10 YEARS of Lung Science & Health

MAKERERE UNIVERSITY LUNG INSTITUTE

mli

10 Years of Makerere University Lung Institute

A Decade of Advancing Lung Science and Health for all through Research, Training and Clinical Care

Dei BioPharma

MHS MICROHAEM SCIENTIFICS

SIMBA group

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URA Uganda Revenue Authority DEVELOPING UGANDA TOGETHER

zydus Dedicated To Life

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Who we are

Established in 2015, the Makerere University Lung Institute (MLI) has established itself as a centre of excellence in respiratory health. With a strong focus on cutting-edge research, high-quality clinical care, practice-based education, and policy advocacy, MLI has significantly influenced pulmonary health in Uganda and beyond. Over the past decade, MLI has played a crucial role in tackling the burden of lung diseases through innovation, strategic partnerships, and a steadfast commitment to improving health outcomes.

Mission

To conduct lung health research that integrates disease prevention, clinical care and training in Sub-Saharan Africa.

Core Values

Innovation, Excellence, Integrity, Care, and Effort norm.

Slogan

Science for healthy lungs

Summary

The Makerere University Lung Institute (MLI) was established in 2015 with a vision to champion lung health through research, training, and care. The Institute was established following signing of a Memorandum of Understanding between Makerere University and the Lung Consortium International, Limited. Over the past decade, the Institute has grown into a centre of excellence in respiratory health in Uganda and the wider region advancing evidence-based interventions, nurturing the next generation of lung health specialists, and shaping policy through impactful research.

As we celebrate MLI@10, this commemorative booklet captures our journey of growth, resilience, and innovation. It highlights the milestones achieved in research, clinical care and training. From humble beginnings as a small team sharing a dream of an Africa with healthy lungs, to today's thriving institution serving over 6,000 patients annually, the Institute continues to make a remarkable contribution to lung health.

MLI researchers have led groundbreaking studies on tuberculosis, asthma, chronic obstructive pulmonary disease, and emerging infections such as COVID-19 and Mpox, that have influenced policy and practice.

Training and education remain at the heart of our mission. Through flagship initiatives such as iBreath, the Research Administration and Management Programme (RAMP), and Evidence-Informed Decision Making (EIDM), MLI has strengthened health systems and empowered hundreds of healthcare professionals, researchers, and administrators with practical skills and confidence to improve respiratory health outcomes in Uganda and across Africa. The monthly Day of Lung Science and Weekly Journal Research Conferences continues to foster collaboration and continuous professional development across borders.

Our story is also about the people that have contributed tremendously towards this success. The dedicated staff, fellows, interns, clients and partners whose commitment and passion has sustained our progress. Through their work, MLI has built a strong foundation for specialized respiratory care, contributed vital research to the global scientific community, and enhanced Uganda's capacity to respond to public health challenges.

This 10-year milestone is both a celebration and a reaffirmation of our purpose: to promote lung health and improve lives. As we look to the future, MLI remains committed to excellence, innovation, and partnerships that will shape the next decade of lung health in Africa and beyond.

We extend our heartfelt appreciation to our collaborators, funders, and friends whose support has made this journey possible. Together, we look forward to building on the successes of the past decade and achieving even greater impact in the years to come.

This 10-year milestone is both a celebration and a reaffirmation of our purpose to promote lung health and improve lives.

Foreword

Dr. Simon Walusimbi

Chairperson, MLI@10 Organising Committee

It is with immense pride and gratitude that I present this magazine commemorating ten years of the Makerere University Lung Institute (MLI). This milestone, captured under the theme, *"A Decade of Advancing Lung Science and Health for all through Research, Training and Clinical Care"*, represents not only a celebration of time but also a reflection of vision, resilience, and collective achievement.

When the idea of MLI@10 was first conceived, our goal was to honour a decade of scientific excellence and to showcase how far the Institute has come since its founding in 2015. The journey towards this celebration has been one of collaboration, creativity, and reflection. As the Organising Committee, we set out to design a platform that would not only celebrate the Institute's achievements but also reaffirm its role in shaping the future of lung health in Uganda and the region.

This magazine and the series of events marking MLI@10 have provided an opportunity to highlight the people behind the progress – scientists, clinicians, students, and partners who have contributed to building a strong, vibrant, and globally recognised institute. It has also been a time to look ahead, to imagine the next decade of breakthroughs, partnerships, and innovations that will continue to transform respiratory health outcomes.

I wish to extend my heartfelt gratitude to the Co-Chairs of the MLI@10 Organising Committee–Dr. Ivan Kimuli and Dr. Damalie Nalwanga; and every other member of the committee for the tireless efforts and creativity in planning and executing this commemoration. I also acknowledge the unwavering support of the MLI leadership, the Board of Directors, staff, and our many collaborators both local and international whose guidance and contributions have made this celebration possible.

As we celebrate a decade of impact, may this moment remind us of how far we have come, renew our commitment to scientific excellence, and inspire us to reach even greater heights in the years ahead.

Dr. Simon Walusimbi (MD. PhD)
Chairperson, MLI@10 Organising Committee
Makerere University Lung Institute

Assoc. Prof. Bruce J. Kirenga

Founder and Director, Makerere University Lung Institute

Marking ten years of the Makerere University Lung Institute is a profound moment of reflection, gratitude, and renewed purpose. What began as a vision to address the growing burden of respiratory diseases in Uganda has, in a decade, grown into a thriving centre of excellence that integrates research, training, and patient care to improve lung health nationally and globally.

From its humble beginnings in 2015, MLI has built an impressive record of achievement. We have led groundbreaking studies on tuberculosis, asthma, chronic obstructive pulmonary disease, and emerging infections such as COVID-19 and Mpox. Our partnerships have expanded across continents, our researchers have informed global health policy, and our training programmes have nurtured a new generation of African scientists passionate about lung health.

This publication stands as both a tribute to our founders' vision and a chronicle of the dedication of those who turned that vision into reality. It documents the research milestones, innovations, and human stories that have shaped the Institute's journey. More importantly, it reminds us that the true measure of our success lies in the lives improved and the knowledge shared.

As we celebrate this 10-year milestone, we also look ahead to the next chapter, one defined by the expansion of our facilities, deeper partnerships, and continued commitment to advancing respiratory health through science and innovation. I extend sincere appreciation to the MLI@10 Organising Committee for curating this commemoration, and to all our staff, collaborators, funders, and well-wishers who have supported us along the way.

Together, we will continue to build a future where every person breathes freely, supported by evidence, compassion, and the power of science for an Africa with healthy lungs.

Assoc. Prof. Bruce J. Kirenga
Founder and Director
Makerere University Lung Institute

Prof. Charles Ibingira

Chairperson, Board of Directors, MLI

It is with great honour and pride that I and the fellow board members join the Makerere University Lung Institute (MLI) family and its partners in commemorating ten years of remarkable Vision of growth, innovation, and impact in advancing lung health in Uganda.

