive Enterprise Development Programme (CEDP) supported by the World Bank has been supporting the implementation of the Masters in Land Management since its admission of the 1st cohort in 2022/23 academic year.



At Wawotto Kacel, an Arts and Crafts organization located in Gulu City

4. COLLEGE OF COMPUTING AND INFORMATION SCIENCES



CoCIS

The College of Computing and Information Sciences (CoCIS) has made significant steps in research output, activities, and infrastructure, positioning itself as a key player in the field of computing and information sciences. CoCIS has consistently produced high-quality research, reflected in numerous publications in reputable journals and conferences. Faculty and students engage in leading-edge research areas such as artificial intelligence, data science, cybersecurity, human-computer interaction, and software engineering. Collaborative projects that involve interdisciplinary efforts have led to innovative solutions addressing real-world challenges, bolstering the college's reputation for excellence. The college organizes a variety of research activities, including workshops, seminars, and conferences, fostering an environment that encourages knowledge sharing and collaboration. Regular guest lectures from industry experts and renowned academics provide students and faculty with insights into the latest trends and advancements in technology. Additionally, CoCIS actively encourages student participation in research by facilitating access to mentorship and funding opportunities for undergraduate and graduate students. CoCIS boasts modern infrastructure equipped with advanced laboratories, high-performance computing facilities, and state-of-the-art software tools. We have four new labs inclusive, the AI lab, the Health lab, the IOTra lab, and AR lab. These resources support both research and teaching, allowing for hands-on learning experiences that are essential in a rapidly evolving field. The college has also established partnerships with industry stakeholders, enhancing its capability to conduct applied research and providing students with invaluable opportunities for internships and employment. Overall, CoCIS's commitment to research excellence, combined with vigorous activities and a strong infrastructure, emphasizes its role as a leader in the computing and information sciences domain, cultivating a vibrant academic community dedicated to innovation and exploration.

RESEARCH GRANTS

Table 18. List of Research Grants

PROJECT	PI NAME
Managing Hub for Artificial Intelligence for Sexual and Reproductive Health in Africa: AI4MSRH Hub	Assoc. Prof. Engineer bainomugisha
Clean air for healthier cities: Scaling up participatory and collaborative monitoring, modelling, and evidence-informed advocacy solutions for improved air quality management in East and West Africa	ASSOC. PROF. ENGINEER BAINOMUGISHA
Scaling up AirQo to African cities	Assoc. Prof. Engineer Bainomugisha
Crane Cloud	Assoc. Prof. Engineer Bainomugisha
Establishing DeepMind AI scholarships at Makerere University	Assoc. Prof. Engineer Bainomugisha
AirQount: “AirQount: autonomous vehicle emissions estimation system for low-resource cities”.	Assoc. Prof. Engineer Bainomugisha
GOOGLE RESEARCH AWARDS	Assoc. Prof. Engineer Bainomugisha
“Privacy-preserving synthetic data generation for mobile money transactions for studying patterns of financial fraud and financial exclusion -- DCOMoMTSim”	Assoc. Prof. Engineer Bainomugisha
Leveraging Data Science Applications to Improve Children’s Environmental Health in Sub Saharan Africa (DICE)	Assoc. Prof. Engineer Bainomugisha
Mobile ELISA and syndromic datasets	Mutembesa Daniel
The F.A.T.E of AI in African agriculture. A case study of AI algorithms used to assess creditworthiness for digital agro-credit to smallholder farmers in Uganda.	Mutembesa Daniel
GOOGLE AFRICA PHD FELLOWSHIP	Mutembesa Daniel
BROAD AVIAN SPECIES SURVEILLANCE WITH INTELLIGENT SENSING	Magumba Mark
BENCHMARKING AUTOMATIC SPEECH RECOGNITION MODELS FOR AFRICAN LANGUAGES	Dr. Joyce Nakatumba Nabende

PROJECT	PI NAME
TWAS-UNESCO (SG-NAPI)	Dr. Joyce Nakatumba Nabende
RTB BREEDING: ACONSOLIDATED ENVIRONMENT	Dr. Joyce Nakatumba Nabende
RTB Cassava Breeding	Dr. Joyce Nakatumba Nabende
Applied Human Machine Intelligence in East Africa (AHUMAIN)	Dr. Joyce Nakatumba Nabende
Understanding Gender Biases in Building Automatic Speech Recognition Systems in the African Context (GRAIN)	Dr. Joyce Nakatumba Nabende
Project Amplify - Improving AI through Community Based Feedback	Dr. Joyce Nakatumba Nabende
EXTRAPOLATING COUNTS FROM OPEN BUILDINGS WITH SENTINEL-2-GOOGLE RESEARCH COLLABS AFRICA	Sanya Rahman
Analyzing ChatGPT for cross-lingual localized and Targeted Agricultural Advisory for smallholder farmers in sub-saharan Africa	Dr. Joyce Nakatumba Nabende
WAXAL PROJECT PARTNERSHIP (GOOGLE VOICES)	Dr. Joyce Nakatumba Nabende
OCULAR: An AI Automated Mobile Microscopic Diagnosis of Malaria, Cancer & Tuberculosis	Dr. Rose Nakasi
HoliCare	Prof. Oyana Tonny
PATHWAYS TO CHANGE: TOWARDS GENDER JUSTICE IN STEM RESEARCH IN AFRICA (GeJuSTA)	Ms. Ssozi Fiona Catherine
ICT LABS FOR THE PATHOGEN ECONOMY	Dr. Joyce Nakatumba Nabende
AFRETECH	Assoc. Prof. Engineer Bainomugisha
EPILEPSY	Dr. Daudi Jjingo
Adaptive Environmental Monitoring Network for East Africa [AdEMNEA]	Dr. Julianne Sansa Otim

Project	PI Name
NEXT GENERATION-CASSAVA	Dr. Joyce Nakatumba Nabende
Improving machine translation for informal usage of Ugandan languages An audit for tech innovations and Tech Eco system in Uganda	Dr Peter Nabende
	Dr. Namatovu Hasifah
Enhancing Groundnuts Value Chain Information Management Using the SUFACE Model for Improved Stakeholder Decision Making.	Dr. Drake Patrick Mirembe
Data Science Without Borders	Dr. Joyce Nakatumba Nabende
RTB Breeding: Aconsolidated Investment (Cassava)	Dr, Joyce Nakatumba Nabende
RTB Breeding: Aconsolidated Investment (Sweetptatoes)	Dr, Joyce Nakatumba Nabende
RTB Breeding: Aconsolidated Investment (National Agricultural Research Organisation -NARO)	Dr, Joyce Nakatumba Nabende
Makerere University Artificial Intelligence for Development Research Lab	Dr. Joyce Nakatumba Nabende
AI4D - FDCO Innovation: Scaling and sustaining AI solutions to improve sexual, reproductive and mental health in Sub Saharan Africa	Assoc. Prof. Engineer Bainomugisha

SCIENTIFIC INNOVATIONS

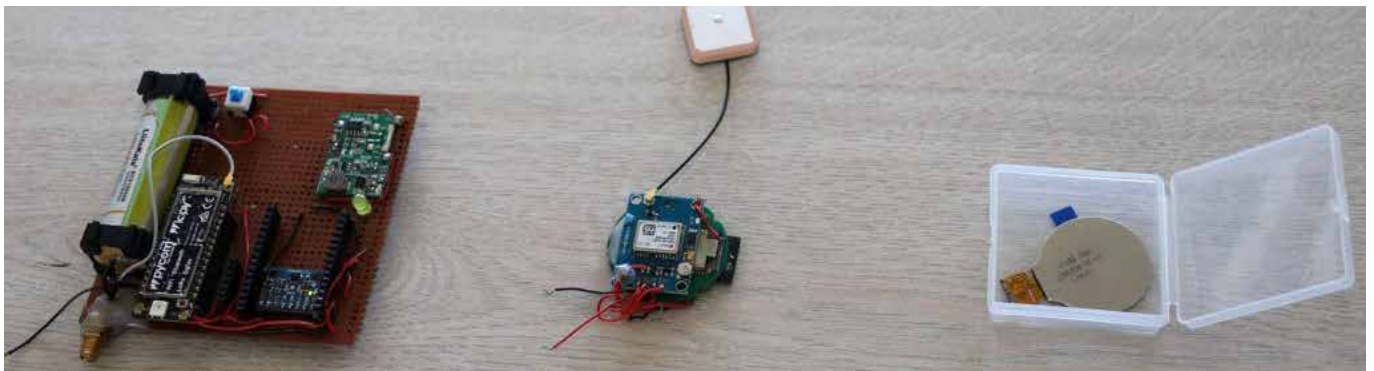
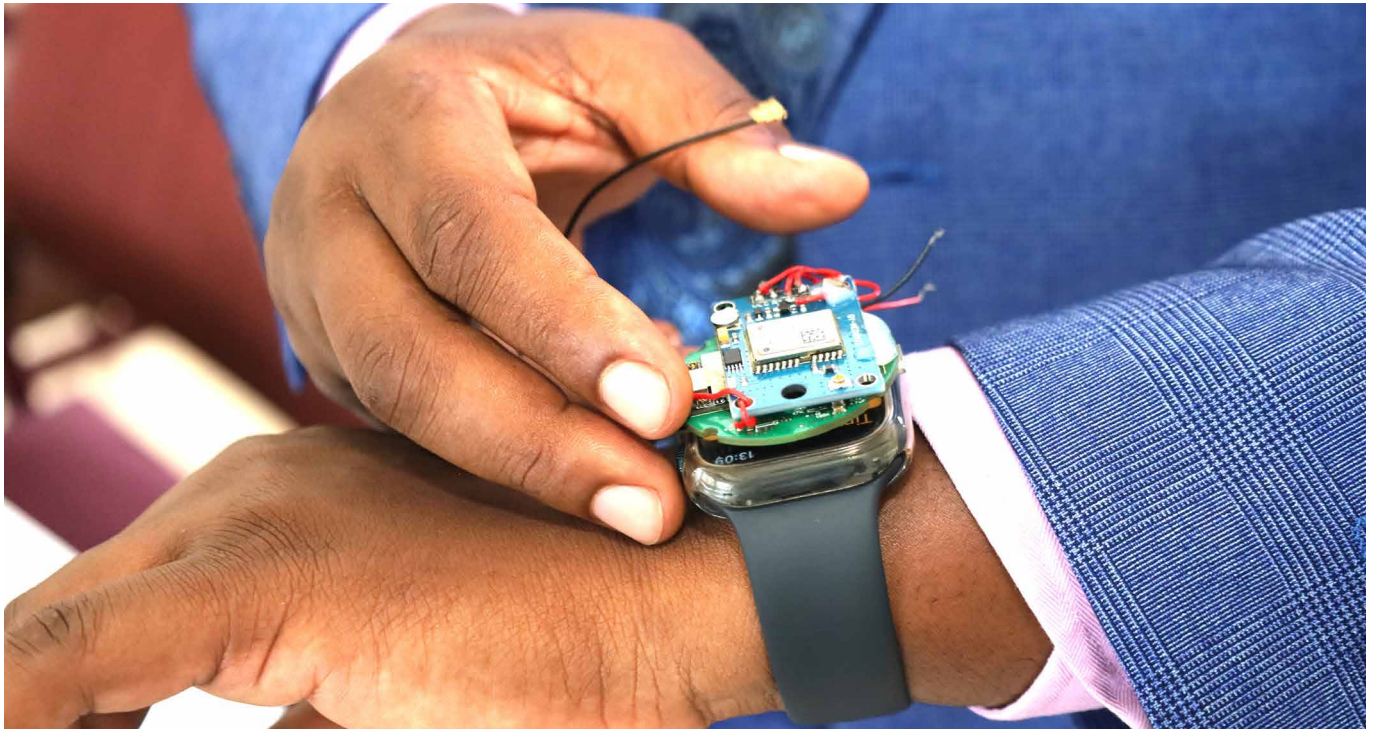
The College boasts of high impact research and Innovations. Staff and students continually engage in activities required to keep their products competitive. With this high impact research and innovation, we hope to eventually drive Uganda’s development agenda.

Device to Monitor the Elderly with Dementia & Cognitive Impairment for Emergency Response

Researchers led by a second-year PhD student Paddy Junior Asiimwe designed a device to monitor elderly people with dementia and cognitive impairment in rural Uganda. The device, wearable by the elderly (on the hand like a wrist watch or placed in the pocket), will monitor the patients’ movement and location and then signal the caretaker and

the hospital in case of emergencies. The technology was disclosed during the research dissemination workshop held on 13th October, 2023 for the Makerere University Research and Innovations Fund (Mak-RIF) project titled,

“Advanced Localization Techniques on Smart Devices for Inclusive Location-based Services: A focus on healthy ageing for the elderly with dementia and mild cognitive impairment in rural communities”



A display of the technology design stages of the proposed wearable device to monitor elderly people with dementia and cognitive impairment in rural Uganda.

The system, basically monitors elderly people remotely using GPS technology which defines a safe zone around a user, technically calling a geofence and a PDR system (using accelerometer, gyroscope, and magnetometer) to monitor the position of the user within the safe zone. When the elderly person is within that safe zone, the system does not need to continue tracking him. The GPS is only turned on when the user moves out of the safe zone and then sends an alert

to the caretaker or to the hospital in case of emergencies. This technology is cheap, and better than the systems existing on market and would be best recommended for more resource constrained environments. The system is going to operate independent of the user who are mostly in rural areas and cannot read and write. The system does not require electricity and runs on batteries, charged once a week and can run for 30 days.

Leveraging Artificial Intelligence for Disease Screening

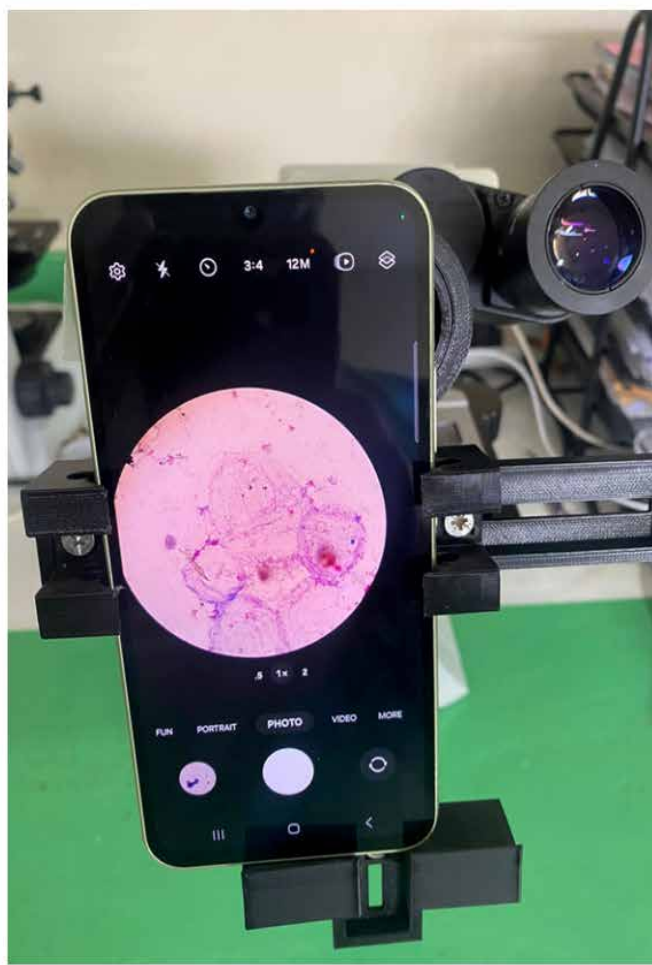
The Ocular project has made significant strides in developing innovative tools for diagnosing malaria, tuberculosis, and cervical cancer. These tools integrate advanced technology with practical healthcare solutions to improve diagnostic accuracy and efficiency in resource-limited settings. One of the project's key achievements is the design and fabrication of 3D-printed adapters for microscopes.