Over the past decade, MLI evolved from a visionary idea into one of the most vibrant and respected centres of excellence in respiratory health in Africa. Established in 2015, the Institute was born out of the need to address the growing burden of lung disease and to strengthen local capacity for research, clinical care, and training. Ten years later, MLI stands as a shining example of what strategic leadership, collaboration, and scientific integrity can achieve.

This 10-year milestone offers a fitting opportunity to reflect on the Institute's contributions from groundbreaking research in tuberculosis, asthma, and chronic obstructive pulmonary disease, to its rapid and impactful response to emerging infections such as COVID-19, Ebola and Mpox. MLI has not only influenced national and global policy but has also inspired a new generation of scientists and health professionals committed to improving lung health across the continent.

As Chair of the Board of Directors, I take great pride in the dedicated leadership of the Institute, ably steered by the Director and his team, whose unwavering commitment continues to push the frontiers of science and innovation. I also acknowledge all our partners, academic institutions, government agencies, funders, and communities whose support and collaboration have been central to this growth and success.

As we celebrate MLI's ten years of impact, let us also celebrate ten years of possibility.

Let us look forward with courage, ambition, and unity of purpose.

We are not just marking the past of MLI, we are announcing the future of MLI.

A future where lung health is not a privilege but a right.

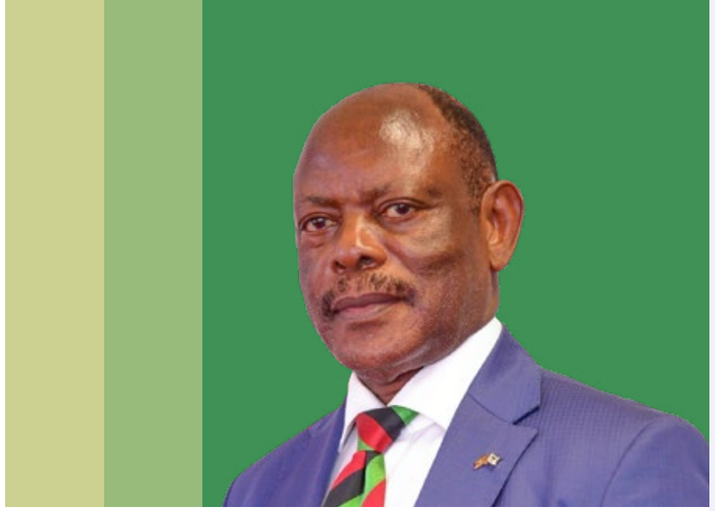
A future where Uganda leads Africa in pulmonary science.

A future where Makerere University Lung Institute stands as a beacon of excellence, innovation, and hope.

Prof. Charles Ibingira
Chairperson, Board of Directors
Makerere University Lung Institute

Prof. Barnabas Nawangwe

Vice Chancellor, Makerere University



Ten years ago, the Makerere University Lung Institute (MLI) opened its doors with a bold but measured ambition: to confront the growing burden of lung disease in Uganda and sub-Saharan Africa through world-class research, high-quality training, and collaborative partnerships. What began as a small team of committed clinicians, scientists and administrators working in borrowed space has steadily evolved into East Africa's leading centre of excellence in lung health research, clinical care, and capacity building.

This publication marks that remarkable journey. The pages that follow tell a story few could have fully envisioned when the Institute was established in 2015.

Over the decade, the Institute has published influential findings on biomass smoke exposure, led landmark studies on tuberculosis, asthma, COPD, COVID-19, and post-infectious lung disease, and forged partnerships across Africa and beyond. From a handful of emerging investigators, MLI has now mentored fellows, students, and young scientists who are influencing lung health policies, research, and clinical programmes across the continent. These achievements reflect persistence, vision, collaboration, and the belief that robust African science must serve the communities that need it most.

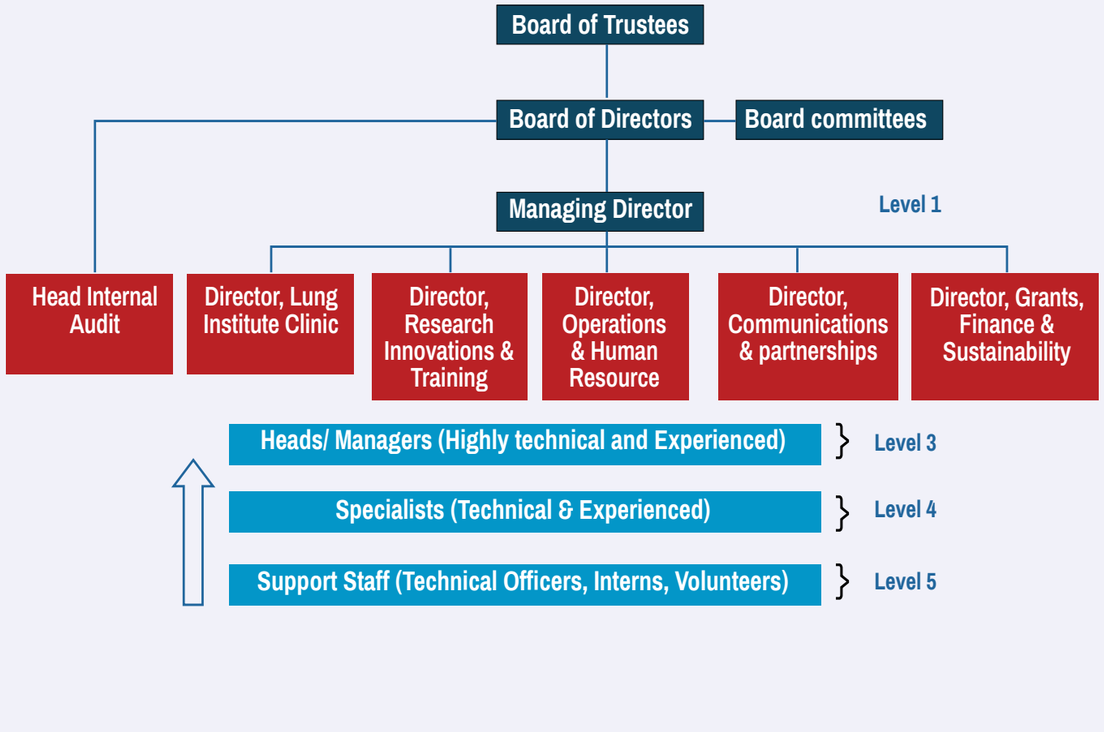
This magazine is not simply a record of grants awarded, papers published, or equipment procured, importantly, it is a tribute to the people who made this progress possible, the patients who trusted us with their experiences, the students who devoted their careers to improving respiratory health, the technicians and support teams who kept research running in challenging circumstances, the communities who welcomed us year after year, and the partners and funders who believed in MLI even before its potential was fully realised.

As we step into the next decade, the challenges remain significant. Air pollution is increasing, tuberculosis continues to evolve, non-communicable respiratory diseases are rising, and climate change threatens to worsen them all. Yet we face the future with renewed confidence because the foundation laid over the past ten years is strong, and the MLI community is more capable and vibrant than ever.

On behalf of Makerere University, I congratulate the leadership, staff, students, collaborators, supporters, and friends of the Makerere University Lung Institute. May this publication inspire continued excellence, innovation, and commitment to improving lung health for generations to come.