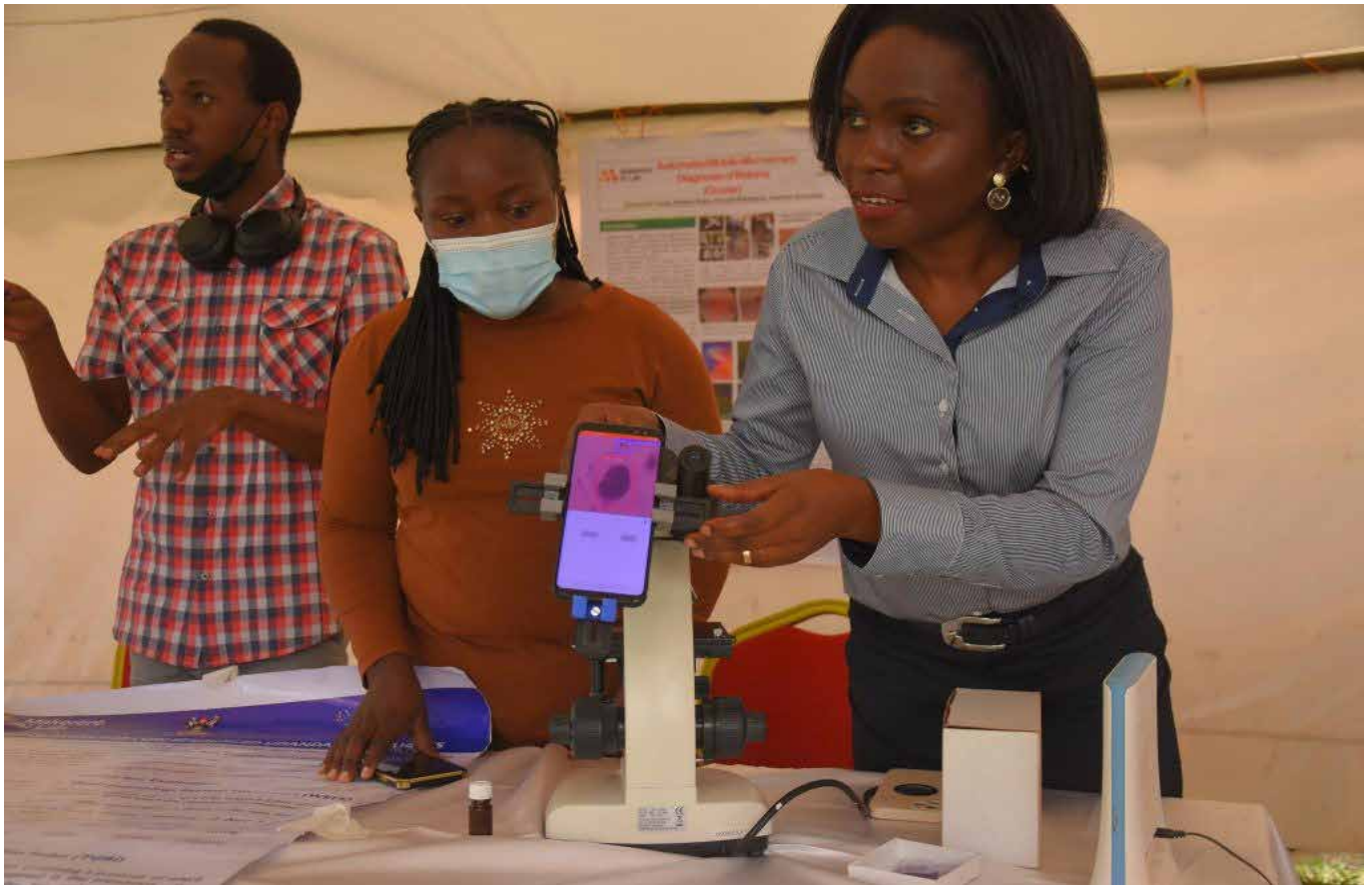
These adapters, tailored for diagnosing malaria, tuberculosis, and cervical cancer, were field-tested in health centers and refined based on user feedback. Documentation of experiments and surveys during the modification process is ongoing to guide further enhancements. The project has also developed an AI-powered Android app for malaria diagnosis. Using object detection

technology, the app processes microscopy images to identify and highlight malaria trophozoites and white blood cells. This tool enhances diagnostic accuracy and is particularly beneficial in underserved healthcare settings.

To support education, the project introduced a microscopy teaching aid. This interactive desktop and mobile app enables students and professionals to capture and annotate images, fostering hands-on learning experiences. By strengthening diagnostic skills, it serves as a valuable educational resource.

The Ocular project aims to integrate these AI-enhanced tools into existing healthcare systems, making disease surveillance and diagnosis more accessible and reliable in Uganda and similar contexts.



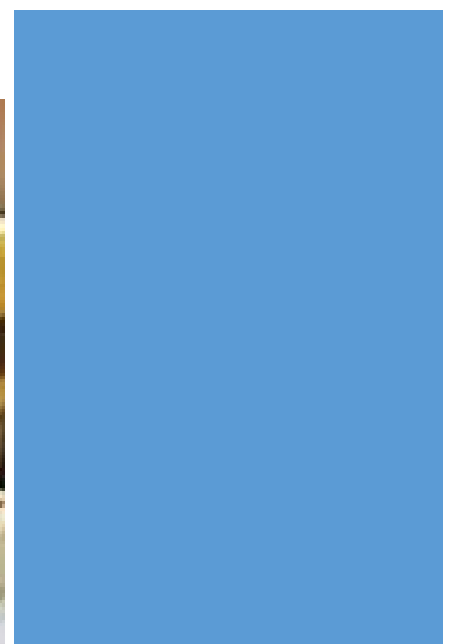


Dr. Rose Nakasi a researcher in the Automation of diagnosis of Malaria showcasing

A demonstration of the ‘Automated mobile microscopy diagnoses showed how medical lab technicians can be relieved of the burden of overwork. While a lab technician is advised to not exceed 20 samples in a day, this method which involves an app and smartphone attached to a microscope allows for very many samples to be taken and analyzed in a day. Secondly, it allows for easy transmission of the analysis to the doctor wherever they may be.’

The ‘smart bee monitor’ enables a farmer to monitor the behavior and health of their bees from the comfort of their home or anywhere. It uses the internet of things (IoT) technology to monitor the temperature, weight, carbon dioxide, and humidity of the beehive. It is solar-powered and uses sensors. By delivering the bee sounds, images, and videos, the system can give the farmer notification of pest invasion, disease infestation, disruptions caused by pollution, hive strength, and opportune time to harvest the honey.

The smart bee hive for beekeepers to monitor the health and behavior of bees



Device for the blind to move without the aid

Students at CoCIS developed Ultrasonic Sensors: To detect obstacles in the user's path and provide audio or haptic feedback. The 'Computer vision and sonification for the blind' innovation will save blind people the need to have a human aide all the time. Using artificial intelligence, sensors placed on the chest and toes of a blind person help to know an obstacle. The system gives audio instructions on what to do, which direction to turn, and even tells the person what object is located where within the vicinity.

*Student showcasing the Device
for the blind to move without the aid*



AI app to identify and deter birds from cereal farms

The 'Artificial intelligence-based approach to identify and deter birds from cereal crop farms' is a great Hitech scarecrow that birds cannot get used to and beat. It detects birds at a radius of 500 meters and makes a scary noise of a kite, an eagle, cock, or a human being. The system has a camera, a voice recorder, and a siren. It uses an algorithm to keep changing the noise so that the birds do not get familiar and apply contempt.

Virtual reality for medical health training

The 'Virtual reality for medical health training for infectious diseases' provides a safe and comprehensive virtual classroom, clinical lab, and medical ward and instructor communication. The system enables an instructor to train many people at a go without the possibility of infecting them. The trainee can learn from anywhere of convenience



*Virtual reality
for medical health training*

Community engagement activities

College of Computing and Information Sciences undertakes the following Community engagement activities: The College partners with nonprofit organizations to provide tech solutions that address social issues, such as creating websites for organizations and developing apps to assist community services. The College also involves students in projects where they can apply their skills to real-world problems affecting the community. Occasionally the College invites speakers from industry and academia to discuss topics in computing and information sciences that are relevant to community interests. The

College also provides mentorship opportunities for high school students interested in pursuing careers in computing. Every academic year, CoCIS facilitates internship opportunities with local businesses for students to gain hands-on experience while addressing community workforce needs. Additionally, excellent students are always connected with local employers for job placement after graduation.

By engaging in these activities, like internship placements, CoCIS contributes positively to the community, fosters relationships between students and community members, and promotes a culture of service and learning.

5. COLLEGE OF VETERINARY MEDICINE, ANIMAL RESOURCES AND BIOSECURITY

CoVAB



The College of Veterinary Medicine, Animal Resources and Bio Security (CoVAB) takes pride in being the hub of transformative education products supported by its professional workforce, product innovations and bio-technologies. CoVAB comprises of two schools namely; School of Veterinary Medicine and Animal Resources (SVAR) and School of Bio-Security, Biotechnical and Laboratory Sciences (SBLS). The college is committed to nurturing citizens to become productive, entrepreneurial, job creators, skilled, and with sufficient capacity to transform the existing challenges in the animal resources world into economic and livelihood opportunities. CoVAB's mission is working in partnership to drive transformative skills, knowledge, technology, innovations, Small & Medium Enterprises and service for the continuous improvement of the community wellbeing, production, employment and economic growth. This mission will help us to build healthier wealthier and secure communities. It offers a number of Undergraduate programmes and Graduate programmes.

RESEARCH GRANTS

- MAD-tech-AMR-Management of Animal Diseases and antimicrobial use by Information and Communication Technology to Control AMR in East Africa.
- A Cross-Disciplinary Alliance to Identify, PREdict and prePARE for Emerging Vector-Borne Diseases (PREPARE4VBDs)
- Establishment of a Biomarker research facility to first track the development of COVID19 novel diagnostics and treatment alternatives in Uganda.
- Subunit Vaccine Project
- Surveillance ELISA Project
- Strengthening Surveillance of Leishmaniasis in Uganda and Kenya through a Collaborative Multisectoral One Health Capacity Building Approach in Endemic foci.
- Innovation for Sustainability and Societal relevance: Partnerships in evidence-based higher Education on food systems and climate change.
- Controlling and progressively minimizing the burden of Animal trypanosomosis.
- The consequences of biodiversity loss and land use change on infectious disease emergence.
- MAD-tech-AMR-Management of Animal Diseases and antimicrobial use by Information and Communication Technology to Control AMR in East Africa.
- The role of Warthogs in the epidemiology of African swine fever in Uganda.

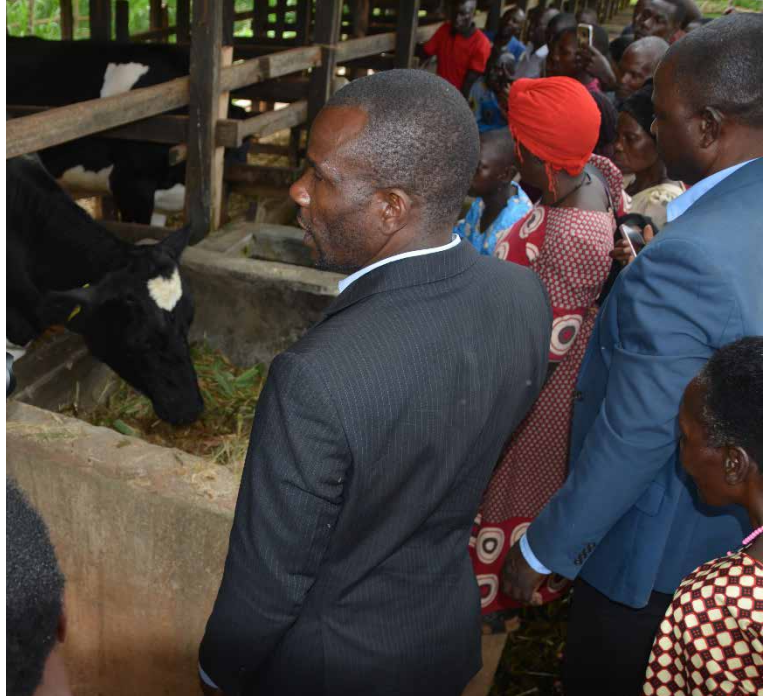
Makerere University Pioneers Climate-Smart Agriculture

On 20th November 2024, scientists and students from Makerere University held a field school event at Our Lady of Assumption Mitala Maria Parish in Buwama. The event demonstrated improved silage-making technologies to help farmers address low milk and meat production due to poor quality feeds, especially during dry seasons. The event, themed "Collaborative Knowledge Co-Creation and Sharing for Livestock Feed Climate-Smart Innovations in Uganda," was part of a four-year project titled "Building Capacity for Innovation and Advancement of Climate Smart Agriculture in East and Southern Africa" (CICSA-E&SA). The project is funded by the Norwegian Agency for International Cooperation and Quality Enhancement in Higher Education (Diku) and involves partnerships with the Norwegian University of Life Sciences, Maseno University (Kenya), LUANAR (Malawi), and DARS (Malawi). This initiative aims to equip farmers with better production systems to adapt to climate change and improve livestock productivity.



Farmers look at a demo of the process of silage preparation during a farmer field school in Mitala Maria

Dr. Herbert Mukiibi (In Court) demonstrating feeding of cattle to Hay made using Silogist, in Mitala Maria



At the Exhibition, Dr. Dickson Tayebwa (Centre in white) interacts with the exhibitors

The Roots Africa University Clubs' exhibition and mentorship engagement at CoVAB.

The Roots Africa University Clubs' exhibition and mentorship engagement was held at the College of Veterinary Medicine, Animal Resources, and Biosecurity bringing together several stakeholders that held a discourse centered around youth involvement in addressing critical issues such as poverty and hunger. The event which also marked the launch of the

Wakiso District Human Rights Report for the year 2023 was held on May 11, 2024, and was hosted by The INNOVETS which is a student-driven initiative based in CoVAB. It is dedicated to empowering students with hands-on skills, fostering critical thinking, and cultivating research expertise, as well as enabling the development of innovative ideas that have the potential to transform the livestock sector in Uganda.



Some of the participants in the workshop have a look at one of the posters spelling out activities of Real-Life Learning Labs

On October 14, 2024, the College of Veterinary Medicine, Animal Resources and Biosecurity (CoVAB) convened a five-day Training of Trainers workshop for the Collaborative Online International Learning (COIL) model. This was part of the Innovation for Sustainability and Societal relevance (INSSPIRE) project, which focuses on enhancing evidence-based education in food systems and climate change. The workshop brought together partners and stakeholders from various higher education institutions across Southern and Northern Africa to brainstorm innovative strategies for addressing these pressing global challenges. Stakeholders demonstrated their progress in implementing Real Life Learning Labs (RLLL), an experiential learning approach designed to foster interdisciplinary collaboration on real-world development projects. These labs aim to tackle relevant issues in agriculture, industry, and society by equipping students with practical skills and problem-solving capabilities.

Launch of the MorTAR Project to Tackle Tick and Acaricide Resistance

The project, Monitoring of Ticks and Acaricide Resistance Laboratory Network (MorTAR) was launched in October 2024. This groundbreaking initiative aims to combat Tick Acaricide Resistance and Tick-Borne Diseases through a network of nine specialized laboratories. The MorTAR project is designed to develop sustainable and scalable diagnostic capabilities to address these significant challenges in sustainable livestock production. The project will establish a National Database with inputs from the network of laboratories and collaboration with key stakeholders, including the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), researchers, academia, and local governments., with Dr. Patrick Vudriko, the Principal Investigator as Principal Investigator.

RESEARCH COLLABORATION

CoVAB joins efforts in combating cyberattacks on laboratories handling high-risk biological materials

Researchers at CoVAB, in collaboration with the Uganda Virus Research Institute (UVRI) and supported by the Civilian Research and Development Foundation (CRDF) Global, are addressing the increasing threat of cyberattacks on laboratories handling high-risk biological materials. Their initiative, “Establishment of Cyber Biosecurity Inventory and Procedures for Effective Safety and Administrative Controls for CoVAB and UVRI Laboratories in Uganda,” aims to secure and protect these laboratory facilities.

The project focuses on developing comprehensive Cybersecurity Standard Operating Procedures, guidelines, and manuals to ensure the safety of laboratories managing high-risk pathogens, which could pose significant national or global security risks if compromised.

Additionally, the project seeks to raise awareness about cyber threats, cyber biosecurity, biosafety, and biosecurity among staff, scientists, researchers, and management at both institutions. This will promote cybersecurity best practices and ensure the security of their critical work.

This is a crucial initiative given the move of Makerere University to become research-led coupled with the ever-increasing advances in scientific research and biotechnology and is crucial in ensuring that the University and other research centers contribute to global scientific progress safely and securely.

Improving the understanding, diagnosis and control of zoonotic diseases including Crimean congo haemorrhagic fever

The molecular and computational biology research group led by Dr Muhanguzi Dennis at CoVAB together with the Foundation for Research and Technology-Hellas (FORTH), Greece are leading a large consortium [7 sub-saharan institutions] supported by the European commission [Euro 6.131 million] to investigate the role of ticks as disease vectors, focusing on Crimean-Congo Hemorrhagic Fever. Crimean-Congo Hemorrhagic Fever is often a fetal disease transmitted from animals to humans by tick bites.

Over the next three years, these studies will determine the circulating genotypes of the Crimean-Congo Hemorrhagic Fever [CCHF], genetic and metabolic mechanisms of acaricide resistance and how these are driving CCHF outbreaks as well as develop bedside diagnostics for Crimean-Congo Hemorrhagic Fever virus.

These studies will also support capacity building in the epidemiology, detection and control of CCHFV by training three PhD students and one postdoctoral fellow and procurement of high throughput molecular and immunodetection equipment for diagnosis of Crimean-Congo Hemorrhagic Fever.

The Centre for Biosecurity and Global Health

Based at CoVAB, the Centre for Biosecurity and Global Health (CeBiGH) continues its efforts toward the development of recombinant vaccines and diagnostics, with major funding from the Science, Technology and Innovations Office of the President (STI-OP).

Cutting-edge scientific research laboratories with up to Biosafety Level 3 (BSL3) containment have been established. Using COVID-19 as the starting point, prototype prognostic (testing disease biomarkers) and screening tests have been developed in the form of lateral flow assays (Rapid diagnostic test formats). In addition, recombinant vaccine prototypes including the anti-tick vaccine, COVID-19, and East Coast Fever (an important tick-borne disease of cattle) have been developed.

This research has been extended to other diseases for which diagnostics/prognostics and vaccines are urgently needed. CeBiGH has also positioned itself as a service center to support researchers from Makerere University and beyond with pre-clinical studies in animal models before new vaccines, therapeutics, or diagnostics can be tested in human clinical trials.

The Central Laboratory Animal Research Facility (CLARF) was specifically supported by STI-OP to offer this critical service.

- **Bio-Angle Vacs SDN.BHD:** CoVAB is in partnership with this Malaysian pharmaceutical company to improve veterinary vaccine production for small ruminants. This partnership aims to develop innovative products that benefit farmers and society.
- **National Livestock Resources Research Institute (NaLIRRI):** CoVAB and NaLIRRI have agreed to formalize their relationship to collaborate on skilling, training, joint research activities, supervision, and joint grant writing.
- **Capacitating One Health in Eastern and Southern Africa (COHESA) Project:** CoVAB is part of a consortium that includes the International Livestock Research Institute (ILRI), the French Agricultural Research Centre for International Development (CIRAD), and the International Service for the Acquisition of Agri-biotech (ISAAA). This project, funded by the European Union, aims to build One Health capacity in Eastern and Southern Africa.
- The Uganda Virus Research Institute (UVRI) and the College of Veterinary Medicine, Animal Resources and Biosecurity (CoVAB) have a collaborative relationship working on together is the **Cyberbiosecurity Project**, which aims to safeguard laboratory facilities from cyber threats. This project involves conducting ICT risk assessments and developing comprehensive cybersecurity procedures and guidelines.

- Norbrook-UVA Excellence Award, this recognizes the top-performing veterinary medicine students called the Norbrook-UVA Excellence Award. This award is sponsored by Norbrook Uganda Limited and presented in collaboration with UVA and CoVAB. Additionally, UVA has been actively involved in supporting CoVAB's graduates by organizing membership registration drives and celebrating their achievements. This collaboration helps to foster socio-economic development and improve livelihoods through the optimization of animal resources in Uganda.
- CoVAB to Receive \$400,000 Worth of Scientific Equipment.

Makerere University's College of Veterinary Medicine, Animal Resources and Biosecurity (CoVAB) is set to receive modern scientific equipment worth \$400,000 (Ug. Shs. 1.6 billion) from the Seeding Labs Instrumental Access program. This equipment will enhance teaching, research, and diagnostic services in the Department of Veterinary Pharmacy, Clinical and Comparative Medicine. The

initiative aims to remove barriers to STEM education and research, providing hands-on opportunities for students and enabling scientists to generate new knowledge.

- The Africa Union Inter-African Bureau for Animal Resources (AU-IBAR) visited Makerere University on 11th and 12th March 2024 to assess its suitability for hosting a Regional Centre of Excellence in Fisheries and Aquaculture. The evaluation followed an Expression of Interest by the College of Veterinary Medicine, Animal Resources and Biosecurity (CoVAB) and the College of Natural Sciences (CoNAS). Led by Etienne Hinrichsen, the team reviewed teaching and research facilities, interacted with staff and students, and examined various aspects like curricula, staff qualifications, and research capabilities while assessing the potential to host the centre of excellence to lead training and research in Fisheries and Aquaculture, benefiting students from across Africa.

One of the Labs visited by the team at CoVAB.



One of the Labs visited by the team at CoVAB.

6. COLLEGE OF NATURAL SCIENCES



CoNAS

The College of Natural Sciences (CoNAS) is one of the ten constituent Colleges of Makerere University with over 2000 students and 153 members of staff spread across two schools and seven departments. The units include: School of Physical Sciences (Departments of Physics, Chemistry, Mathematics, Geology and Petroleum Studies); and the School of Biosciences (Departments of Plant Sciences, Microbiology and Biotechnology; Department of Zoology, Entomology and Fisheries Sciences; and Department of Biochemistry and Sports Sciences). The College is the cradle of basic sciences at Makerere University providing a foundation for all applied sciences offered at the University. It offers programmemes at undergraduate and graduate level. The CoNAS presented a total of 39 students including 17 PhDs, 22 Masters (4 females, 18 male) at the 73rd graduation ceremony. Eight students attained PhD in Mathematics, the highest number of PhD graduates from a single department in the 100-year history of Makerere University.

RESEARCH GRANTS

Table 19. Projects supported by International Partners

No.	Project title	Principal Investigator
1.	Environmental Chemistry for Sustainable Development	Dr. Patrick Ssebugere
2.	Mathematics for Sustainable Development	Assoc. Professor John M. Mango,
3.	Energy Technology Network (EnergyNET)	Dr. Karidewa Nyeinga
4.	Dry Rifting in the Albertine Rhino (DRIAR) Project	Dr. J.M. Kiberu
5.	ISP Grant of 313,590 SEK to EAUMP	Dr Juma Kasozi
6.	IST Grant of 598,000 SEK -	Dr B. K. Nannyonga
7.	Understanding cell to cell heterogeneity in African trypanosome field isolates	Dr Julius Mulindwa
8.	INNOECOFOOD Project	Dr Godfrey Kawooya Kubiriza
9.	*“East African HEI Network for Regional Digital Plant Pathology Study Modules, VIRAL”*. The main area of focus is “Digital Plant Pathology”.	Prof. Arthur Tugume and Dr. Shahasi Athman
10.	Prevention and Management of postpartum haemorrhage using safe uterotonics	Dr Alice Nabatanzi
11.	Bio-GOLD Project - the project aims to develop sustainable technologies for remediation and rehabilitation of mercury contaminated soils and effluents in Mercury-dependent Artisanal and Small-scale Gold Mining (ASGM) areas in Uganda	Project PI is Dr Mary Kaggwa from Kyambogo University.
12.	Africa Uninet Uganda-Austria Collaboration in Algebra and Geometry	Dr David Ssevviiri
	London Mathematical Society Grant	Dr David Ssevviiri
13.	European Mathematical Society (EMS) - Commission for Developing Countries (CDC)	Dr David Ssevviiri
14.	International Science Programmeme -	Dr David Ssevviiri
15.	Early Career Fellowship 2023 by The Organization for Women in Science for the Developing World (OWSD), a UNESCO programmeme, hosted by The World Academy of Sciences	Dr Patience Tugume, Department of Plant Sciences, Microbiology and Biotechnology
16.	“Capacity building in Gas Chromatography and Food Security in East Africa”	Dr Patrick Ssebugere, Department of Chemistry

Table 20. RIF Round 5 Grant Recipients

No	Project title	PI
	Assessing feasibility, acceptability and utility of tuberculosis-molecular bacterial load assay for monitoring TB treatment in three HIV Clinics in Kampala	Dr Agnes Nandutu Masawi
	Exploitation of Azolla as a renewable Climate Smart Agricultural resource for restoration of degraded soils and improvement soil productivity in Uganda	Ms. Nabyonga Lydia
	Designing efficient, inexpensive, and Eco-friendly Plant-Derived Nanoparticles Adsorbents For Removal Of Pharmaceutical Residues From Effluent Water	Dr Florence Nantaba
	Knowledge, Attitudes And Conservation Of Commonly Traded Medicinal Plants In A Climate Changing Environment In Eastern Uganda	Dr Tugume Patience
	The Forgotten Tropical Peat Swamp Forests of Lake Victoria Basin, Uganda: A Treasure for Restoration and Conservation	Mr. John Omara
	Developing Blight Resistant Tomato Varieties to Reduce Excessive Use of Fungicide and Generation of Tomato Shelf-life Extension Technologies for Smallholder farmers in Uganda	Ozimati Alfred Adebo
	Immersive Technology for Physics	Dr Elizabeth Naluminsa
	Development of Poly-Herbal mosquito repellent from Marigold, Lemon grass and Eucalyptus plant cocktail for malaria control	Dr Ambrose K. Mukisa
No.	Project title	PI
	Accessibility of science practical's to both public and private schools in Uganda	Dr Taddeo Ssenyonga
	Commercialization of Affordable Value-added Phyto-Nutra Chicken Concentrate Feeds	Dr Alice Nabatanzi
	Commercialization of Phytoplus nutraceuticals for pregnant women and School children	Dr Alice Nabatanzi

RESEARCH ACTIVITIES AND INNOVATIONS

Drive to improve waste management in Uganda
Majority of industries in the country such as dairies, abattoirs, breweries, distilleries, and tanneries are engaged in agro-processing. Such industrial processing often leads to the discharge of large quantities of organic-rich wastewater, disease-causing micro-organisms, and greenhouse gas emissions, if poorly treated or managed. While the regulatory body, the National Environment Management Authority (NEMA) requires that all industries should efficiently treat their effluent to meet discharge standards, waste treatment technology market surveys that were carried out in the major industrial cities of Kampala, Jinja, Masaka and Mbarara in 2018 showed that most agro-process industries do not treat their wastewater. Furthermore, very few have in their effluent treatment management, resource recovery processes such as bio-digesters for recovering biogas and nutrient-rich bio-slurry.

A study conducted by researchers from the College of Natural Sciences (CoNAS), Makerere University in collaboration with partners in the waste management sector proposes a number of technologies that can be deployed to effectively address the challenge of waste in the country. These include; anaerobic-aerobic digesters, sludge drying beds, constructed wetlands, and duckweed growing units.

Through their project titled “*Adding value to agro/bio-waste through integrating technologies to enhance sustainable agro-process waste management in Uganda*”, the researchers led by Dr Joseph Kyambadde from the Department of Biochemistry and Sports Science at Makerere made several recommendations towards waste management in the country. The researchers called for integration of aspects of the technology, encompassing wastes-to-energy courses/topics in the curricula of programmes like biochemistry, industrial chemistry, and environmental sciences at universities. This would enable training of scientists who would in turn foster adoption and promotion of the developed technologies in different industries.

They also emphasized the need to promote investment in technologies that can be used to convert waste into useful by-products like biogas, bio-fertilizers and protein-additives, and to raise awareness about the importance of waste treatment technologies amongst private-public actors, managers/business owners of agro-processing industries, as well as government line ministries/agencies, and development partners. The research findings were disseminated to stakeholders on 23rd January 2024, at a seminar held at Ridar Hotel, Mukono District.

Assessment of Mak Suitability to Host the Regional Centre of Excellence in Fisheries and Aquaculture
Makerere University has been subjected to an assessment to determine its suitability for hosting a Regional Centre of Excellence in Fisheries and Aquaculture in Africa. The evaluation follows a jointly submitted Expression of Interest by the College of Veterinary Medicine, Animal Resources and Biosecurity (CoVAB) and the College of Natural Sciences (CoNAS). The Africa Union Inter-African Bureau for Animal Resources (AU-IBAR) mission was at Makerere from 11th to 12th March 2024, specifically at the colleges that offer fisheries-related programmes, CoVAB and CoNAS where

they looked at the suitability of the existing Teaching and Research Facilities and other parameters necessary for the establishment of a center of excellence. The team comprised of Etienne Hinrichsen, the leader together with Patrick Karani, from AU IBAR, and Daniel Adjei Boateng, the Aquaculture Expert on the mission undertook a two-day in-depth review of the state of affairs of Makerere University to make an informed decision regarding its suitability to host the centre.

INNOECOFOOD Project: Mak Team Assesses Potential Sites for Hosting the Mini Living Lab & Fish Processing Unit

The MAK-INNOECOFOOD project team on 18th March 2024 conducted a thorough exploration of potential spaces for the fish processing unit within the Department of Zoology, Entomology and Fisheries Sciences at Makerere University. The primary objective was to assess the viability of these spaces to accommodate the fish processing unit, aiming to streamline project operations. The tour encompassed various areas within the Department, including laboratories, storage facilities, and open spaces suitable for potential adaptation.

Each space was examined to determine its capacity, accessibility, infrastructure, and compatibility with the intended activities of the processing unit. Similarly, on 19th March 2024, the team conducted assessments across four sites within Mukono and Buikwe districts to establish their viability for location of a mini living lab and fish processing unit. These included two sites in Namumira Anthony Ward, Mukono Municipality, as well as Kikuba, and Kamos Fish Farm in Buikwe district.

At the sites, the team assessed the topography in relation to the planned activities. At Kamos Fish Farm, the team explored the potential for setting up small, customized experimental cages and ponds to facilitate the project experimental activities. The cages and ponds would be used to cultivate tilapia and catfish, with the aim of establishing controls for growth rates in relation to fish feed. Various aspects such as logistics, feasibility and cost estimates for constructing the cages were discussed with the owner of the farm.

Leveraging poultry by-products in the formulation of commercial fish feeds

Aquaculture has been prioritized by the Government of Uganda as a vital sector, aiming to improve livelihoods, provide jobs, and improve food security and nutrition for its people as stipulated in the National Development Plan (NDP) III. Fish feeds are a fundamental resource for growing the sector. Yet the high costs of standard feeds limit returns for fish farmers, as they represent 40–70 percent of total production costs for small-scale aquaculturists (Enyidi et al. 2017; Singh et al. 2018). In order to meet the 1,000,000 tones annual production target from aquaculture, Uganda will need at least 1,500,000 tons of good quality fish feed up from the current 75,000 tons produced locally and 150,000 tons imported (FAO). Poultry by-products present a cheaper alternative for fish feed formulation. Through a project titled: Towards up-scaling the use of poultry by-products in the formulation of

commercial fish feeds in Uganda (TUPPCO), Makerere University researchers led by Dr Godfrey Kawooya Kubiriza, Head, Department of Zoology, Entomology, and Fisheries Sciences, target to optimize the use of local technology to process poultry by-products including offal, discarded cocks, and unhatched eggs into nutrient-rich protein supplements. The project is funded by the Carnegie Corporation of New York through the Directorate of Research and Graduate Training at Makerere University under the Consolidating Early Career Academics Programmeme (CECAP), and implemented in Mukono District. It aims to address the high cost of imported feeds, which poses significant logistical challenges.

ICT-4MRPQ Project Team, Partner Institutions Discuss Strategies for Improving the E-Supervision Platform

The E-Supervision Platform being developed by IT Experts from Makerere University and MUBS is intended to improve graduate research management Processes in HEIs in Uganda to enable students to graduate on time. It is one of the main objectives of the ICT-4MRPQ Project funded by the EU under Erasmus projects for the period 2023-2026 with the aim of strengthening Uganda's HEIs capacity to use ICT in Masters' research journey quality management processes. The E-Supervision web portal (<https://mastersresearch.ug/>) has been identified as one of the components of the Research Information Management System (RIMS) of Makerere University. RIMS is a digital platform aimed at tracking all research outputs at Makerere University. On 9th April 2024, the project team led by Assoc. Prof. David Katamba and Dr John Mary Kiberu convened a meeting at Makerere University to demonstrate the E-Supervision platform to partner institutions and get feedback on how it can be improved. Partner institutions include: Mbarara University of Science and Technology (MUST); Stichting Vu; Kyazze, Kankaka & Co Advocates; Uganda Chapter for Corporate Social Responsibility Initiatives (UCCSRI); Universidade De Lisboa; and the Uganda National Council for Higher Education.

BioGOLD Project Team Kicks off Activities

Launched in May 2024, Biosorption for Sustainable Small-Scale Gold Mining in Uganda (BioGOLD) aims to develop sustainable technologies for remediation and rehabilitation of mercury contaminated soils and effluents in Mercury-dependent Artisanal and Small-scale Gold Mining (ASGM) areas in Uganda. The three-year project (2024-2027) funded by the Austrian Development Cooperation through APPEAR will be implemented in three districts namely; Mubende (Central Uganda), Rubirizi (Western Uganda), and Namayingo (Eastern Uganda). Partner institutions include; Makerere University, Kyambogo University, Gulu University, University of Pretoria (South Africa), and the University for Continuing Education Krems – Austria. As part of the kick-off activities, the BioGOLD research team on 23rd-24th August 2024 introduced the project to the leaders and miners in selected sites in Namayingo District. The team also tested questionnaires, and collected initial data to guide activities at the sites. The project team engaged ASGM communities of Naggudi, Nsango and Budde villages on issues regarding their socio-demographic and economic data (miners and household

crop farmers), gender inclusion and power relations in the mines, risks of exposures to mercury in the mines, baseline information on effluent and soils in the mines, and crops grown around the mines. The team conducted similar activities in Kasanda, Mubende District (Central Uganda), and Buhweju District in Western Uganda.

AWaRMN Achievements and transition to a more sustainable network

The African Water Resources Mobility Network (AWaRMN), a multi-partner project of the EU funded Intra-Africa Academic Mobility Scheme has over the last four years of implementation registered great success. Initiated in 2019 and launched on 20th October 2021 at an event hosted by Rhodes University, South Africa, the lead partners, AWaRMN has to date, supported the training of 32 MSc students, 12 PhD students and 12 academic and administrative staff on exchange programmemes. The project, currently in its fifth year of operation, is aimed at fostering collaboration and cooperation between higher education institutions in Africa in the water research sector through mobility. The project is a collaboration between five partner institutions on the continent: Rhodes University in South Africa, University of Kinshasa in the Democratic Republic of Congo, Federal University of Technology in Nigeria, Makerere University in Uganda, National School of Hydraulics in Algeria, and TU Delft in the Netherlands. The PI of the project is Prof. Nelson Odume from Rhodes University. At Makerere University, the project is coordinated by Prof. George Nyakairu from the Department of Chemistry.

Mak Researchers Set Out to Address the Challenge of African swine fever in Uganda

African swine fever (ASF) is a highly contagious viral haemorrhagic disease of domestic pigs; and has recently spread to new areas including Eastern Europe and in Asia as far as Papua New Guinea. This disease has neither vaccine nor treatment and is currently a big challenge to many smallholder pig farmers in Uganda. In Uganda, ASFV genotype IX has been reported to cause outbreaks on a regular basis and is an impediment to development of the swine industry. The disease was previously reported with a mortality of 100%. However different forms of the disease have recently been observed in domestic pigs. Indeed, some studies have shown that pigs that survive ASF become resistant to the same viral isolates although they do not produce classical neutralizing antibody. These observations could have the key for vaccine development strategies. Through a project titled “*African swine fever virus (ASFV) severity and viral genomic structural features: opportunities for development of a vaccine in Uganda*”, a team of researchers led by Prof. Charles Masembe from the Department of Zoology, Entomology, and Fisheries Sciences at Makerere University registered the need to correlate clinical studies of ASF virus with full genome sequences and virus structural data to identify potential candidate genes for vaccine development. The team set out to isolate and characterise highly virulent and low virulent ASF viruses circulating in the swine population in Uganda using next-generation and Electron

Microscopy to inform the development of ASFV vaccines and other therapeutic strategies. The team also set out to sequence the whole genome of low and high-virulence African swine fever viruses circulating in the domestic pig population in Uganda; compare the whole genome sequences of low and high-virulence ASF viruses in Uganda, and to find genomic variations and their effects on the virulence and viral evolution.