Prof. Barnabas Nawangwe
Vice Chancellor
Makerere University

Governance



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Assoc. Prof. Bruce J. Kirenga

Mr. Hudson Wampamba Musoke

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Mr. Sebugwawo Marvin Paul (Company Secretary)

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Assoc. Prof. Bruce J. Kirenga

Mr. Henry Mwebe

Dr. Henry G. Mwebesa

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Dr. B.B Byarugaba

Assoc. Prof. Bruce J. Kirenga

Dr. Isaac Okullo

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Prof. Ponsiano Ocama

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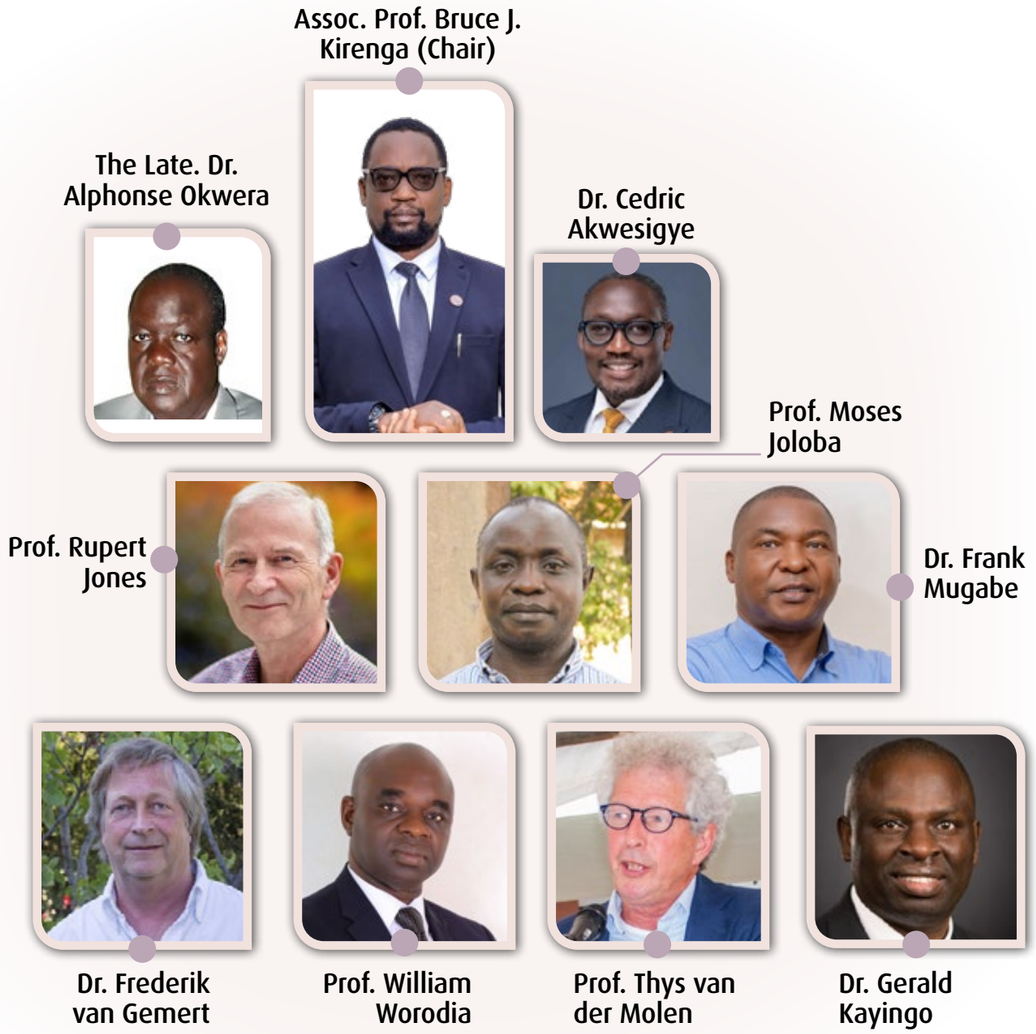
Institute Technical Board (2016 – 2019)

Senior Management Team

Lung Consortium International

Lung Consortium International (LCI), is a not-for-profit research group registered in Uganda whose aim is to improve lung health of people in resource limited settings through awareness creation, reduction of exposure to risk factors, provision of cost-effective treatments and training of high caliber community lung health care professionals. Together with Makerere University, the LCI signed a Memorandum of Understanding to create the Lung Institute to address the high lung disease burden in Uganda.

Members of the Consortium



LUNG CONSORTIUM INTERNATIONAL

SEBUGWAWO
& COMPANY ADVOCATES

Your Legal Partner in Growth

About Us

Established in 2015, Sebugwawo & Company Advocates is a leading law firm in Kampala, Uganda, celebrating **10 years of excellence** in 2025. We specialize in **Corporate & Commercial Law**, **Banking & Finance**, **Litigation & Dispute Resolution**, **Real Estate**, **Tax Advisory**, **Immigration & Employment**, and **Intellectual Property**. Our dedicated team provides timely, practical, and high-quality legal solutions to both local and international clients.

Vision

To be the law firm of choice in Uganda and beyond.

Mission

To deliver unparalleled, professional, and ethical legal services focused on client satisfaction.

Core Practice Areas

- Corporate Governance, M&A, Regulatory Compliance
- Banking, Finance & Securities
- Civil, Commercial & Criminal Litigation
- Arbitration & Alternative Dispute Resolution
- Tax Advisory & International Taxation
- Real Estate, Conveyancing & Land Transactions
- Immigration, Labour & Employment Law
- Family Law, Trusts & Estates
- Intellectual Property Protection

Our Team

Our team includes seasoned partners, associates, and legal professionals with expertise across all practice areas. We combine deep local knowledge with international experience to serve a diverse clientele, from individuals to multinational corporations.

A Note of Congratulations

Sebugwawo & Company Advocates extends our warmest congratulations to the **Makerere University Lung Institute (MLI)** on its **10th anniversary**. We are honoured by our long-standing advisory partnership and celebrate your profound contributions to health and research in Uganda.

Celebrating a decade of integrity, excellence, and client-focused service.

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Generation of Evidence that Shapes Policy and Practice Globally and Nationally

MLI has generated groundbreaking evidence that has reshaped understanding of lung diseases in Africa and influenced global guidelines.

INNOVATION IN ACTION: Addressing Africa's Unique Challenges

MLI develops contextually appropriate solutions to respiratory health challenges specific to low-resource settings.

EPIDEMIC LEADERSHIP: Uganda's Frontline Response Hub

MLI has positioned Uganda as a leader in African epidemic preparedness through rapid-response research during COVID-19, Ebola, and mpox outbreaks.

CAPACITY BUILDING: Training the Next Generation

MLI's comprehensive training programmes are building a critical mass of lung health professionals across East Africa.

Dr. Rebecca Nantanda is a paediatrician, Senior Research Scientist and Director Research, Innovations and Training at MLI. She is one of the leading paediatric lung health researchers in Uganda and she is also a founder and co-chair of the Childhood Pneumonia Working Group of the International Union Against Tuberculosis and Lung Health (The Union) and the Uganda Ambassador to the INternational Society of Pediatric REspiratory Diseases (INSPiRED) congress.