Whole blood and organ tissue samples together with clinical-epidemiological information, were collected from acute and chronic cases of pigs in reported ASF outbreaks in the districts of greater Masaka, Greater Gulu, Mukono, Wakiso, Kakumiro, and additionally in other districts where outbreaks were reported during the study period.

The project was supported by the Government of Uganda through the Makerere Research and Innovations Fund (MakRIF). On 15th May 2024, the project team held a workshop at Doves Nest Hotel in Gulu District to disseminate the research findings, and to fact check by mapping pig farms, abattoirs, slaughter slabs, and pork restaurants in both Gulu District and Gulu City for on-going and future research.

Launch of the e-Resources for Health Website

The Department of Biochemistry and Sports Science on 21st June 2024 launched a website developed by staff in the Department as part of their MakRIF project, *“Using the Internet to Incentivize Healthy Lifestyle Choices in Uganda”*. The website, www.eresourcesforhealth.org is the medium they are using to inform, educate, and communicate about non-communicable diseases (NCDs) by providing well-researched, evidence-based information to motivate, empower and support readers to make healthy life-style choices to prevent NCDs. The PI is Dr Rhona Baingana, a member of staff in the Department of Biochemistry and Sports Science at CoNAS.

Mitigating the effects of aquaculture on the environment

The fisheries sub-sector in Uganda is crucial, supporting over 5 million livelihoods and providing essential protein for up to 17 million people, with an average consumption of 10 kg per capita. Uganda’s population is projected to double in the next 27 years, prompting the National Development Plan III to aim for a significant increase in fish production, with aquaculture expected to contribute 1 million MT by 2030.

The Fisheries and Aquaculture Act 2022 emphasizes adherence to National Environmental Management principles to achieve sustainable production systems. However, as aquaculture grows, the sector faces environmental challenges due to increased intensive production and on-farm waste, including nutrients from feed, uneaten feed, poor quality

feeds, pseudofeces, escaped farmed fish, and residual chemicals. These pollutants pose risks such as habitat quality deterioration, biodiversity loss, eutrophication of waterways, and the emergence of drug-resistant pathogens.

Through a Project titled: *Mitigating the Effects of Environmental Pollution from aquaculture on freshwater resources in Lake Victoria Basin (MEEP)*, researchers from Makerere University in collaboration with the National Environment Management Authority (NEMA) set out to assess the effects of aquaculture facilities and practices on Lake Victoria, its catchment rivers and wetlands.

The team led by Dr Ronald Semyalo from the Department of Zoology, Entomology and Fisheries Sciences (ZEFS) at Makerere University subsequently examined the effectiveness of innovative technologies, such as integrated wetland-bivalve systems, in mitigating these impacts. They also reviewed the application of national environment and aquaculture regulations in controlling environmental pollution.

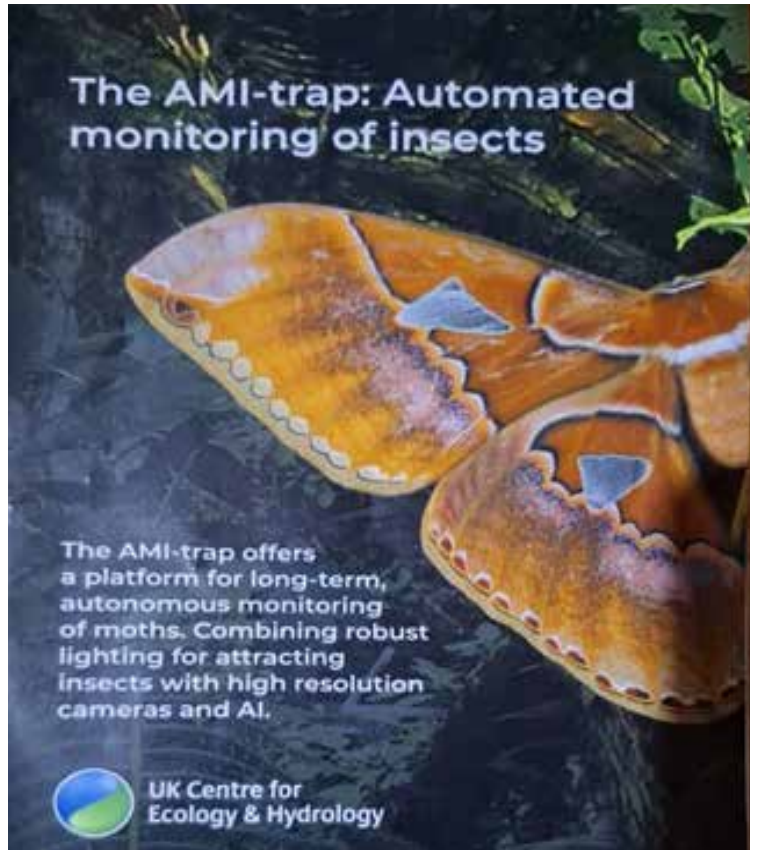
As part of the project outputs, the team developed an Innovative Integrated Wetlands-bivalve system to curb the effects of aquaculture practices on freshwater resources in the Lake Victoria Basin. On 26th June 2024, the project team held a workshop at Colline Hotel Mukono to disseminate the research findings to stakeholders who included fish farmers from Buikwe, Jinja and Mukono, District Fisheries Officers, as well as representatives from NEMA and MAAIF. In the presentations, the team highlighted the environmental impacts of aquaculture practices and the possibility of innovatively using nature-based, environmentally friendly innovations as a mitigation measure.

Solving the problems of taxonomic difficulty in insect studies

Dr Perpetra Akite, a Lecturer in the Department of Zoology, Entomology, and Fisheries Sciences has set up the first AMI-trap (Automated Monitoring of Insects Trap) in Uganda. The AMI system offers a platform for long-term, autonomous monitoring of moths.

The set was given to her by CEH (UK) through the Tropical Biology Association field courses. Students will now appreciate the role of ICT in taxonomy and why integrative science is important since this machine is so much based on the use of AI and machine learning.

Dr. Akite is one of Uganda’s leading entomologists and experts in butterflies. She has made important advances in improving knowledge around insects in Uganda, contributing to assessing and mapping key ecologically sensitive species in the country.



Efforts to improve performance in the subject of Biology

The School of Biosciences, CoNAS has been central in the quest to improve the academic performance of Biology in national examinations in secondary schools in Uganda. Therefore, under the office of the DVCAA, a study to assess factors accounting for poor performance in Biology was approved by Makerere University. The study is being undertaken by a team of researchers from the School of Biosciences, CoNAS and the School of Education, CEES under the overall technical oversight of Prof. Fredrick J. Muyodi (CoNAS) and Prof.

Josephine Esaete (CEES).

Accordingly, between 24th-28th June 2024, data was collected across the country from different schools that were sampled for this study. Schools were sampled from all the different sub-regions of Uganda. At CoNAS, the project team members were from the Departments of Zoology, entomology and Fisheries Sciences; Plant Sciences, Microbiology and Biotechnology; and Biochemistry.

RESEARCH DISSEMINATION

The 2024 International Mathematics Olympiad (IMO) The Department of Mathematics outreach arm known as *Uganda Mathematical Society* participated in the 2nd International Mathematics Summer Camp in Beijing, China, organized to prepare students for the 2024 International Mathematics Olympiad (IMO) held

in Bath, United Kingdom from 11th-22nd July 2024. Team Uganda was led by Dr Joseph Ssebuliba and Dr Alex Samuel Bamunoba from the Department of Mathematics, College of Natural Sciences (CoNAS), Makerere University, and Mr. Medi Ssesanga from Ndejje Senior Secondary School.



Right-Left: Dr. Joseph Ssebuliba, Dr Alex Samuel Bamunoba and Mr. Medi Ssesanga with the students at the opening ceremony in Beijing



第二届国际数学夏令营

签到处

THE 2ND INTERNATIONAL MATHEMATICS SUMMER CAMP

REGISTRATION

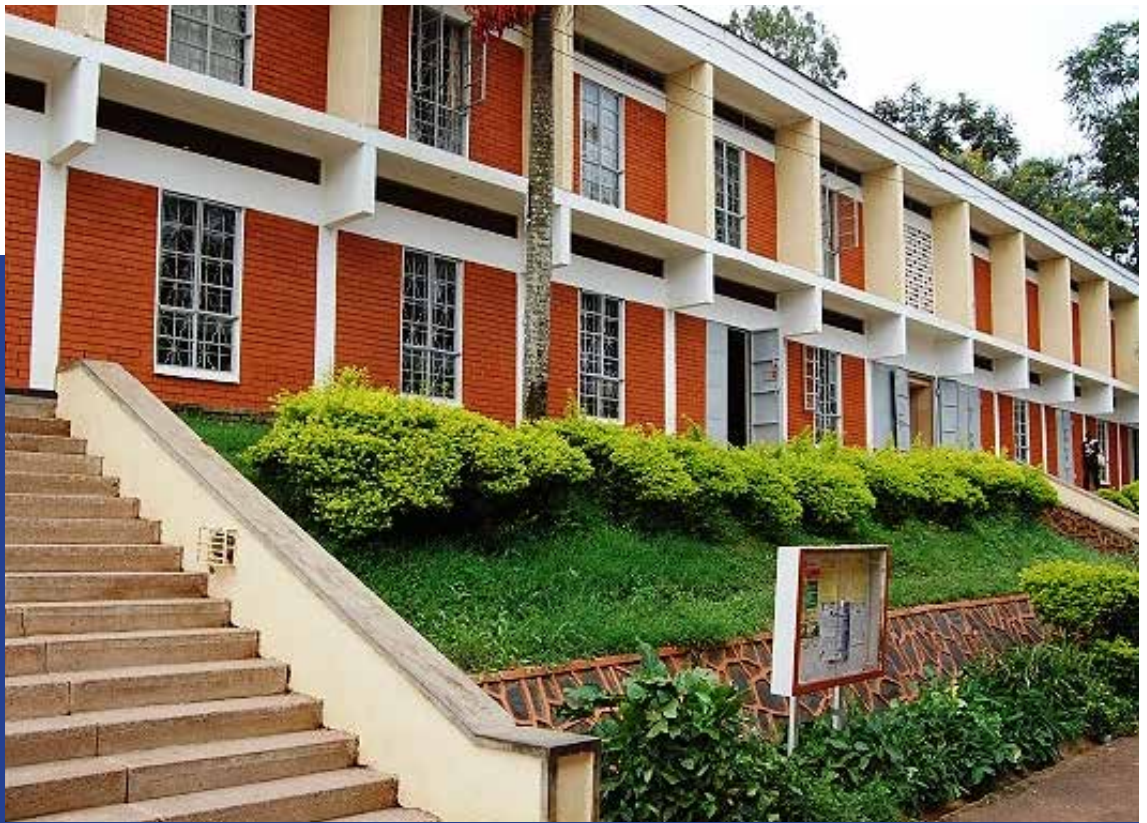
-IMSC2024-



The team of Ugandan contestants was made up of six students: 2 female and 4 male as follows; i) Austin Asimwe – St. Henry's College Kitovu, ii) Busingye Favour Bwesigye – Ntare School, iii) Kelvin Miles Kabali David Senteza – Kings College Budo, iv) Raphael Alpha Oyini – St. Mary's College Kisubi, v) Laetitia Faith Katono – Mt. St. Mary's College Namagunga, vi) Elsie Druscilla Nuvamanya – Ndejje Senior Secondary School.

7. COLLEGE OF HUMANITIES AND SOCIAL SCIENCES

CHUSS



CHUSS is one of the largest and most dynamic Colleges at Makerere University, with a proud legacy of nurturing critical thought, cultural reflection, and transformative knowledge. It is a home of academic community of over 400 staff and more than 1,600 students pursuing undergraduate, master's, and PhD degrees.

The College comprises four Schools, each offering a broad range of academic programmes and research opportunities: School of Liberal and Performing Arts, School of Languages, Literature and Communication, School of Social Sciences and School of Psychology. Together, these schools house 14 departments and offer over 37 academic programmes spanning undergraduate degrees, postgraduate diplomas, master's programmes, and doctoral studies.

RESEARCH GRANTS

Table 21. Winding projects

No.	Full Project Name	Principal Investigator
1	Beyond War Compensation: Gender Justice Livelihood and Rights in Northern Uganda -LSE	Prof. Ahikire Josephine
3	Establishment of a Centre of Excellence on Research , Teaching and Learning -CERTL	Prof. Ahikire Josephine
4	PhD Training-GERDA HENKEL	Dr Edgar Nabutanyi
5	Certizen Project	Dr Godfrey Asiimwe
6	Archiving, Memory and Method from the Global South- AMM	Prof. Ahikire Josephine
7	French for specific purposes (FSPI)	Prof. Edith Natukunda
8	CoMMPASS Project	Dr. William Tayebwa
9	African Urbanities	Prof. Dominica Dipio
10	AID ACCOUNT	Dr Eria Sserwajja
11	Food Wastage in Uganda	Dr. Eria Sserwajja
12	Migration	Dr. Aisha Nakiwala
13	Young Girls and Children	Dr .Victoria Namugala
14	Summer School	Dr. Resty Naiga
	Sharpening the Lens: enhancing Linguistics career prospects in East Africa.	Prof Edith Natukunda
15	Using Music to minimise gambling practices among the Ugandan youth	Dr. Ssekalega Branco
16	Interpersonal pyschoterapy for groups/ capacity building project for health workers in Uganda	Dr. Rosco Kasujja
17	The Rotary Peace Center Extension 2020-2024 (Aug)	Helen Nambalirwa Nkabala (PI) Veneranda Mbabazi(Co-PI) Samson Barigye(Co-PI) Dickson Kankaulya(Co-PI) Charlotte Mafumbo(Co-PI)
18	Land Acquisitions and arising Land Inequality in Rural East Africa	Dr. Resty Naiga

NEW PROJECTS AND GRANTS.

1. April 2023 – December 2026: Dr. Saudah Namyalo-Makerere University Principal Investigator: European Commission funded project titled: “Communicating Migration and Mobility: E-Learning Programmes and Newsroom Applications for Sub-Saharan Africa.”
2. Humanitarian Development Peace Nexus (EXPAND), Dr Eria Serwajja, Research Council of Norway.
3. August 2024-July 2025: Principal Investigator (PI): Makerere University Research and Innovations Fund (RIF) project titled “Support to the Makerere University Press for the Revitalization
4. “INIFIRES: Challenging intimate partner violence among young people in formal and informal relationships in Uganda”. It is funded by the UK Research and Innovation and is implemented in partnership with Teesside University, UK.’ The Ugandan PI is Dr. Eric Awich Ochen.
5. Enhancing Linguistic Scholarship in Eastern Africa (2024-2025): Dr. Saudah Namyalo- (<https://www.universiteitleiden.nl/en/news/2024/12/una-europa-project-update-enhancing-scholarship-in-eastern-africa-elsea>) Bantu Syntax and Information
6. The department of History was assigned: research Projects arising from the 39 objects returned to Uganda from University of Cambridge Project One (Bunyoro): Herman Muwonge (Assistant Lecturer) Project Three (Lango and Acholi): Zaina Nabirye (Assistant Lecturer) Project Four (Bukedi and Buganda): Zaina Nabirye (Assistant Lecturer) Project Five (Buganda): Christopher and Herman (Assistant Lecturers in the department) The research is critical, relevant and timely because it was conducted at time when Uganda has just passed a Museum and Monuments Act (2023) which is operationalized by the Uganda Museum and Monuments Department. The work will be a contribution to the wider international frameworks:
7. **Grant for the Master of Humanitarian Action Programme;** The College of Humanities and Social Sciences (CHUSS) is part of a seven-university consortium implementing the new Master of Humanitarian Action programme, funded by the European Union. The programme integrates social work and development studies, with courses collaboratively taught across partner universities. Makerere will host the third semester, facilitating global academic exchange and partnerships.
8. **Establishment of the Rotary Peace Center renewal 2024-2027,** Helen Nambalirwa Nkabala (PI), Veneranda Mbabazi (Co-PI), Samson Barigye (Co-PI), Dickson Kankaulya (Co-PI), Charlotte Mafumbo (Co-PI), Sylvia Anthonia Nannyonga Nakimera Tamusuzza (Co-PI), Masagazi Masazi (Expert-Curriculum and African Culture).
9. Volkswagen Foundation grant: Funds summer schools on “Humanities for Societal Transformation in Africa.”
10. Endangered Language Documentation Fund: Supports preservation of Batwa linguistic and cultural heritage in Semuliki Forest under Prof. Namyalo’s leadership.
11. **Gerda Henkel Foundation PhD Scholarships:** This grant supports 10 Lisa Maskell Fellows in Historical Humanities and Humanistic Social Sciences, covering tuition, living expenses, and accommodation for a three-year period starting in 2025.
12. **Grant from the US Department of State:** This start-up grant establishes the Great Lakes Centre for the study of the United States, coordinated by Dr. Kaweesi Sylvester, Prof. Omach Paul, and Prof. Kasaija Apuuli Philip.
13. April 2023 – December 2026: Dr. Saudah Namyalo-Makerere University Principal Investigator: European Commission funded project titled: “Communicating Migration and Mobility: E-Learning Programmes and Newsroom Applications for Sub-Saharan Africa.”
14. School of Languages, Literature and Communication August 2024-July 2025: Saudah Namyalo- Principal Investigator (PI): Makerere University Research and Innovations Fund (RIF) project titled “Support to the Makerere University Press for the Revitalization
15. School of Languages, Literature and Communication Enhancing Linguistic Scholarship in Eastern Africa (2024-2025): Dr. Saudah Namyalo- (<https://www.universiteitleiden.nl/en/news/2024/12/una-europa-project-update-enhancing-scholarship-in-eastern-africa-elsea>)
16. **Gender Equality Project** Funded by the Democratic Governance Facility (DGF), this project promotes gender inclusivity and equality in academic and institutional settings.
17. Interdisciplinary PhD Programme by the Gerda Henkel Foundation: The grant enhances graduate programme management and promotes cohort-based PhD training in Historical Humanities and Humanistic Social Sciences.
18. Mastercard Foundation Projects: “*In Search of Green Jobs*” (2023-2025): A collaborative project with the University of Cambridge and Restless Development to study youth employment aspirations and challenges.