Capacity strengthening of lung health professionals

For over a decade, MLI has transformed respiratory healthcare capacity in Uganda and East Africa through comprehensive training programmes. The flagship iBreath programme addresses critical gaps by training primary healthcare workers in respiratory disease management, reaching facilities where over half of patients present with respiratory complaints. Through resident rotations, MLI has trained over 100 specialists across multiple disciplines, while Day of Lung Science (DOLs) sessions have engaged 3,870 participants in research dissemination and continuous medical education.

MLI's capacity-strengthening efforts extend beyond clinical care through the Research Administration and Management Programme, which trained 43 research administrators, and Evidence Informed Decision Making training, which directly influenced national policies. The Institute has also developed numerous research fellows and interns into skilled professionals. MLI's multi-tiered approach creates a sustainable ecosystem of lung health expertise, strengthening both clinical service delivery and research capacity while fostering regional collaboration to address Uganda's significant respiratory disease burden.

Training/ Capacity building in numbers

- 1 Graduate Trainees
- 70 Medical Student Rotations
- 43 Research Administration & Management Training Programme (RAMP)
- 44 Communications
- 25 Quality Control/ Assurance
- 34 Spirometry
- 3,870 DOLS
- 132 ICER MPOX
- 17 iBreath
- 40 Smoking cessation
- 5 Sleep training
- 15 Bronchoscopy
- 510 COVID-19
- 315 SUDV/ EBOLA
- 18 Interns
- 79 Others

5,472 People trained over the years

Filling Gaps in Clinical Excellence in Lung Care

For a decade, MLI's research and training initiatives helped close critical gaps in lung health services in Uganda and ensuring people with lung diseases receive timely, quality and compassionate care.

MLI's survey among primary care health workers, specialist clinicians, and healthcare planners revealed knowledge gaps and training needs in diagnosis and management of respiratory diseases. Although respiratory symptoms were reported to be extremely common among patients, only a few primary care health workers felt very comfortable performing respiratory care procedures like pulse oximetry, nebulization, and interpreting chest x-rays. More than half of the primary care health workers were not comfortable in managing chronic respiratory diseases like asthma and Chronic Obstructive Pulmonary Disease (COPD). Whilst the pre-service training curriculum covered a wide scope of respiratory diseases, the actual training was insufficient in preparing health workers to handle respiratory symptoms. Many healthcare workers reported recent participation in in-service training but rarely focussed on respiratory diseases.

Having identified the huge knowledge gaps in providing basic care to patients with respiratory diseases, MLI responded by designing iBreath, a training programme aimed at strengthening the capacity of health workers in primary care health facilities in diagnosis and management of respiratory diseases.

iBreath Training Programme

The iBreath training programme is an in-service training programme for primary healthcare workers to help them provide quality respiratory health services competently, safely and efficiently.

iBreath Trainees at the Mulago Guest House

iBreath fills glaring gaps in service and training

The burden of chronic respiratory conditions in Uganda is high – about 1 in 6 people (age 30 and above) live with COPD and more than 1 in 10 people (age 12 and above) live with asthma. More than half of people seen in primary care health facilities have respiratory complaints. Yet, human resource capacity to manage lung-related illnesses remains limited. The iBreath programme contributes towards reducing the care gaps for people with respiratory diseases by providing mentorship to clinicians and nurses in primary care health facilities.

The iBreath programme focuses on respiratory health, integrating chronic disease management, patient-centered care, and team-based approaches. The training is guided by a curriculum that was informed by science, research evidence and findings from the training needs assessment survey. The curriculum is modular, allowing participants to select modules relevant to their needs, and includes both theoretical and practical components across the core content (see textbox) and is delivered by Ugandan and international experts. The programme combines an intensive phase of training at MLI (3-5 days) followed by self-directed learning and mentoring for participants upon returning to their workstations. The trainees document their respiratory care practices following training, successes and challenges in journals. Mentoring uses multiple approaches including on-site visits, telephone calls and e-mails. Pre- and post-training tests, review of the respiratory care journals and observations during mentorship visits help evaluate the impact of iBreath.

Demonstrating during iBreath training

iBreath trainees along with the CIPLA team and MLI/BU Facilitators

Course content:

- Asthma
- Chronic Obstructive Pulmonary Disease (COPD)
- Occupational Lung Diseases
- Pediatric lower respiratory tract disorders
- Pneumonia
- Tuberculosis
- Reading and interpretation of X-Rays
- Spirometry
- Disease prevention
- Epidemiology
- Chronic care approaches
- Patient-centred care
- Communication

iBreath envisions improved care and collaboration

The iBreath initiative contributes to fostering a lung health training network in Eastern Africa, improving healthcare and encouraging collaboration among health professionals. By the end of the programme, participants are expected to competently diagnose and manage people who present with lung health complaints, organize health services for chronic respiratory diseases and provide health education for prevention of lung diseases.

One of the iBreath trainees receiving his certificate (L-R, Dr. Rebecca Nantanda, Assoc. Prof. Bruce J. Kirenga and Dr. Gerald Mutungi)

Rotations & Electives

Apart from training clinicians and nurses in primary care health facilities, MLI is contributing to strengthening clinical care and research for lung health through programmes that target professionals under-going formal training. Residents from the departments of Internal Medicine, Family Medicine, Paediatrics and Child Health at the College of Health Sciences in Makerere University have 4-week rotations at the Lung Institute Clinic as part of their graduate training. During rotations, they get to observe, learn and acquire skills in management of respiratory diseases under the guidance of the pulmonologists.

During rotations, residents acquire academic, practical knowledge and skills for specialised respiratory care. They learn how to conduct tests like lung volume and spirometry; diagnose different lung health conditions; manage chronic lung conditions; and handle prescriptions considering diverse needs of patients. We teach residents strategies for the cessation of smoking and sleep medicine, including how sleep studies are conducted and interpreted. Residents can harness their skills in reading and critically analyse respiratory health research publications as well as their presentation and public speaking skills through MLI's Journal Research Conference.

Rotations at MLI have attracted residents beyond the common disciplines (mentioned above). Over the years, doctors specialising in Ear-Nose-Throat and Ophthalmology have completed rotations at MLI. Nearly 100 residents have received training at MLI clinic as part of their graduate training. In addition, MLI provides training in clinical care and research through elective placements of graduate students from various Colleges at Makerere and other universities in Uganda and East Africa.

Maximising learning under Covid-19 restricted conditions

Dr. Mary Goretty Kuteesa

Rotation at MLI Lung Health Clinic

November 2020

I am a paediatrician, research fellow and project coordinator at Makerere University Lung Institute. When pursuing a Master of Medicine in Paediatrics at Makerere University, I learned about rotations at MLI through the Paediatrics Postgraduate Course Coordinator at the College of Health Sciences. Dr. Rebecca Nantanda was my supervisor during the rotation. I enjoyed most conducting spirometry and participating in the Journal Research Conference.

My rotation happened during the Covid-19 pandemic, alongside two other paediatric residents on rotation at MLI. Social distancing was necessary and only one resident was allowed in paediatric clinic at a time. The paediatrician together with one resident did clerkship to reduce personal interaction with the patients. After the consultation was done, we discussed as residents, and I always asked questions about the case so as to understand better what transpired in the consultation room and derived takeaway points.

Despite the restrictions that social distancing standard operation procedures imposed on my rotation, I was able to attain practical knowledge on pulmonary function tests. The rotation at MLI paediatric clinic helped me deepen my understanding of respiratory health and equipped me with knowledge and skills of handling children with lung diseases as well as growth in research interest through the Journal Research Conferences which inspired me to pursue a career in lung health and research. Following the rotation, I have become a research fellow at MLI affiliated with the paediatric research group supporting the ACCA study - Improving Asthma Care for Children and Adolescents in Uganda.

My three top tips for students looking for a rotation at MLI:

- Communicate early enough with MLI so that the supervisor is ready to receive and plan for you
- Develop goals and a programme before the rotation so that supervisors can help you maximise your rotation at MLI
- Lobby Makerere University to allocate more time at MLI to enable you appreciate lung health in children at a deeper level

Hands-on experience for a career in Pulmonology

Dr. Ivan Lume

Rotation at MLI Lung Health Clinic

May – July 2025

I am pursuing a Master of Medicine - Internal Medicine at Busitema University. Given the increasing number of people with pulmonary conditions in Uganda, I developed an interest in Pulmonology and hope to contribute to care and research in this field. I learned about rotation training opportunities at MLI through a colleague who had completed his attachment there.

The learning environment at MLI is conducive. I had a great time learning from my supervisor, Dr. Winceslaus Katagira, and the team of specialist doctors, nurses and spirometry technicians who were so welcoming and generously shared their knowledge and skills with me. This enabled me to explore the field of Pulmonology comprehensively and to achieve my academic targets. I learned to conduct spirometry sessions and full interpretation of spirometry results to conclusion for different conditions.

Executing all the required roles and expectations, including clinic duties, journal club presentation and spirometry training, within a short time seemed tricky. However, with the help of the team, I succeeded in getting along with the schedules so fast.

The rotation at MLI helped me gain a deeper understanding of Pulmonology, equipping me with hands-on skills and knowledge about a wide range of lung diseases. I learned to operate essential tests, especially spirometry, and hope to inspire colleagues back in the University and Hospital to seek spirometry training and offer this essential test to the patients in need.

My top three tips for students looking for a rotation at MLI:

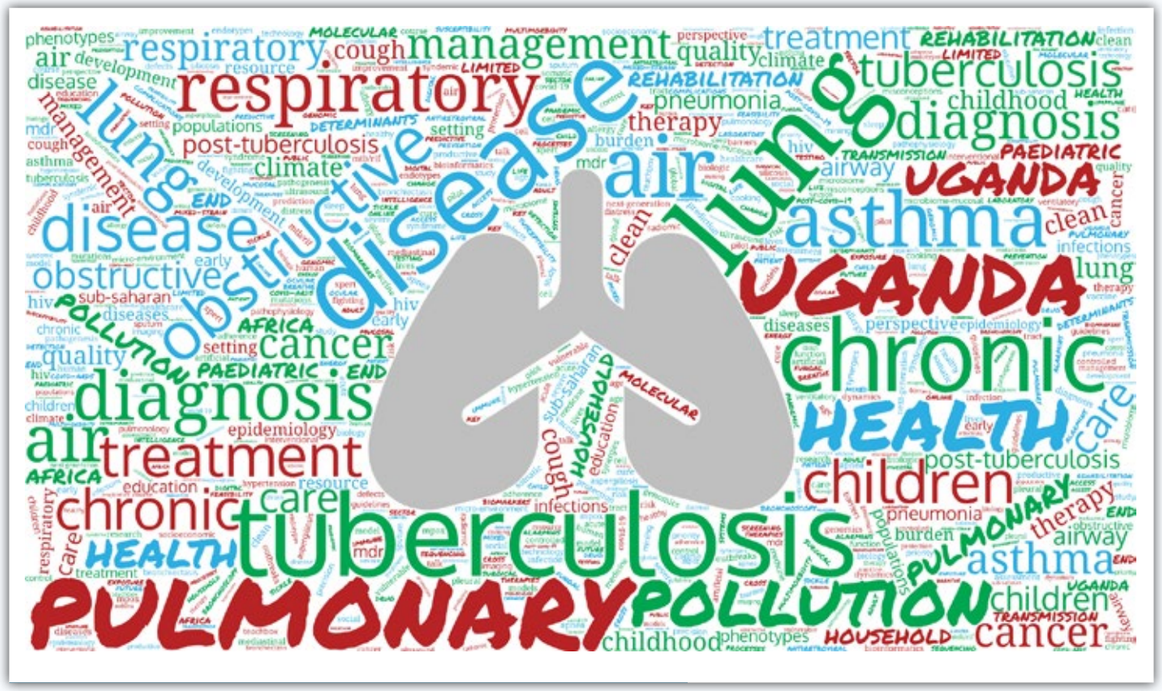
- Have an open mind and be ready to learn
- Learn hands-on at the MLI clinic providing care for people who present with various pulmonary conditions
- Maximise the platforms that MLI offers to interact, learn and polish your skills and knowledge in Pulmonology.

Day of Lung Science (DOLS)

For scientists who are not in training, and the general population, MLI provides a platform for learning and contributing to lung science and awareness about respiratory problems through monthly sessions dubbed, Day of Lung Science. The sessions are delivered virtually by local and international experts and cut across topics that focus on deep science on respiratory diseases, research findings and their implications for policy and clinical practice, as well as general information on prevention of lung diseases and promotion of respiratory health as shown in the word cloud below.

For clinicians, Day of Lung Science serves as a platform for Continuous Medical Education, awarding Continuing Professional Development points to doctors (registered with the Uganda Medical and Dental Practitioners Council) when attending a session. Since May 2016, over 160 experts from Uganda and over 10 countries, including Canada, Germany, Ghana, Kenya, Netherlands, South Africa, Spain, UK, and the USA, among others, have contributed as speakers or moderators to the continuity and success of the sessions. Day of Lung Science has attracted a national and international audience of over 3,870 participants cumulatively to date.

Prof. Annettee Nakimuli presenting at a DOLS session in September 2018



Research Administration and Management Training Programme

RAMP TRAINING — RESEARCH ADMINISTRATION AND MANAGEMENT TRAINING PROGRAMME

With support of the Liverpool School of Tropical Medicine through the LIGHT Consortium, three MLI staff undertook the Research Administration and Management training Programme (RAMP) trainer of trainers and are certified to conduct RAMP trainings.

Two in country sessions were conducted in March 2024 and August 2025 in which over 40 research administrators, managers and finance officers at the Makerere University Lung Institute, Makerere University School of Law, Makerere University School of Women and Gender Studies, MUJHU Research Collaboration; Mbarara University, National TB & Leprosy Programme, Uganda Case Western Research Collaboration; and WALIMU were trained.