19. *The Imprint of Education (TIE)* (2019-2024): A longitudinal study of African alumni of the Mastercard Foundation Scholars Programme, implemented by the Human Sciences Research Council in South Africa.
20. Research England's Higher Education Innovation Fund (HEIF). A seed grant supports the adaptation of a workplace-based mental health promotion programme for Uganda.
21. Mutuzo Irene Esther WUN Research Development Fund. Two grants were awarded for projects focusing on ethical AI and debiasing large language models using culturally diverse datasets.
22. The Africhild Inter-University Child Focused Seed Fund (Cohort Three Team), 2024. Khamisi Musanje : Principal Investigator, Makerere University team
23. Summer School on Wealth and Inequality, Dr. Resty Naiga Hosted by the School of Liberal and Performing Arts, this event focused on wealth disparities and attracted 100 participants from East Africa and the Global North.
24. Masters and Diploma in Security Strategy. School of Social Sciences Developed in partnership with the National Defence College in Kimaka, this programme targets military officers to promote regional stability.
25. Mutuzo Irene Makerere University Research & Innovations FY2024/2025 Dr. Martin Baluku - CO-PI .Prof. Grace Milly Kibanja - Research Supervisor, Nserenko Gerald Mukisa and Richard Ssewannonda - Research Assistant
26. Dr Agatha Tumwine: PEP and CALUFU grant from the French Embassy for training of secondary school teachers of French and integration of lucid activities for students of French in secondary schools.
27. Dr. Khamisi Musanje won the Terrance Higgins HIV Research Trust Funds to undertake specialised training at New York University.
28. MakRIF Research Projects: Impactful projects funded under the Makerere Research and Innovations Fund (MakRIF) include:
 - a. Mainstreaming Kiswahili for sustainable development.
 - b. Transforming Ugandan folktales into digital animations.
 - c. Promoting national symbols and values for patriotism.
 - d. Kicking out Sexual Harassment (KISH) initiative with an online reporting system and training, Prof Grace Bantebya kyomuhendo.
 - e. Enhancing school retention through community social labs and problem based fieldwork, Prof Janestic Twikirize & Prof. Eric Awich Ochen.

In June 2024, the department of History, Archeology and Heritage studies was assigned: research Projects arising from the 39 objects returned to Uganda from University of Cambridge

- Project One (Bunyoro): Herman Muwonge (Assistant Lecturer)
- Project Three (Lango and Acholi): Zaina Nabirye (Assistant Lecturer)
- Project Four (Bukedi and Buganda): Zaina Nabirye (Assistant Lecturer)
- Project Five (Buganda): Christopher Muhoozi and Herman (Assistant Lecturers in the department). The research is critical, relevant and timely because it was conducted at time when Uganda had just passed a Museum and Monuments Act (2023) which is operationalized by the Uganda Museum and Monuments Department. The work will be a contribution to the wider international frameworks including The 2005 UNESCO Convention on the Protection and Promotion of the Diversity of Cultural expressions and The National Cultural Policy, 2006 and the Museums and Monuments Act 2023.

RESEARCH DISSEMINATION

- The Kicking Sexual Harassment Out of Higher Education Institutions (KISH) project, launched in 2020, made significant progress in creating a safer academic environment, with findings shared during the endline dissemination on December 5, 2024. Key initiatives included KISH Student Clubs for female students, a Men's Hub for male participants, an online sexual harassment course, and an innovative reporting system. These interventions enhanced life skills, raised awareness of sexual harassment policies, and established effective reporting mechanisms, with the support of the Makerere University Research and Innovation Fund (Mak-RIF).
- Makerere University celebrated World Philosophy Day on November 21, 2024, in collaboration with the Uganda Philosophy Society and UNESCO. The public dialogue focused on "Philosophical Thinking for an Inclusive and Sustainable Future of Uganda."
- The 7th Annual Career Paths and Performing Arts Seminar, held on November 8, 2024, at Makerere University, inspired students from the Department of Performing Arts and Film to combine creativity with a business mindset. The seminar also showcased multilingual playmaking and photography, highlighting industry partnerships to enhance practical skills.

- The 2024 Archiving, Memory, and Method from the Global South International Conference, held from October 17-19, 2024, emphasized the importance of African nations reclaiming their historical archives from Western institutions.
- The 6th Capstone Conference, hosted by the Rotary Peace Center at Makerere University on October 18, 2024, celebrated the achievements of peace fellows and welcomed the 8th cohort.
- Makerere University hosted the “Wealth Inequality Research: Capacity Building in Higher Institutions in Africa” Summer School from September 16 to 22, 2024. Organized with the University of Duisburg-Essen (Germany) and the University of Michigan (USA), the event gathered 70 participants from 20 universities across East Africa.
- Makerere University and the Association of Translators and Interpreters celebrated International Translation Day on September 28, 2024, with a book launch. The event paid tribute to language professionals’ role in fostering international cooperation, peace, and development.
- Acclaimed Ugandan poet Susan Kiguli presented unpublished poems at a literary event on September 27, 2024, at the Onomo Hotel in Kampala. The event, organized with the Department of Literature at Makerere University, highlighted her bilingual collection “Weeping Lands / Terre Che Piangono,” which explores Uganda’s political history through poetry. The evening underscored the role of poetry in addressing social issues.
- On September 17, 2024, Makerere University hosted the 4th JICA Chair Programme for Japanese Studies, aimed at strengthening Uganda-Japan cooperation. The event, themed “History and Current Trends in Japan’s International Cooperation in Africa,” featured cultural performances, panel discussions
- The 26th Annual Media Convention, held on September 3, 2024, at Makerere University, focused on “Harnessing Artificial Intelligence (AI) and Social Networks to Combat Misinformation in Uganda.” The event, organized by the Department of Journalism and Communication and Uganda Communications Commission (UCC), featured keynote addresses and panel discussions on AI and social media’s impact on combating misinformation.
- The Archiving, Memory, and Method (AMM) from the Global South project held a symposium on August 22, 2024, in preparation for the AMM International Conference. The symposium gathered the core team to review abstracts for the conference scheduled for October 17-19, 2024. The AMM project, running since 2022, explores the intersection of archives with communities, institutions, and academia.
- On July 17, 2024, the U.S. Embassy in Kampala and Makerere University’s Department of Political Science hosted a discussion on the U.S. electoral process. Political expert Jerry Hagstrom, moderated by Dr. Edward Kaweesi, provided valuable insights into U.S. politics and democracy through a live virtual engagement.
- Makerere University celebrated International Mother Language Day on February 21, 2024, organized by the Department of African Languages. The event highlighted Uganda’s linguistic and cultural diversity and emphasized multilingualism’s role in social and economic development.
- On January 18, 2024, Makerere University hosted a workshop on reintegrating pregnant teenage girls into schools post-COVID-19 lockdown. The workshop disseminated research findings and strategies for addressing challenges faced by affected girls in the education system
- Dissemination activity for the RIF project ‘Integrating Performing Arts to Enhance Teaching/Learning of Math in Secondary Schools in Uganda’ led by Professor Sylvia Antonia Nannyonga Tamusuza.
- Choreo-Rhythmic provenance of Baakisimba dance as a living pedagogy meaning, memories, and methods: An embodied practical workshop, conference presentation during the Archiving, Memory and Method from the Global South Symposium. Conference presentation for AMM research project
- Dissemination of research output for the RIF project ‘ENOUGH! Vulnerability, Perseverance and Resistance in the 21st Century: A docu-drama film about lived-experiences of Survivors of Gender-Based Violence in Uganda’.
- Dissemination of research on ‘Building inclusion, imagination, identity, and interdisciplinarity: Indigenous Ugandan dances as archives of knowledge and meaning of being’. Workshop presentation at Dance and the Child International (daCi) conference, Slovenia, July 07th – 13th, 2024.
- Dissemination of research on ‘Our earth, our space, Africa Speaks’. Joint paper presentation with Lisa Wilson at Dance and the Child International (daCi) conference, Slovenia, July 07th – 13th, 2024.
- Dissemination of research on ‘A book project and three higher dance education study programme creations in Finland, Sweden and Norway’. Panel presentation for Nordic Forum for Dance Education (NOFOD) Conference, Oslo, Norway, April 25th, 2024.

COLLABORATION AND PARTNERSHIPS

MoUs with other Institutions

- MOU between Makerere University and KOBE University Japan.
- Makerere University and The Embassy of the United States in Uganda to Establish the Great Lakes Center for the study of the United States.
- MoU with the United Nations African Institute for Prevention of crime and treatment of offenders for institutional cooperation and collaboration
- Mou between Makerere on behalf of Institute for social research and Uganda Womens Writers Association for institutional collaboration.
- MoU between Makerere and 32EAST for the project of conducting empirical research to develop African Feminist narrative on the care economy and social reproduction.
- A collaboration Agreement between Makerere and Teesside university, university of Greenwich, Ryan Greece and CRAIG GIBBS

MOUs in the School of Liberal and Performing Arts

- Department of History, Archeology and Heritage Studies: The Erasmus+ Inter-Institutional Agreement with the University of Hradec Kralove 2023/2024-2025/2026. In 2024, the department had 4 students take up mobilities spent five months at the University of Hradec Kralove in the Czech Republic. At staff level, one professor visited the department and engaged in academic activities for two weeks.
- Department of History, Archeology and Heritage Studies: With the Aix Marseille University: The department had 1 mobility of a Ph.D. Scholar for six months. January-May 2024.
- Department of Development Studies: Two MA students received scholarships from the Certifications of Citizenship in Africa (CERTIZENS)
- Department of Religion and Peace Studies:
 - a) MoU between Maketrere University and the Rotary International for the Peace Center
 - b) MoU between Makerere University and the Uganda Police Force
 - c) MoU between Makerere University and the Uganda Prisons Services

MoUS in the School of Languageges, Literarure and Communication

- Signed an MOU with Uganda Civil Aviation Authority to offer language interpreting services in case of an emergency
- Initiated an MOU between Beijing Foreign Studies University and Makerere University
- Initiated plans for the establishing the King Sejong Institute

- Concluded an MOU with the Russian Speaking Women in Uganda. Have started teaching Russian Language (Free weekend lessons to Makerere University community)

MoUs Between the School of Social Sciences and Security Forces

The School of Social Sciences has established multiple Memoranda of Understanding (MoUs) with security forces to enhance academic training in defence and security studies.

- The **National Defence College (NDC) - Kimaka** has collaborated with Makerere University since 2014, with the current MoU under renewal for another 10 years. Curriculum revisions are ongoing for the **Master of Defence and Security Studies** and the **Diploma in Strategy and Warfare**. Additionally, a **new Diploma in Security Strategy** is being developed to provide training for officers who do not qualify for the master's programme, supporting regional security cooperation across East Africa.
- The **Ministry of Defence** and Makerere University have an MoU supporting the **Bachelor of Defence Studies at Kabamba**. The curriculum is under review for accreditation renewal, which is due by February 2025. A stakeholder consultation workshop was held on August 9, 2024, bringing together about 50 participants, including the principal.
- A **new Diploma in Security Strategy** is being developed at NDC Kimaka to accommodate senior officers with extensive military experience but without a bachelor's degree. The programme is already approved at the college level and is awaiting accreditation by the National Council for Higher Education. This initiative strengthens security training by including officers from Uganda, Kenya, Rwanda, Tanzania, Burundi, South Africa, and Malawi, promoting regional collaboration
- Choreo-Rhythmic provenance of Baakisimba dance as a living pedagogy meaning, memories, and methods: An embodied practical workshop, conference presentation during the Archiving, Memory and Method from the Global South Symposium. Conference presentation for AMM research project
- Dissemination of research output for the RIF project 'ENOUGH! Vulnerability, Perseverance and Resistance in the 21st Century: A docu-drama film about lived-experiences of Survivors of Gender-Based Violence in Uganda'.

- Dissemination of research on 'Building inclusion, imagination, identity, and interdisciplinarity: Indigenous Ugandan dances as archives of knowledge and meaning of being'. Workshop presentation at Dance and the Child International (daCi) conference, Slovenia, July 07th – 13th, 2024.
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- Dissemination of research on 'A book project and three higher dance education study programme creations in Finland, Sweden and Norway'. Panel presentation for Nordic Forum for Dance Education (NOFOD) Conference, Oslo, Norway, April 25th, 2024.

8. COLLEGE OF EDUCATION AND EXTERNAL STUDIES



CEDS

The College has three Schools and two Centres. These are: [School of Distance and Lifelong Learning](#), [School of Education](#), [East African School of Higher Education Studies and Development](#), [Centre for Teaching and Learning Support](#) and [Centre for Lifelong Learning](#).

The College is committed to the creation of a knowledge society and communities of practice, addressing issues arising from implementation of UPE and USE and the liberalization of higher education; increasing educational opportunities to many more adult learners; influencing policy formulation and review; responding to local and international development needs and protocols; and playing an active role in the community amidst competition yet maintaining quality in the programmes, services offered and graduates produced.

RESEARCH GRANTS

Table 22. List of the Research Grants

Name	Project Title
1. Dr. Paul Muyinda Birevu	<p>1. Project Team Member of the Korea International Cooperation Agency (KOICA) funded project titled: <i>Harnessing ICT in Education for Technological Innovation, Skills Development and Cultural Exchanges at Makerere University/The Project for Enhancing the Distance Education Environment at Makerere University in Uganda (PEDEEMak)</i>, USD 12,200,000, 2023-2025.</p> <p>2. Project Team Member of the Korea International Cooperation Agency (KOICA) funded project titled: <i>Capacity Building for Makerere University Staff on E-Learning, Teaching and Innovation</i>. A KOICA Capacity Improvement and Advancement for Tomorrow (CIAT-ON) Programmeme, USD 450,000, 2023 – 2025.</p>
2. Dr. Twine Bananuka	Won UGX 38Million MakALE Book Writing Grant from DVV International
3. Ms. Nuluyat Nalwadda	Won MakRIF Project UGX 113,224,000 January 2024.
4. Dr. Mbulankende Julius Shopi	Capacity Building of Teacher Educators in Competence Based Curriculum (CBC) in selected public Universities in Uganda’ Award amount 85M.
5. Dr. Buluma Alfred	<p>Won the following projects:</p> <ul style="list-style-type: none"> i. Co - PI on a project about “Capacity Building of Teacher Educators in Competence Based Curriculum (CBC) in selected public Universities in Uganda” under the MakRIF Round 5, 2023-2024. # Funding: \$22,945.58 ii. “Building capacity of Innovative Approaches to facilitate learning of foreign languages in the Competency Based Curriculum” under the MakRIF Round 5, 2023-2024. # Funding: \$ 12,456.17
6. Dr. Sikoyo Leah	<p>ATEVIL PROJECT</p> <p>Training of academic staff and students with visual impairment in inclusive teaching and learning with Technologies under the ATEVIL Project (Phase 2) 2023-2024</p>
7. Godfrey Mayende, Richard Kajumbula, Eva Mirembe, Grace Joy Nabude, and Paul Birevu Muyinda.	Provided technical expertise in instructional design and eLearning environment setup for the CoMMPASS EU Project 101082809 MOOC course
8. Dr. Josephine Esaete	Dr. Josephine Esaete, together with colleagues from CAES won a grant: Agroforestry forPeople and Climate (AfPEC), no. 2023- _000000100: Funded by DANIDA and housed in CAES.
9. Dr. Kalule John	Won a project entitled: Writing right: Enhancing Academic writing and Research Skills among graduate students in selected public Universities in Uganda.

COLLABORATIONS AND PARTNERS

- a) DVV International and the College of Education and External Studies.
- b) Open University and the Institute of Open, Distance and e-Learning.

DISSEMINATION CONFERENCES

A number of staff in the college have attended conferences both locally and internationally since the year started. The details are shared in the table below.

Table 23. List of Disseminated projects

	Name	Project Title
1.	Dr. Paul Muyinda Birevu	<p>1. Project Team Member of the Korea International Cooperation Agency (KOICA) funded project titled: <i>Harnessing ICT in Education for Technological Innovation, Skills Development and Cultural Exchanges at Makerere University/The Project for Enhancing the Distance Education Environment at Makerere University in Uganda (PEDEEMak)</i>, USD 12,200,000, 2023-2025.</p> <p>2. Project Team Member of the Korea International Cooperation Agency (KOICA) funded project titled: <i>Capacity Building for Makerere University Staff on E-Learning, Teaching and Innovation</i>. A KOICA Capacity Improvement and Advancement for Tomorrow (CIAT-ON) Programmeme, USD 450,000, 2023 – 2025.</p>
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4.	Dr. Mbulankende Julius Shopi	Capacity Building of Teacher Educators in Competence Based Curriculum (CBC) in selected public Universities in Uganda’ Award amount 85M.
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6.	Dr. Sikoyo Leah	<p>ADEVIL PROJECT</p> <p>Training of academic staff and students with visual impairment in inclusive teaching and learning with Technologies under the ADEVIL Project (Phase 2) 2023-2024</p>
7	Godfrey Mayende, Richard Kajumbula, Eva Mirembe, Grace Joy Nabude, and Paul Birevu Muyinda.	Provided technical expertise in instructional design and eLearning environment setup for the CoMMPASS EU Project 101082809 MOOC course
8	Dr. Josephine Esaete	Dr. Josephine Esaete, together with colleagues from CAES worn a grant: Agroforestry forPeople and Climate (AfPEC), no. 2023-_000000100: Funded by DANIDA and housed in CAES.
9	Dr. Kalule John	Won a project entitled: Writing right: Enhancing Academic writing and Research Skills among graduate students in selected public Universities in Uganda.

Table 24. List of Papers Presented in several Conferences

Name of staff		Conference papers presented
1.	Dr. Harriet Nabushawo	Presented a paper titled: “Student views on employability and entrepreneurship-enhancing strategies – insights from a UK -Uganda Higher Education international partnership”. Held at Blurring Boundaries Festival 2024 at the Open University UK.
2.	Dr. Stella Achen	Presented a paper titled: “Tailoring higher education to promote community transformation in Uganda”. The theme, “Advancing Higher Education Ecosystems for Competency Development”. At the International Consortium for Educational Development (ICED24) from June 5 - 7, 2024 at the United States International University - Africa in Nairobi, Kenya.
4.	Ms. Asiimire Priscilla	Presented a paper at the 15th International Interdisciplinary Conference at the Multi-Media University of Kenya from June 26th - June 28th 2024. Titled ‘German Adult Education Association as a Partner in University Adult Education at Makerere University, 1980s-2006’.
5.	Ms. Nuliayat Nalwadda	Attended online the World Learning Summit in March 2024 organised by the University of Agder, Norway
6.	Assoc. Prof. Paul Muyinda Birevu	<p>Muyinda B. P. (2024). Panellist in the Session on The Role of Technology in Expanding Access to Higher Education at The Mastercard Foundation Inaugural EdTech Conference. Transcorp Hilton Hotel, Abuja Nigeria, August 07-11, 2024.</p> <p>Muyinda B. P. (2024). Panellist in E-Learning in Post COVID-19 Africa. The 197th Episode of the Silver Lining for Learning Podcast. June 29, 2024. Available at https://youtu.be/BhzBoFakI84</p> <p>Muyinda B. P. (2024). Proposer (Panellist) in the e-Learning Africa 2024 Debate on the Motion, This House Believes that Traditional Education Institutions Will Become Obsolete in the Digital Age, Kigali Conventional Center, Kigali, Rwanda May 29 – 31, 2024/ Available at https://www.elearning-africa.com/conference2024/programmeme_debate.php.</p> <p>Muyinda B. P. (2024). Panellist E-Learning in Health Professional Education. HPE Conference 2024. Advances in Health Professions Education: Research, Innovations in Teaching & Learning, Quality Assurance. Hotel Africana, Kampala-Uganda, 17th -18th April 2024</p> <p>5. Muyinda B. P. (2024). Presentation of the Education and Sports Sector Digital Agenda Strategy 2024 - 2030 to the Hon Ministry of Education and Sports, Mama Janet Jataha Museveni. State House, Nakasero Kampala, Uganda, 15th May 2024</p> <p>6. Muyinda, PB, Attended and participated in the Inaugural Master Card Foundation edtech conference 2024. Conducted in Abuja, Nigeria.</p> <p>Muyinda PB was hosted on a podcast show focusing on e-learning, topic:e-learning in post covid -19 Africa.</p>
7.	Dr. Godfrey Mayende	Mayende, G., Nabude, G. J., & Muyinda, P. B. (2024) Pedagogical Skills in the 21 st Century: Emerging Trends and Approaches. Presented at the Strategic Leadership and Management Training Programmeme for Deans and Directors of Kabale University on 28 th March 2024 at Civil Service College Uganda, Jinja.
8.	Mr. Patrick Lugemwa	Joel Yawe Masagazi, Lugemwa Patrick, and Eve Mirembe, (2024). Pioneering On-line Assessment Solutions: Empirical Experiences From Educational Practitioners International Journal on Integrating Technology in Education (IJITE) Vol.13, No.2, June 2024; DOI:10.5121/ijite.2024.13201 1

9	Dr. Najjuma Rovincer	<ol style="list-style-type: none"> 1. USAID (2024) Potential Implementing Partners Coalition Building for the Teaching and Learning Crisis (APS) held at Sheraton Hotel Kampala from 11-15, May, 2024. 2. The International Pandemic Sciences Conference, held at the University of Oxford, UK from 30th June -2nd July, 2024.
10	Dr. Mbulankende Julius Shopi	The 2nd Annual MMU Research Conference. Mountains of the Moon University (MMU) Fort Portal 8th – 12 April 2024.
11	Dr. Buluma Alfred	<p>Buluma, A., Esaete, J., Walimbwa, M., Nabiryo, R. N., Mbulankende, S.J., & Kagoda, M.A. (2024). Education For Sustainable Development: Integration of Climate Change Mitigation and Environment Education in Teacher Education Programmes in Uganda. Paper Presented at the “<i>Architecture - man-made art in construction</i>” Conference held between 4 - 5th June 2024 at Turkmen State Architecture and Construction Institute.</p> <p>Session chair- Education symposium in the Second Mountains of the Moon University (MMU) Research Conference held between 8th to 12th April 2024, at MMU Lake Saaka Campus, Fort Portal City.</p> <p>Esaete, J., Buluma, A., Fahrenwald, C. (2023). Education for Sustainable Development (ESD) and Civic Engagement in Uganda. Paper Presentation at University Development Weeks November 10th 2023. Available: https://www.suedwind.at/oberoesterreich/termine-archiv/detail/education-for-sustainable-development-esd-and-civic-engagement-in-uganda/.</p> <p>Alfred Buluma. (2023). A shift to Competence Based Curriculum: Unlocking Potential for Technical Education in Uganda. Paper Presented at Industry 4.0 Competencies and Education systems Seminar at PSNA College of Engineering and Research, Dindigul, India on 16th August 2023.</p>
12	Dr. Kyasanku Charles	Attended monthly virtual seminars by the Africa-Asia University Dialogue, Hiroshima, Japan.
13	Paul Muyinda Birevu	<p>Muyinda B. P. (2024). Digital Leadership for Church of Uganda Education Institution Leaders. <i>A Paper Presented at the Church Of Uganda Heads Of Education Institution Annual. Conference.</i> 17th December 2024, Namirembe Cathedral, Kampala, Uganda</p> <p>Muyinda B. P (2024). Participant at the CARTA Supervisors’ Induction and Planning Workshop. Kamuzu University of Health Sciences (KUHES), Lilongwe, Malawi. July 29 – August 2, 2024</p> <p>Muyinda B. P. (2024). Panellist in E-Learning in Post COVID-19 Africa. The 197th Episode of the Silver Lining for Learning Podcast/ Available at https://youtu.be/BhzBoFakI84</p> <p>Muyinda B. P. (2024). Proposer (Panellist) in the e-Learning Africa 2024 Debate on the motion, This House Believes that Traditional Education Institutions Will Become Obsolete in the Digital Age, 31st May 2024/ Available at https://www.elearning-africa.com/conference2024/programmeme_debate.php</p> <p>Muyinda B. P. (2024). Panellist E-Learning in Health Professional Education. HPE Conference 2024. Advances in Health Professions Education: Research, Innovations in Teaching & Learning, Quality Assurance. Hotel Africana, Kampala-Uganda, 17th -18th April 2024</p>

a. Comprehensive Evaluation of Blended Learning (CEBL 2 Project)

Comprehensive Evaluation of Blended Learning Uptake for Graduate Training at Makerere (CEBL 2 PROJECT) Disseminated its findings to stakeholders on 20th May 2024 at School of Business Conference Hall, Block B, CoBAMS.

The Project PI IS Mr. Arthur Mugisha, Co-PI. Dr. Harriet Najjemba, Dr. Paul Birevu Muyinda/ Member, Mr. Joshua Bateeze / Member, Prof. Jessica Norah Aguti/ and Dr. Robert Aine. /Member.

The aim of the CEBL 2 project was to comprehensively evaluate Makerere's Blended Learning uptake for sustainability by establishing; the demographic characteristics of respondents, the current learner's Blended Learning status at Makerere, the learners' readiness for Blended learning pedagogy, learner satisfaction levels with Blended Learning pedagogy, Blended Learning cyber risks, challenges from a learner's perspective about Blended Learning at Makerere, potential solutions to the challenges as well as documenting an ideal Blended learning delivery approach which takes care of learners' needs and expectations.

INTERNATIONAL ENGAGEMENTS

International Olympiad: On **March 29, 2024**, four of our final year undergraduate students participated in The III Open International Internet Olympiad in the discipline "Strength of Materials" held at Turkmen State Architecture and Construction Institute. The students that participated are: Tumusiime Rebecca who emerged the second best candidate among 183 international participants. Other participants from Makerere University were Twinamasiko Gerald, Opio Livingstone, and Nansinjo Ephrance. All participants from Makerere University were awarded either a first or second class diplomas of Ministry of Education of Turkmenistan tenable at Turkmen State Architecture and Construction Institute.

CONFERENCES ORGANIZED



Boosting **C**ognitive **D**evelopment **T**hrough **E**arly **C**hildhood **N**utrition **E**ducation
In an ambitious move to enhance early childhood development, researchers from Makerere University's College of Education and External Studies are advocating for the integration of nutrition education into the training programmes for early childhood development (ECD) teachers. This groundbreaking initiative aims to equip future educators with essential knowledge and skills to foster healthy eating habits among young learners, potentially leading to significant improvements in their cognitive development,

To realize the University's ultimate goal of having an effective Open, Distance and e-Learning (ODEL) Environment, Makerere University Partnered with Master Card Foundation and acquired two high-end servers to support a repository of heavy files and videos.

b. Workshop on the commencement of an edited book project MakALE titled '**Contemporary Issues in Adult Learning and Education in Uganda**' 12th April 2024 in the Department of Adult and Community Education.

c. **DSTVE** organized and hosted a STEM Faculty workshop offered Tuesday May 21 – Thursday May 23, 2024. The objective of the workshop was to provide faculty with theory and methods for creating learner-centered instruction and improving undergraduate education in the STEM disciplines. The workshop was facilitated by a team from Brigham Young University led by Prof. Jennifer B. Nielson

academic performance, and long-term health outcomes. Led by Dr. Josephine Esaete, the research team highlighted the critical role of nutrition in the overall development and well-being of young children. Dr. Esaete emphasized that teachers, particularly those in early childhood education, have a unique opportunity to shape the eating habits and nutrition knowledge of their students. By incorporating nutrition education into teacher training programmes, educators can become powerful agents of change, promoting healthy behaviors that will benefit children throughout their lives.

CEPIDE Study Identifies Challenges and Solutions for Low Doctoral Completion Rates in Universities

A recent study by the Capability Enhancement Project for Innovative Doctoral Education at Ugandan Universities (CEPIDE) reveals significant challenges in the country's doctoral education system. The study, conducted over the period 2011-2024, underscores low conversion and completion rates among doctoral candidates in Uganda, raising concerns about the future of the nation's research and innovation capacity.

The study findings were released during a dissemination workshop held on May 30, 2024 at Makerere University. CEBL: Mak vision for blended learning is alive, Prof. Kakumba



Makerere University's vision for blended learning which was adopted during the COVID-19 lockdown in 2020, is on track, the Acting Vice Chancellor (VC) who doubles as the Deputy VC Prof Umar Kakumba has said. Prof Umar Kakumba said Makerere has already integrated Open, Distance and e-learning (ODEL) into the teaching and learning of students. He said the institution has ensured capacity building with two high-end servers installed to support the generation of course content.

"The servers are very powerful and will be enabling tools for lecturers during repository of heavy files, videos and other learning materials," DVC said. He was speaking at the dissemination workshop of Comprehensive Evaluation of Blended Learning (CEBL) Phase II at the university's main campus in Kampala recently. Researchers led by Mr Arthur Mugisha, the principal investigator (PI) of CEBL, conducted research to assess the e-learning model integrated into teaching and learning.

Government Asked to Make Fine Art Compulsory in Secondary Schools

Government through the Ministry of Education and Sports has been called upon to find ways of popularizing the subject of art and crafts in lower and higher secondary education. Prof. Anthony Muggaga, the Principal of the College of Education and External Studies at [Makerere University](#), said yesterday that the government should explore measures including making the subject compulsory. “We should have at least a module for one term like we have General Paper or computer,” he said. Prof. Mugagga believes that without



popularizing Fine Art, the education sector will continue churning out students who lack critical thinking. “Fine Art is what will cultivate a critical mindset amongst our learners. That is why we encourage children in nursery school to draw; we are trying to bring out what is in their minds,” he said. “It is the same reason that art is considered therapy for mental health patients. When they draw, they express what is taking place in their minds.” Prof. Mugagga was speaking at the launch of the findings of the pilot report for the Visual Arts Curriculum Review. Dr Julius Ssegantebuka from [Makerere University](#) College

of Education and External Studies and the lead researchers said the curriculum review project is intended to prepare secondary school art and design teachers, by equipping them with practical skills and values that match the modern world. “During this second phase of the project, we had trial lectures and discussions with the teachers. We also embarked on removing obsolete content and replaced it with new content and also separated some of the art disciplines that were formally combined,” he said. The updated curriculum he said, puts emphasis on research, group discussions, and field studies among others.

CHAKITAU calls for directive to make Kiswahili compulsory



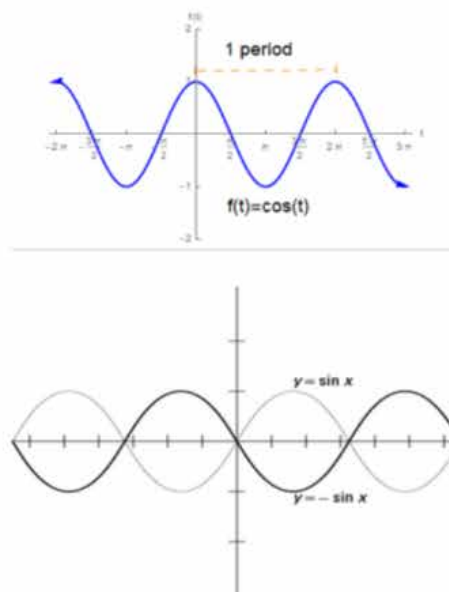
The association of Kiswahili speakers in Uganda through their umbrella body, CHAKITAU, have asked the government to pass a directive making the language compulsory in schools and higher institutions. CHAKITAU is a Swahili word which stands for Chama Cha Kiswahili Cha Taifa Cha Uganda. The members said if Kiswahili is integrated in teaching and learning at all levels, Uganda will then realize the East African Community goals and objectives. Dr Levi Masereka Kahaika, a lecturer of Kiswahili at Makerere, said the government should think about introducing the language at nursery level. This he believes will make learning Kiswahili easy since it is believed the learning rate among children is higher than their older counterparts.



Group photo of the participants

“Our research revealed that if a child is introduced to a language when he/she is still young, chances are high they will speak it fluently,” Dr Masereka said. He further noted that a child is capable of learning six languages at a time, and Kiswahili should be prioritized alongside English, the official language. “At the regional level, we are talking about free movement and free residency so we need to start now and everyone learns. CEES Researchers discover how Indigenous knowledge systems such as Ethnomathematics enhance teaching and learning school mathematics

On September 3, 2024, the College of Education and External Studies at [Makerere University](#) hosted a significant research dissemination event, presenting pioneering findings on integrating Indigenous Knowledge Systems (IKS) such as ethnomathematics in teaching and learning school mathematics. The research, funded by the Carnegie Corporation of New York through the [Makerere University](#) Directorate of Research and Graduate Training, highlighted innovative approaches to making mathematics education more relevant and accessible to students in Uganda.



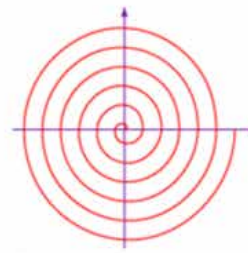
Ethnomathematics is an interdisciplinary field that explores the relationship between mathematics and culture. It investigates how different cultural groups understand, articulate, and apply mathematical concepts in ways that are often unique to their traditions and everyday practic-

es. Educators and researchers can bridge the gap between formal, academic mathematics and the diverse mathematical practices found in various cultural contexts by exploring ethnomathematics.

This approach can serve as a powerful medium for teaching and learning mathematics, offering several benefits such as cultural relevance in education.