RAMP is organised as a 3-day, certified training that seeks to enhance administrative, finance and management skills of research administrators for international research partnerships categorised as below:

- **Administration,** covering diary management, meeting organisation, minute taking, file naming, version control, and travel logistics
- **Management,** including project management cycles, risks management, safeguarding, M&E and tools like log frame and Gantt chart.
- **Finance,** comprising budgeting, forecasting, reporting, and audits.

The success of the programme is supported by feedback from trainees in both sessions, describing it as a key tool needed as world moves to focus on targeted research for development.

> *"I gained deeper knowledge & skills in grants project life-cycle, specifically the pre-award phase... I liked how developing log frame & gantt chart were simplified through the practical exercise."* ***(Participant 2025)***

> *"I realized that safeguarding is an important aspect in research as a protection tool for participants, research team and institutions involved."* ***(Participant 2025)***

RAMP Uganda Cultural Evening, August 2025, Entebbe

RAMP in numbers

2
RAMP trainings conducted in Uganda

3
Modules – Administration, Management, and Finance

21
Subject areas

9
Institutions in Uganda reached

43
Participants trained; 28 Females and 15 Males

> *"The training was highly enriching. It deepened my understanding of research administration, strengthened my capacity to support teams, and exposed me to best practices. I appreciated the practical sessions, clear facilitation, and networking with colleagues. Overall, it was a valuable learning experience that enhanced both my confidence and competence in my role."* ***(Participant 2024)***

> *"I found the modules explaining the roles and responsibilities of research managers and administrators specifically enlightening. They clarified how administrative functions underpin the entire research lifecycle—from proposal development and contract management to reporting, communication, and closure. This helped me appreciate the broader ecosystem within which administrators operate, and how effective administration contributes to transparency, institutional credibility, and successful project delivery."* ***Participant 2024***

MLI RAMP trainers at RAMP in Malawi, March 2023

Trainees participating in an exercise during the RAMP Uganda, March 2024

Learn more about RAMP

Evidence Informed Decision Making

MLI helped expand the reach of Evidence Informed Decision Making (EIDM) training that was initially developed by the African Institute for Development Policy (AFIDEP). EIDM aims to enhance policymakers' capacity to effectively engage with new research findings and improve their knowledge and understanding of maximizing research uptake.

A participant making an elevator pitch on policy briefs during the EIDM training in Entebbe, August 2025

In August 2022, MLI and AFIDEP trained 12 mid- and senior-level managers from the Ministry of Health National Tuberculosis and Leprosy Programme and Non-Communicable Disease Programme. During the 5-day training, participants appreciated impactful training components such as accessing through systematic searches, pitching for a policy issue, writing and presenting policy briefs. Participants learned how to develop policy briefs and draft policy recommendations to strengthen their influence as champions for more holistic, inclusive, and person-centred prevention and care.

Participants from the National TB Programme with facilitators from MLI at the EIDM training in Entebbe, August 2025

> *"We were able to analyse the most recent TB Prevalence survey and effect changes in the CAST programme - we learnt to look for implications of data."*

> *"Originally, we would just focus on changing TB treatment regimens but since the training, we go beyond this; we look at what it takes to implement that regiment beyond the efficacy. For instance, what it takes the patients to access the treatment."*

In October 2023, four selected mid-level technical officers from the Uganda National Tuberculosis and Leprosy Programme participated in an EIDM Training of Trainers alongside their peers from Kenya, Malawi and Nigeria. This AFIDEP-led training equipped participants to popularise EIDM within their institutions, to transfer essential knowledge and skills to their colleagues, and to integrate research evidence into public health decision-making. The training was followed by nine-month mentorship to reinforce and support the practical application of EIDM skills learned.

Researchers from the National TB and Leprosy Programme during training

As a result of this initiative, participants published a policy brief titled, *"Enhancing Integrated Community TB Case Finding and*

Prevention Strategies to reduce the Burden of Tuberculosis in Uganda", on Uganda's community-based awareness, screening, testing, prevention, and treatment programme to end tuberculosis, dubbed CAST. After presenting the policy brief to the Communicable and Non-Communicable Diseases Technical Working Group in the Ministry of Health, it was recommended for discussion by the Ministry's Senior Management Committee. In addition, the EIDM trainers at the National Tuberculosis and Leprosy Programme conducted a 5-day EIDM training with 20 colleagues in August 2025 and plan to cascade the training to other departments within the Ministry of Health, Regional TB Supervisors and healthcare workers using existing learning platforms.

Learn More about EIDM

Learn More about EIDM

Read the policy brief inspired by EIDM

EIDM Policy briefs

Researchers communications training, June 2024

Annual Researchers Retreat, Fairway Hotel, June 2024

Internship and Graduate Training

Over the years, MLI trained 19 interns and graduate trainees in research and administrative roles. We interviewed some of the interns and graduate trainees to highlight their experience and views of working with MLI.

From the laboratory to research with human participants

Ms. Irene Najjingo

Internship at MLI, department of Education and Training, June -August 2016

While pursuing a Master of Science in Clinical Epidemiology and Biostatistics at Makerere University, I learnt about MLI through Dr. Simon Walusimbi, a senior Researcher at the institute. In my pursuit for the Internship Placement for my master's course, he advised that the Lung Institute as an outstanding Research Institution would offer me the opportunity to grow my research career.

Coming from a laboratory background, the internship at MLI offered me a different experience outside the lab. After four years of confined laboratory work, I contributed to research involving human participants for the first time. I was tasked to conduct interviews in homesteads in Busoga region under the supervision of Dr. Rebecca Nantanda. Since I had never been in this region, I enjoyed the work in the community which exposed me to a new culture different from the Buganda culture I had learned all my childhood.

Designing a data collection tool for a multi-country clinical trial was one of the difficult tasks during my internship. I had never developed a data collection tool and didn't know how to formulate questions and structure them. When I read the trial protocol, every statement on its 60 pages appeared to me like it needed a question for the participant to respond to. The data manager by then Mr. Rogers Sekabira guided me and helped me understand that all I needed was to go through the objectives and methods to develop the data collection tools.

At MLI, I quickly gained new knowledge and skill in research involving human participants. I learnt about ethics, and voluntariness. I acquired transferable research soft skills, for example, to always read and understand the objectives before designing the questionnaires and pre-testing tools before any data collection is done to ensure comprehension. I also learnt to integrate laboratory medicine in real life patient care through relating the cause of disease by asking who is affected, why they are affected, when they are affected and what control measures are available.

The advice given since 2016 has become reality. As MLI has developed over the years, so have I – from the initial steps as an intern, I have grown to become an MLI research fellow coordinating research projects. My skills and knowledge have extended beyond the lab, encompassing social determinants of health and patient-centred care, among others. I attribute my progress to mentorship from senior researchers at MLI. The institute offers a favourable environment for researchers to progress including webinars, Journal Research Conference, support for junior researchers to present at international conferences, capacity building, career development and training sessions by Dr. Rebecca Nantanda

who is always mindful of researcher's progress and identifies training needs. I am now pursuing a PhD in Epidemiology at the University of Bergen, Norway which is a key achievement for both myself and MLI.

My three top tips for students looking for an internship in health:

- Look out for institutions that engage in research, clinical care, education and community outreaches for holistic professional development
- Understand that handling all patients in the same way is unhelpful because all patients are unique even when they have similar conditions
- Offer patients more than treating the presenting symptoms and think broadly about how, what, where, when and how healthcare workers offer care

Hand's on research experience and skills

Ms. Shivan Nuwasiima

Internship at MLI Research & Innovation Department

September – October 2022

When pursuing a Master of Science in Clinical Epidemiology and Biostatistics, I learnt about the MLI internship opportunity through our administrator at the Clinical Epidemiology Unit, School of Medicine. My fellow students, who completed their internship placement at MLI, encouraged me to apply. I succeeded and was offered an internship in the Research & Innovation Department, supervised by Dr. Winceslaus Katagira.

MLI provides a good working environment with tutors that are very approachable and willing to teach internship students like me. At MLI, I learnt how to use digital data collection tools, develop research proposals, perform data analysis and participated in MLI's Journal Research Conference sessions.

I did not face any significant challenges during my placement. My main task was a study on health problems persisting after an initial period of COVID-19 infection, known as Long COVID, and associated risk factors. I conducted an intensive literature review on COVID-19 through PubMed and Google Scholar and reviewed clinical records of 1,023 patients, of which 52 met the eligibility criteria for the protocol. Patient demographic and clinical characteristics were obtained from the 52 patient files and data cleaned. I analysed data as part of the placement and presented the report to my placement supervisor.

The skills and experience in health research gained through the internship at MLI, helped me to undertake my master's research project. Later, I got the opportunity to return to MLI as a biostatistician/ epidemiologist, attached to the Partnerships for Enhanced Engagement in Research (PEER) COVID-19 study titled *"The impact of COVID-19 on school enrolment and mental health of children in the Manafwa Watershed area in Uganda"* (2022-2023). Currently, I work with the Makerere University Non-Communicable Diseases Research Team.

My top tip for epidemiology graduate students is to apply for internship at MLI if you want to get hands-on experience in health research.

Charisma and Commitment

Mr. Gombya Andrew Edward

Internship at MLI, Operations/ Procurement, February - September 2023

After graduating with a Bachelor of Business Administration from Kyambogo University, I conducted an internship with the Operations/ Procurement department under the supervision of Mr. Simon Mugambe the Chief Operations Officer.

I got to know MLI during the most challenging times globally – COVID-19 – when its name was on all media platforms and television for pioneering COVID research and care in 2020. During my last year at the university, I had to look for an internship placement to execute my classroom theory in practice. I enthusiastically applied for a chance to work with this pronounced institute and was accepted. The entire MLI staff welcomed me warmly, and the internship at MLI boosted my career.

As an intern, I learned to utilize my time well, follow my office to do list, and complete the task in time. Although some tasks were monotonous or challenging, like scanning of procurement files that could keep me standing for hours on the printer, I felt being part of the organisation and helping the team increase efficiency and effectiveness and meet the required deadlines. MLI recognised my commitment and promoted me to become a Procurement Assistant in 2023.

My internship magnified my professional skills and knowledge. I gained skills in handling real life challenges when applying theoretical knowledge from lecture rooms and principles from institute manuals in different situations. Working as an intern in a lung research institute, made me enhance emotional intelligence and communication skills through the interaction with different people – from administrative, finance, clinical, and research staff.

My three top tips for students looking for an internship:

- Make broad research on the organisations you want to apply to and be passionate about their work
- Keep your CV updated exemplifying charisma, professional knowledge, and technical skills
- Demonstrate an exceptional level of dedication and ability to adopt and thrive in a fast-paced and challenging environment.

Attention to detail and the big picture

Ms. Mucyo Jesca

Graduate Training at MLI Administration Department

September 2024

Holding a Master of Arts in Economics from Annamalai University, India, I began my training at MLI in September 2024. Under the supervision of Ms. Jackline Nakabira, I have gained experience across Finance, Procurement, Stores Management, and Administration.

When I learnt about MLI through a friend from the School of Medical Sciences, I was inspired by their impactful work. Motivated by this, I applied and was fortunate to be offered a training opportunity, which I gladly accepted. At MLI, I gained valuable hands-on experience and was able to apply my academic knowledge while learning from experienced professionals. The training helped me better understand how different units within an organisation collaborate to

achieve shared goals. Overall, my training at MLI was both enriching and inspiring, greatly enhancing my professional and personal development.

A challenging task I successfully delivered during my training at MLI involved reviewing and compiling monthly clinic attendance data across several years. I had to go through physical clinic books to verify and extract data accurately. It required me to aggregate attendance data by month and further disaggregate records by age – distinguishing adult and child data. Despite the time-consuming nature of the task, I ensured the final report was thorough, well-organized, and the reported figures accurately reflected MLI's clinic attendance.

My traineeship at MLI has significantly enhanced my professional skills and development. I gained practical experience in reporting, which strengthened my attention to detail and analytical thinking. Working in a clinical research environment improved my communication, teamwork, and problem-solving abilities. Overall, the experience has equipped me with valuable skills and confidence to contribute effectively to administrative roles in health research and clinical setting.

My three top tips for students looking for an internship in health:

- Look for opportunities proactively, apply widely, and build professional connections by attending events, reaching out to people, and asking for guidance
- Make sure your CV and cover letter are tailored to each position, clearly highlighting your skills, interests, and eagerness to learn
- Most importantly, stay patient and persistent, and remain open to opportunities in any area they might lead you to unexpected and rewarding career paths

Gender training for researchers organised by MLI LIGHT team, College of Health Sciences, September 2025

The International Primary Care Respiratory Group

The International Primary Care Respiratory Group (www.ipcrg.org) is delighted to celebrate with the Makerere University Lung Institute its 10th anniversary. IPCRG's vision is a global population living and breathing well through universal access to right care. It seeks to achieve that through offering support to our member countries, such as Uganda, to develop their research and education capacity, and facilitating their collaboration across our global community of practice. Since our original FRESH AIR Uganda study in 2010, we have borne witness to that collaborative spirit, which has continued with the European Union Horizon-funded FRESH AIR programme in Uganda and four other countries, and European Union-funded implementation research FRESHAIR4Life, that is still underway today. This targets tobacco and air pollution exposure in mid- to late adolescents in disadvantaged populations in five countries including Uganda.

The impact of the earlier findings is still reverberating. The RECHARGE programme grew out of the FRESHAIR programme. Our Teach the Teacher programmes have created new teaching capacity.

Our collaboration on the Asthma Diagnosis Jigsaw Puzzle offers a new way forward on teaching about asthma diagnosis.

We look forward to many more years of fruitful collaboration and expansion of good quality respiratory primary care.