- Algebraic Spirals: Spirals whose equations in polar coordinates are algebraic with respect to the variables ρ and ϕ -hyperbolic, archimedean, Galilean, parabolic spiral, and Fibonacci



Ethnomathematics helps make mathematics more culturally relevant to students by connecting abstract mathematical concepts to their real-world experiences and cultural backgrounds. This relevance can increase student engagement, making mathematics feel more accessible and meaningful. For example, students from agricultural communities may better understand mathematical concepts when they are presented using traditional farming practices, such as crop rotation patterns or land measurement techniques.

School of Education Holds Workshop on Reporting Research Findings for PhD Students



The School of Education, Department of Languages at [Makerere University](https://www.mak.ac.ug/), recently organized a highly impactful workshop aimed at enhancing the research skills of PhD students. The workshop, titled “Moving from Raw Data to Reporting Findings in Educational Research,” attracted over 40 doctoral candidates who are currently navigating the challenging terrain of academic research.

The event was graced by a distinguished panel of senior researchers who brought a wealth of knowledge and experience to the discussion. The panel included Dr. Leah Sikoyo, Dr. Reymick Oketch, Dr. Nambi Rebecca, Dr. Badru Musisi, Dr. Nicholas Itaaga, and Dr. Michael Gallagher, a Senior Lecturer in Digital Education from the [University of Edinburgh](https://www.ed.ac.uk/).



Theoretical Foundations in Research

COMMUNITY OUTREACH

U.S Ambassador William Popp calls on universities to build active citizens

The U.S Ambassador to Uganda William W. Popp, called on institutions of higher learning to groom and shape active citizens. The ambassador was delivering a keynote address at the Annual Prof. William Senteza Kajubi Fulbright Memorial Lecture, held on Thursday October 3, 2024 at Makerere University's Yusuf Lule Auditorium. "Higher education is not just about earning degrees; it is about cultivating the skills and values that create active, engaged citizens who can contribute to a better world," H.E. William W. Popp said.



Chairperson Mak Council Mrs. Lorna Magara (2nd L), Amb. William Popp, Ms Amy Petersen, and Prof. Barnabas Nawangwe after a short meeting.

Ambassador Popp emphasized the crucial role universities play in nurturing responsible citizens. By fostering debate, advocacy and governance participation, universities equip students with the tools needed for leadership in their communities and beyond. “Universities are essential for promoting civic participation, critical thinking, and informed citizenship—key components of a healthy democracy. A vibrant democracy relies on citizens who can engage constructively and

peacefully with each other and their leaders,” he explained.

He elaborated on how universities contribute to civic education by offering courses in disciplines like political science, history, and sociology. These programmes inform students about democratic systems, civil rights, and global issues, while also providing platforms for interaction with current and former political leaders, he said.



Mr. Wasswa Kajubi (flanked by family members) speaking on behalf of the family of Senteza Kajubi.

Ambassador Popp highlighted the importance of fostering critical thinking and debate. “By engaging in discussions around complex issues, students learn to form informed opinions and engage in responsible democratic discourse.” He noted that universities empower individuals through education,

internships, and student councils, laying the groundwork for active and informed citizenship. “History shows that universities are incubators of social movements, where students challenge the status quo and advocate for policies that benefit society.”

CEES Launches the MiSeT Project to Drive Socio-economic Transformation



Makerere University's College of Education and External Studies (CEES) has officially launched the Mindset Change and Socio-economic Transformation from the People's World (MiSeT) project, marking a significant milestone in the university's efforts to promote social change and national development.

The launch event, held at CEES, brought together a diverse group of academics, government officials, and community leaders to discuss the project's goals and anticipated impact. In her address, Dr. Nabushawo Harriet highlighted the transformative potential of the MiSeT project. "We are focused on shifting people's ways of thinking, behaviors, and approaches to problem-solving," she stated.

"This shift is essential for achieving meaningful transformation and making a substantial impact on people's lives." She underscored the importance of long-term projects funded by the Research and Innovations Fund (RIF) and expressed her appreciation

for the opportunity to conduct such impactful research. Dr. Nabushawo also mentioned the forthcoming publication funded by the principal, which will compile key findings from RIF-funded projects, serving as a valuable resource for future research and policymaking. Professor Anthony Muwagga Mugagga, speaking at the event, emphasized the necessity of changing mindsets that hinder development.

He stressed the importance of aligning the project's goals with Uganda's Vision 2040, which aims to achieve middle-income status. "To realize this vision, we must shift our mindset from what we already know to new, progressive ways of thinking," Prof. Mugagga remarked.

He also highlighted the role of social transformation, including parenting, in achieving this mindset change, and called for a deeper understanding of Uganda's anthropological environment and the protection of cultural values.

COLLABORATIONS & PARTNERSHIPS

Vice Chancellor Meets Delegates from German Adult Education Association



The Acting Vice Chancellor, Assoc. Prof. Umar Kakumba has welcomed a delegation from the German Adult Education Association (DVV International) led by the Board Chair Hon. Martin Rabanus. The delegation was in the country to assess the impact of their partnership with Makerere University and the community. DVV International and Makerere University, Department of Adult and Community Education have been partners since 1986. The support has been in the areas of teaching and learning. DVV International supported the development and launch of the Master of Adult and Community Education (MACE) in 2007. Makerere University has since graduated many who now work as lecturers in Higher Institutions of Learning, programme managers, development workers, adult education trainers

and so on. Before then, DVV International was supporting undergraduate students of the Bachelor of Adult and Community Education (BACE) with financial support towards internships and practical training during the Recess term of Year 2.

MoU between Mak and University of Boras
Dr. Kyasanku Charles initiated a MOU with the University of Boras – Sweden and School of Education, Makerere University. He is the Coordinator of this MOU.

Mou between Mak and Malmo University
The Department Foundations and Curriculum Studies has processed students' applications to participate in the staff and student exchange programme with Malmo University. The students are scheduled to travel in August 2024.

9. COLLEGE OF HEALTH SCIENCES

CHS



The College of Health Sciences (CHS) has approximately 3,300 students enrolled with a total of 31 graduate academic programmes. For instance, the School of Public Health (MakSPH) has steadfastly pursued innovation in the realm of academics. New programmes have been implemented and existing ones have undergone review to ensure their relevance. Additionally, new educational tracks have been established. In accordance with its mission to enhance the abilities of individuals in the healthcare industry, the school has also crafted short courses that address the specific skills and knowledge requirements of practitioners. The Master of Public Health (fulltime and distance education) has had its review process commenced. Meanwhile, the review process for the Master of Public Health (Monitoring and Evaluation) has commenced. The Master of Public Health in Disaster Management was reviewed and presented at Quality Assurance in September 2018, while the Master of Health Informatics was reviewed and is to be presented at Directorate of Research and Graduate Training. The Master of Public Health in Nutrition has been reviewed and is to be presented at the College. The Master of Environmental and Occupational Health has been approved. The MakSPH is expanding its academic offerings with the introduction of programmes, including a taught PhD in Public Health and a Master of Health Economics, ensuring its students are equipped with the latest knowledge and skills to tackle public health challenges in a dynamic and rapidly changing world.

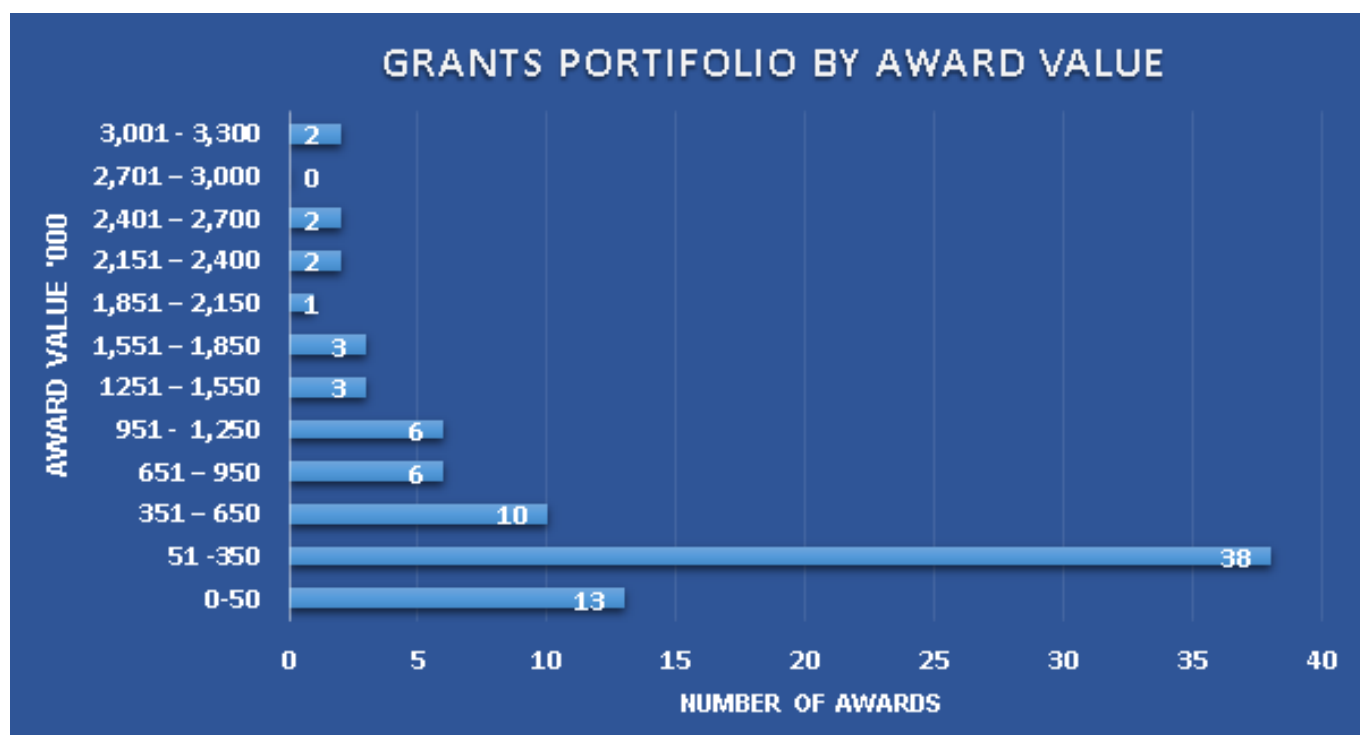
RESEARCH GRANTS

In the year 2024, there were 86 active awards recorded in the grants register. A total of 28 grant applications were submitted, and 17 new awards were achieved, as illustrated in the table below.

Description	No	Value
Awards Registered	86	\$59.7M
Applications submitted	28	N/A
New Awards	17	\$2.7M

The table below represents CHS grants composition by award value over the year ranging from Usd 50,000 to > Usd 3M. Only 19 grants exceeded a value of USD 951,000. It is recommended that researchers target funding opportunities of over \$1 million increase reputation, visibility in health research and sustainability.

Table ; Showing CHS grants composition by award value over the year ranging from \$50,000 to >\$3m



Portfolio of Grants Categorized by Remaining Performance Years

In 2024, 30 awards (35%) were completed, while 33 awards (38%) are projected to end in the next one to two years. The Unit is aiming for 40+ grants annually and plans to enhance unit capacities to meet the needs for research support services

Comparison of Grants to Research Agenda (RA) Thematic Areas

Grants were analyzed in relation to MakCH’s research agenda key focus areas to determine how well the grants align with these priorities. The results are presented in the table below;

L-R: Ibrahim Sseddangira, Mark Outeke and Mathius Amperiize

1	Infectious Diseases	29
	Neglected Tropical Diseases	0
2	Transitional Science	1
	Biomedical Research and Discovery	6
	Genetic Research	1
3	Population Health	1
	Climate Change and Health	0
	Health Systems Research	7
	Urbanization & Health	0
	Pollution	0
4	Non-Communicable Diseases	9
5	Maternal Health	7
	Child and Adolescent Health	5
	Sexuality and Reproductive Health Research	1
6	Mental Health	8
	Digital Health	3
7	Artificial Intelligence	0
	Big Data Applications	1
	Professionalism	
8	Health Professional Education	5
	BIO Ethics and Medico- Legal	2
TOTAL		86

Number of grants in the top 4 priority thematic areas #1 to #4 amounted to 54 (62%). Future funding strategies should be directed to;

- Neglected Tropical Diseases,
- Climate change and Health,
- Urbanization & Health
- Pollution

Grants in least priority research areas largely relate to health professional education.

MakSPH Students Win TB Fund for Innovation

These students, selected from Makerere University’s graduate programs, Mathius Amperiize, Ibrahim Sseddangira from the Master of Public Health (MPH) and Mark Outeke from the Master of Health Informatics—were awarded competitive research thesis funding under the D43 program supported by U.S. National Institutes of Health (NIH) through a partnership between Makerere University School of Public Health, and the University of Georgia. The three exceptional students had demonstrated academic excellence and a strong commitment to using technology to address complex public health challenges. The funding supported

their thesis work as they entered the second year of their master’s studies in the 2024/25 academic year. The initiative also equipped the young researchers with cutting-edge skills in digital health and geographic information systems to support Uganda’s efforts to improve TB surveillance, diagnosis, and care. Makerere University School of Public Health continues to champion digital health research, demonstrating strong leadership through its academic programs and strategic investments in innovation. With a firm commitment to nurturing the next generation of scientists, the School is shaping a future where technology drives transformative health solutions across Uganda and beyond.



L-R: Ibrahim Sseddangira, Mark Outeke and Mathius Amperiize

COLLABORATION AND PARTNERSHIPS

MakSPH Hosts Rockefeller Vice President for Africa

In 2024, MakSPH was honored to host Mr. William Asiko, Vice President of the Rockefeller Foundation's Africa Regional Office, during a reviewing ongoing Rockefeller-supported research and infrastructure projects, including the newly completed state-of-the-art auditorium on the Makerere main campus, where the Foundation supported its furnishing. Mr. Asiko praised the School's capacity and leadership in public health research, policy,

and education, noting its strategic role on the continent.

The Rockefeller Foundation has been a transformative partner since the 1950s—supporting faculty development, family planning and maternal and child health research, and the establishment of Uganda's MPH program through the Public Health Schools Without Walls initiative.

The Foundation is supporting MakSPH in becoming a Centre of Excellence in behaviour change in partnership with Africa CDC through its investment in a new Master's program in Health Promotion and Communication



L-R: MakSPH leaders; Dean Rhoda Wanyenze, Dr. Christine Nalwadda, Head, Community Health and Behavioral Sciences, Prof. Esther Buregyeya, Head, Disease Control and Environmental Health, Dr. J.B Isunju, the VAA-HNAP focal person and The Rockefeller's Gerry Gimaiyo and William Asiko, the Foundation's Vice President for Africa.

This program is jointly crafted by the School of Public Health (Department of Community Health and Behavioural Sciences) and the School of Languages, Literature, and Communication (Department of Journalism and Communication), designed with a myriad of stakeholders.

MakSPH remains deeply grateful for the Foundation's longstanding support, which has strengthened our capacity to tackle food security, climate change, and health system challenges across the region. CityMove also

convened over 500 stakeholders through virtual and in-person forums, stimulating dialogue and policy interest. KCCA is now actively investing in recreational cycling

and non-motorized transport infrastructure.

Beyond policy and practice, CityMove is building academic capacity. One PhD and

one master's students are contributing to research and data generation, reinforcing MakSPH's commitment to mentorship and local ownership.

CityMove Rooting for Healthier Urban Environments

Since January 2024, the CityMove Project has been at the forefront of transforming urban spaces into vibrant hubs for physical activity and healthier living. Under the leadership of Dr. Rawlance Ndejjo and Dr. Esther Buregyeya, this multi-city initiative is examining how urban design and policy can reduce the burden of noncommunicable diseases through increased physical activity. Spanning six cities across

Europe, Africa, and Latin America, CityMove brings together over 50 international researchers and nine partner organizations.

The project adapts the WHO Global Action Plan on Physical Activity (GAPPA) into locally scalable interventions to support more active and inclusive urban environments. In Kampala, CityMove is already catalyzing innovation through evidence-based research and strategic partnerships. It began with a comprehensive assessment of barriers and opportunities for active mobility, followed by stakeholder engagements examining gender and power dynamics in urban movement. These insights informed targeted actions on the ground.



Mr. Hakim from CityMove partner eBee during one of the Kampala Cycling Days.

In 2024 CityMove in collaboration with the Kampala Capital City (KCCA) launched Kampala Car-Free Day on September 7th. The event sought to promote walking and cycling, raised awareness about air pollution, and advocated for safer, people-centered streets. Monthly cycling events and a living lab—established in partnership with KCCA and eBee—have further fostered a culture of active mobility and riding safety.

CityMove also convened over 500 stakeholders through virtual and in-person forums, stimulating dialogue and policy interest.

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Beyond policy and practice, CityMove is building academic capacity. One PhD and

one master's students are contributing to research and data generation, reinforcing MakSPH's commitment to mentorship and local ownership.

10. SCHOOL OF LAW



SOL

The School of Law evolved from the Department of Law established in 1968 in the then Faculty of Social Sciences of Makerere University. It became a fully-fledged Faculty in 1973. In 2014, the School of Law was elevated to College status in accordance with the Universities and other Tertiary Institutions (Management of Constituent Colleges of Makerere University) Statute 2012. As a college, the School is run on three tier system i.e., the University, College and Departments.

The Human Rights and Peace Center (HURIPEC)

HURIPEC is a semi-autonomous department under the School of Law established by Makerere University in 1993, as the first human rights centre of its kind in Sub-Saharan Africa. Although several human rights-related subjects were already being taught at the Faculty of Law, HURIPEC was established solely to foster on teaching, research and activism on human rights and peace issues at the University. Since that time, not only has the number of subjects in the area expanded considerably, also the range of activities being pursued. The centre pursues a vision of contributing to the establishment of a human rights conscientized, educated, activist, academic society in Uganda and countries yonder. It seeks and has consistently engaged in events geared at promoting the understanding and respect for human rights, democratic governance and sustainable peace in the East Africa sub-region specifically and Africa generally through teaching, research, policy and advocacy.

The Public Interest Law Clinic (PILAC)

The Makerere University School of law Public Interest Law Clinic was established in January 2012, becoming the first Clinic established at a University in Uganda. PILAC seeks to promote hands-on experiential learning as well as exposing students to ‘live’ cases of individuals who have been confronted by the law in its varied manifestations. PILAC has established a Clinical Legal Education (CLE) programme, which is hands-on learning programme, intended to equip law students with public interest lawyering skills. The Public Interest Law Clinic seeks to promote a culture of social justice lawyering in Uganda by developing a consciousness amongst law students of the important role public interest lawyering plays in protecting the rights of ordinary Ugandans. To this end, the clinic trains students in strategic use of the law, including the use of national and regional mechanisms, to protect human rights, the public interest and promote social justice, while at the same time providing law students with the requisite legal skills, training and practical experience to become effective legal professionals. The CLE programme aims to train law students to fulfil their civic duties to the public on a long-term basis and contribute to cultivating a new generation of advocates fully equipped and committed to promoting the public interest and social justice as part of their civic duties.

The Center for Law and Emerging Technologies (CLET)

CLET was established in 2019 as an initiative for the Department of Law and Jurisprudence. It was set up to provide legal and policy solutions for the responsible adoption of the 4th Industrial Revolution (4IR) technologies. The new and emerging technologies and various scientific advancements are constantly giving rise to new issues in law, governance, and ethics. These issues need to be researched and debated upon in a constructive and informed manner if solutions are to be found that promote the public interest, accountability, legitimacy, social

equity, and inclusion. CLET seeks to provide a platform for such research and debate. Since emerging technologies present unique opportunities for Uganda; for example, ensuring transparency, accountability, legitimacy, and social control, which are key for efficient service delivery in the country, there is a need to assess and realign the legal and policy framework to ensure that there are sufficient protections to harness the benefits of these technologies, while mitigating the attendant risks. With funding from the Government of Uganda under the Research and Innovation Fund, CLET is

Undertaking research about how emerging technologies can enhance public service efficiency and accountability to transform public service delivery. The project seeks to promote high-quality interdisciplinary research, teaching, and engagements to discover approaches through which the law can facilitate the responsible use of emerging technologies to ensure efficient service delivery to the public. The project involved field work through Interviews are being conducted with different stakeholders such as Government agencies, ministries, registration services, financial institutions and private entities working in the area of emerging technologies to establish knowledge, gaps, challenges and opportunities for improvement. This will culminate into the production of a report. The Center is also set to conduct capacity building trainings for academics and public servants on the opportunities that emerging technologies present. In addition to this, it is undertaking career mentor facilitation for law students interested in emerging technologies and has supervised students on different research topics around 4IR technologies for their 4th year research papers.

The Refugee Law Project

The Refugee Law Project is a community outreach project of the School of Law, Makerere University. The project empowers asylum seekers, refugees, deportees, IDPs and hosts communities to enjoy their human rights and lead dignified lives. The project is mandated to 1) Promote the protection, well-being and dignity of forced migrants and their hosts; 2) Empower forced migrants, communities and all associated actors to challenge and combat injustices in policy, law and practice; 3) Influence national and international debate on matters of forced migration, justice and peace and 4) Serve as a resource for forced migrants and relevant actors.

The Business Law Clinic (BLC)

The Business Law Clinic (BLC) established in 2019, started out as a three year Pilot project of the Department of Commercial Law with funding through the Makerere University Research and Innovations Fund (RIF I) under the name ‘Transactional Law Clinic’ Pilot Project. The overall objective of the Clinic is to enhance the relevance of legal education and practice in addressing the legal needs of indigent persons, low-income earners, and not-for-profit business ventures.

The Clinic is founded on the notion that enhancing access to transactional legal services empowers communities and facilitates inclusive and sustainable development for Uganda. The BLC is also designed as an innovation to expand the use of clinical methods in legal education. Through experiential learning law students tackle issues of economic rights and economic development for community organisations, especially those which cannot afford transactional legal services. In 2019-2020, the Clinic enrolled 12 students. In 2021, the Clinical Curriculum was improved and disseminated. It is hoped that after dissemination, it will be adopted as a means of improving the teaching of commercial law subjects in the different Universities teaching law in the country.

Disability Law and Rights Centre (DLRC)

The overall objective of Disability Law and Rights Centre (DLRC) is to contribute to changing the legal profession in Uganda from one less committed to and aware of the needs

of persons with disabilities (PWDs) to one which is skilled and prepared to address the legal and human rights needs of PWDs. This will be achieved by influencing reforms in legal education which is expected to result into law graduates and eventually a judicial system which is committed and skilled to promote and protect the legal rights and needs of PWDs. This is to be achieved through review, development and change of curriculum to integrate disability issues into the different modules; enhance the skills of staff at the School of Law, as well as for the rest of Makerere University to engage disability lens in the teaching and conduct of their work; raising awareness of disability rights across the university and encourage and support disability-friendly interventions for learners with disabilities; conducting research on topical issues concerning disability rights, law and policy; developing teaching materials in the area; collaborating and networking with Disabled People's

Organisations (DPOs), government 53 ministries, departments and agencies as well as other stakeholders to promote the protection and realisation of the rights of persons with disabilities.



Round table discussion on regional peace and security within the Great Lakes Region of Africa

On 26 April 2024, the School of Law at Makerere University hosted Denmark's Special Representative for UN Security Council Candidature Mr. Holger K. Nielsen, to discuss prominent and emerging issues of concern on peace and security, climate change, women and vulnerable groups in the Great Lakes Region of Africa. He was accompanied by the Deputy Director in the Danish Ministry of Foreign Affairs' Department for Multilateral Cooperation, Ms. Julia Winding; The Ambassador of the Royal Danish Embassy in Uganda, Ms. Signe Winding Albjerg; The Deputy Head of Mission and Head of Cooperation of the Royal Danish Embassy in Uganda, Mr. Adam Sparre Spliid; and the First Secretary of the Royal Danish Embassy in Uganda, Mr. Anders Haue Korsbak. The round table was also attended by senior academic staff of

Makerere University who are experts on regional peace and security, gender and climate issues including: Prof. Sarah Ssali, Assoc. Prof. and DEAN, School of Women and Gender Studies, Prof. Kasaija Phillip Apuuli from the Department of Political Science and Public Administration; Mr. Godber Tumushabe, lecturer at the School of Law under the Human Rights and Peace Centre; Dr Sylvie Namwase, lecturer at the School of Law under the Department of Law and Jurisprudence; and Dr Tusasirwe Benson, Head of the Department of Public and Comparative Law. Dr Tusasirwe also represented the Principal of the School of Law as host of the roundtable meeting. The meeting was also attended by Ms. Patricia Namakula, the Director of Research at the Centre for Multilateral Affairs.



At the outset, the participants emphasized the importance of streamlining the Great Lakes Region’s peace and security concerns into relevant University curricula and at the School of Law in particular. They also highlighted the need to support more collaborative regional research and publication on peace and security.

Accomplishments at Environmental Law Centre

1. Development of Judicial Training Manual and Moot Court Competition on Wildlife Crime, Wildlife Conservation Society (WCS) - a USAID implementing partner under the Uganda Combating Wildlife Crime Activity, January to November 2024
2. Enhanced Taxation as a Solution to Uganda’s Single Use Plastic Waste Pollution Problem, International Centre for Tax and Development, University of Sussex, UK – November 2023 to October 2024. With the support from the International Centre for Tax Development (ICTD), the Centre developed a paper on the potential Role of Tax Policies in the Management of Uganda’s Plastic waste pollution problem.
3. With the support from the Wildlife Conservation Society (WLC) USAID Uganda Combating Wild Life Crime Activity, the Centre Developed a Judicial Training Manual for Magistrates and other actors on Wildlife Crime. The Manual was developed in consultation with the judiciary and in particular the Standards, Utilities and Wildlife Court, the Judicial Training Institute, Uganda Wildlife Authority, Office of the Director of Public Prosecutions, Uganda Revenue Authority and other actors drawn from academic and civil society.
4. Strengthening Coordination and Collaboration of one Health Approach and Human Rights in Uganda, Partner Afya Na Haki Institute. Start date May 1, 20204 to December 31, 2024.
5. Improving Environmental Results in Uganda- Partner Africa Institute for Energy Governance May 1, 2024 to December 31, 2024.

DISSEMINATION CONFERENCES

Dr. Dan Ngabirano -Presented a paper entitled “ Assessment of Uganda’s Tax System and the 2024 Traders Strike and Impact of EFRIS at the Uganda Human Rights Commission Annual Human Rights Report Technical Committee Retreat.

Presented paper on the Complexities of Uganda’s Property Tax Laws in Uganda at the Uganda Law Society Annual Tax Symposium, 6-7th June 2024.

Presented paper on the Implementation of International Tax Standards in Uganda at the National Lens Inception Event,

Institute of Development Studies, University of Essex, United Kingdom, March 5-6, 2024.

Consultative Meeting with DRGT

The Makerere University Directorate of Research and Graduate Training (DRGT) held a consultative meeting with the faculty of MakSoL. The discussion was centered on delivery of graduate programmes at the School, development of new programmes and how DRGT can support the School.



MakSoL and DRGT staff after the Consultative Meeting

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European University Institute's Academy of European Law Summer Course on Human Rights

Staff from MakSoL: Dr. Zahara Nampewo, Dr. Josephine Ndagire and Dr. Daniel Ruhweza attended the European University Institute's Academy of European Law Summer Course on Human Rights as resource persons

in Florence, Italy. Four LLM students from the MakSoL: Joel Senfuma, Chrispus Nampwera, Joseph Bampabura Maurice Kabazzi Lwanga also attended. The course held from 17-28 June, 2024 was organised through the Erasmus Mobility programme where the Institute supports staff and students of Makerere University teaching and training in higher education.



MakSoL Staff (L-R): Dr. Zahara Nampewo, Dr. Josephine Ndagire and Dr. Daniel Ruhweza at the Summer School



Dr. Daniel Ruhweza (2nd left) with the LLM students at the Summer School

Deepening Proactive Disclosure and Access to Information during Elections in Uganda

Deepening Proactive Disclosure and Access to Information during Elections in Uganda was co-authored by Dr. Daniel Ruhweza, Senior Lecturer and Head – Law and Jurisprudence Department, School of Law co-authored with Dr. Davis Mutesasira, UCU, Mukono. The report is an invaluable resource to electoral stakeholders to assess their performance with regard to compliance with the Guidelines and other international, regional and national frameworks on access to information. In undertaking State reporting obligations under Article 62 of the African Charter, Uganda should report on the progress made towards the fulfilment of its obligations under these instruments.

The Ugandan report is the fourth in the research series after South Africa (2019), Ghana (2020), and Tanzania (2020). The

initiative was commissioned by the Centre for Human Rights, University of Pretoria (the Centre), as part of a research series that assesses State compliance with the Guidelines on Access to Information and Elections in Africa (the Guidelines) adopted by the African Commission on Human and Peoples’ Rights (ACHPR) on 10 November 2017, during its 61st Ordinary Session. This normative instrument provides guidance to electoral stakeholders who have a duty to proactively disclose information in their possession or control towards enhanced election transparency, integrity and legitimacy. The electoral stakeholders identified in the Guidelines are: authorities responsible for appointing the Election Management Bodies; Election Management Bodies; political parties and candidates; law enforcement agencies; election observers and monitors; media and online media platform providers; media regulatory bodies; and civil society organisations.

Panel Debate on Uganda’s Just Energy Transition: Climate Change’s Decarbonisation Dilemmas, charcoal and conflict



Panelists: Dr. Mary Susan Abbo (L), Dr. Sylvie Namwase (C), and Dr. Brian Isabirye, during the debate.

MakSoL hosted a Panel Discussion Climate Change’s Decarbonization Dilemmas, Charcoal and Conflict on 24th, January 2024. The event was presided over by Hon. Dan Jorgensen, Minister for Development Cooperation, and Minister for Global Climate, as the Keynote Speaker. The panelists included: Dr Mary Susan Abbo, Centre for Research in Energy and Energy Conservation (CREEC), Makerere University; Dr Sylvie Namwase, Human Rights and Peace Centre (HURIPEC), Makerere University, School of Law; Dr Brian Isabirye, Commissioner for Renewable Energy, Ministry of Energy and Mineral Development.

The panel debate explored how global climate change policies shape local energy transition and environmental affairs, such as charcoal politics. How energy transition affects socio-economic dynamics in energy-stressed countries down to local levels, and how to manage conflicts that may arise from transition. The debate was driven under four main themes, including: How does global climate policy, in particular the outcome of COP28, shape the direction for energy transition and climate action in Uganda and Africa more broadly?; What does Uganda's energy transition look like – the path from charcoal and unsustainable biomass to modern, clean and affordable energy?; What social and political dynamics and conflicts may top-down (i.e. internationally and state-level

decided) changes to the biomass/charcoal value chains in Uganda cause?; and How can peaceful and equitable pathways to energy transitions be developed to limit emissions and support local livelihoods?

Contribution to Human Assisted Reproductive Technology Bill, 2023

Former CLE students who had reviewed the Human Assisted Reproductive Technology Bill, 2023 appeared before the Health Committee of Parliament on 8th May, 2024 to present their views on the Bill. It is hoped that this process will contribute to the shaping of the final outcome of the Bill.



CLE Students with members of Health Committee of Parliament

COMMUNITY OUTREACH

Police Training on Juvenile Justice

A police training on Juvenile justice organized by Public Interest Law Clinic (PILAC) in collaboration with the Danish Institute for Human Rights (DIHR) was held on the 24th January 2024, at the Naguru Police Headquarters. The training was aimed at developing knowledge, understanding, attitudes and skills of police officers in the administration of Juvenile Justice so that every child who comes into contact with them is treated as we would want our own child to be treated, while observing the beat interest principal of a child and also enable police Officers have a better understanding of national and international laws that relate to Juvenile offenders and how they should be applied.

Judicial Officers trained on Juvenile Justice

A training of Judicial Officers on Juvenile justice was organized by Public Interest Law Clinic and was held at Piatto Restaurant, Lumumba Avenue on the 22nd January, 2024. The training was aimed at developing knowledge, understanding,

enhancing individual performance which should in turn result in the delivery of quality and timely justice as regards juveniles. The training was attended by 18 (Eighteen) Judicial Officers and moderated by His Worship Faisal Mulaliira who guided the flow of the discussion and concluded the discussion with the participants raising questions from the discussion.

CLAPMOC Outreach at Luzira Prison

Third year LLB students under the Community Law Programmeme and Mobile Clinic (CLAPMOC) of PILAC in partnership with Rotary Club of Port Bell and FIDA Uganda implemented a community outreach activity on 11th April 2024 to provide legal aid services to female prisoners in Luzira prison. The outreach was intended to cultivate a dynamic environment for dialogue and idea exchange among stakeholders and prison officers, highlighting the pivotal role of prisons in upholding and advancing the rights of women within the criminal justice system. By facilitating interactive sessions, our goal is to equip participants with the knowledge, skills, and attitudes necessary to champion women's rights in their day-to-day activities.



Female prisoners interacting with PILAC team

Creating Awareness on Arbitration among Students

MakSoL partnered with the Arbitration Fund for African Students (AFAS) based in the United Kingdom, and hosted arbitration awareness event for High School and University Students. The awareness events were held on

18th - 20th April 2024. Dr. Patricia Atim coordinated the events on behalf of the School of Law. Professor Emilia Onyema, University of London, United Kingdom and Professor Chrispas Nyombi of the University of Derby, United Kingdom are coordinating on behalf of AFAS.



AFAS, MakSoL team with students and staff of Our Lady of Good Counsel High School after the arbitration training

Joint Arbitration Training on the nature of arbitration and alternative dispute resolution (ADR) was attended by 120 individuals including 100 students from Makerere University and Our Lady of Good Counsel High School. Issues discussed included: relevance in the legal system, some basic principles on party autonomy, Nature of commercial disputes; why resolve them? How do we resolve commercial disputes? Description of arbitration, mediation, and med-arb; role of disputants, lawyers, experts, institutions, administrators,

arbitrators, national courts, and the final award consensual nature of arbitration; arbitration agreement; appointment of arbitrators; arbitral procedure and enforcement; mediation.

The teams trained will support creation of Secondary Schools and University Arbitration Clubs to be supported by AFAS. Stakeholders from Chartered Institute of Arbitrators also attended the events and expressed willingness for further collaboration with Mak.

University of Western Ontario, Canada delegation visits MakSoL

On 20th March 2024, MakSoL hosted a delegation from University of Western Ontario, Canada led by President and Vice-Chancellor, Professor Alan Shepard accompanied by Vice-Provost and Associate Vice-President, Dr. Lily Cho and Associate Vice President of Equity, Diversity and Inclusion, Dr. Opiyo Oloya. The purpose of the visit was to present the Research Portfolio & Opportunities for Collaboration between the two institutions.



L-R: Dr. Zahara Nampewo – Ag. Deputy Principal MakSoL, Dr. Ronald Naluwairo – Ag. Principal MakSoL, Dr. Anthony Kakooza – Ag. Head-Commercial Law, MakSoL with Dr. Opiyo Oloya - Associate Vice President of Equity, Diversity and Inclusion, University of Western Ontario.