See

https://www.ipcrg.org/freshair

https://t.ly/9Ndzg

https://www.nature.com/articles/s41533-024-00410-w

Inside Africa's Boldest Biotech Revolution: Dr. Matthias Magoola's Billion-Dollar Pursuit of Pharmaceutical Sovereignty

In Uganda's Wakiso District, just 20 kilometers north of Kampala, a scientific revolution is taking shape. On a 230-acre site in Matugga, Dei BioPharma is building one of Africa's most ambitious biotechnology and pharmaceutical facilities an undertaking valued at over USD 1.1 billion. At its helm is Dr. Matthias Magoola, a Ugandan scientist whose rise from a malaria-stricken childhood to a leading pharmaceutical innovator is now reshaping Africa's medical future.

The 230–acre Dei BioPharma campus under construction in Matugga, Wakiso District

For years, Dei BioPharma was dismissed by critics as an unattainable dream. Today, that dream is becoming reality. Dr. Magoola, who holds over 100 patents filed with the United States Patent and Trademark Office (USPTO), is driving the development of a world-class Drugs and Vaccines Manufacturing Facility commissioned in 2021 by President Yoweri Museveni and Kenya's President William Ruto. Sitting on a campus exceeding 250 acres, the facility will house 26 manufacturing units producing medicines across major therapeutic areas like malaria, HIV, cancer, diabetes, hormones, APIs, cephalosporins, monoclonal antibodies, and mRNA vaccines.

President Museveni and President Ruto at the 2021 groundbreaking

Regional leadership backing Dei BioPharma's vision for African pharmaceutical sovereignty.

Dr. Magoola's personal journey fuels this vision. As a university student suffering recurrent malaria, he recovered after a potent local herbal treatment with fewer side effects than conventional drugs. His curiosity led to scientific exploration, his first international patent, and a commitment to building African capacity in drug discovery and development. Dei BioPharma has already absorbed over USD 700 million in construction, technology, and R&D, and is valued at more than USD 3 billion.

Major Breakthrough

Dr. Matthias Magoola, Founder of Dei BioPharma (3rd from left)

A major breakthrough came in 2025, when the U.S. FDA granted Dei BioPharma the first-ever waiver for clinical efficacy studies for its monoclonal antibody biosimilars—pembrolizumab (Keytruda) and trastuzumab (Herceptin). This unprecedented decision dramatically lowers development costs and paves the way for affordable cancer therapies manufactured in Uganda. The FDA also approved the company's submission pathway for liraglutide and semaglutide blockbuster diabetes and weight-loss drugs positioning Dei BioPharma to enter a global market projected to exceed USD 322 billion by 2035. The company anticipates USD 15 billion in annual revenue from these products once launched.

Innovation Scope & partnerships

Innovation extends beyond human medicine. In 2025, Dr. Magoola secured a patent for a universal Foot and Mouth Disease (FMD) vaccine capable of protecting livestock across multiple strains a breakthrough with major economic implications for Africa's agricultural economies. The company is also advancing therapies for Alzheimer's disease, designed to cross the blood–brain barrier, one of biomedical science's greatest challenges.

Dei BioPharma operates through strategic partnerships with global technology leaders Shimadzu, Agilent, Cytiva, FabTech, and United Pharmatek ensuring operations meet stringent international standards. Support from Equity Bank Uganda and a 9.4% government equity stake further anchor the project.

Beyond Matugga, Dei BioPharma is developing a USD 10 billion biotech ecosystem in Busoga, including a sickle cell hospital, a cassava-based starch plant, and an FMD vaccine factory producing up to 100 million doses annually. The agro-industrial park will generate biotechnology derivatives, APIs, and excipients from local crops—integrating agriculture with high-value pharmaceutical production.

The emerging Busoga Advanced Agro–Processing and Biotech Park.

For Dr. Magoola, the mission is deeply personal: "Over six billion people cannot afford biological drugs. We are building solutions for them." As clinical trials near launch and manufacturing lines come online, Dei BioPharma stands as a beacon of Africa's scientific potential and a bold declaration that the continent is ready not just to consume medicine, but to create it for the world.

THE JOURNEY OF MICROHAEM SCIENTIFICS: Advancing Africa's Diagnostic Sovereignty

MHS MICROHAEM SCIENTIFICS

Microhaem Scientifics (MHS) has emerged as one of East Africa's leading in-vitro diagnostics (IVD) manufacturers, with a mission grounded in strengthening the continent's scientific capacity and reducing dependency on imported healthcare solutions. Founded on the principle that Africa can develop and sustain its own diagnostic technologies, MHS has built a model that integrates innovation, quality systems, and local manufacturing excellence.

The company's journey began with a focus on high-burden diseases—HIV, Malaria, and Sickle Cell—where access to reliable, affordable diagnostics remains critical. Through targeted R&D investments and adherence to global manufacturing standards, MHS developed robust rapid diagnostic tests (RDTs) capable of meeting the demands of both public health programmes and clinical laboratories. These efforts have contributed significantly to import substitution while improving diagnostic accessibility in resource-limited settings.

Central to Microhaem's growth is its implementation of internationally recognized quality management systems. The company's ISO, and cGMP certifications reflect its commitment to precision manufacturing, traceability, and continuous process improvement. Quality assurance is engineered into every stage—from raw-material validation and lot-release testing to post-market surveillance—ensuring performance consistency in diverse field environments.

MHS's trajectory also aligns with Africa's broader agenda for health sovereignty. As global supply chain disruptions and fluctuating donor funding exposed vulnerabilities in essential diagnostics procurement, Microhaem invested heavily in local production capacity, workforce skilling, and scientific infrastructure. These advancements position the company as a strategic contributor to regional diagnostic security and pandemic preparedness.

Today, Microhaem Scientifics represents a new generation of African biotech manufacturing—one that prioritizes innovation, reliability, and self-sufficiency. Its ongoing research initiatives, expansion into molecular diagnostics, and partnerships with national regulatory bodies highlight its role in shaping a resilient, Africa-led diagnostic ecosystem.

Microhaem's journey underscores a powerful shift: Africa is not only consuming diagnostic technologies—it is engineering them.

Addressing Africa's Unique Challenges

Through Research and Innovation

Over the past decade, MLI has emerged as a regional leader in respiratory health research, publishing nearly 250 peer-reviewed articles and generating evidence that has shaped national policy and global guidelines. MLI's research quantified Uganda's respiratory disease burden and challenged conventional understanding of respiratory diseases in low- and middle-income countries, demonstrating that far younger populations are affected than in high-income settings. The Institute's landmark clinical trials have transformed treatment protocols globally, including demonstrating safe early transition to oral antibiotics for childhood pneumonia and evaluating shortened regimens for drug-resistant TB.

MLI's epidemic research leadership through the Interdisciplinary Consortium for Epidemic Research has been critical during COVID-19, Ebola, and Mpox outbreaks, conducting vaccine trials and establishing rapid-response infrastructure. The Institute's multidisciplinary research groups—spanning airways disease, lung cancer, non-communicable diseases, tuberculosis, paediatric health, and environmental health—have influenced WHO guidelines, informed Uganda's Ministry of Health policies, and positioned the country as a continental hub for respiratory research and epidemic preparedness.

Dr. Winceslaus Katagira

Head, Research and Innovation, MLI

Dr. Winceslaus Katagira is a Physician and Research Scientist at MLI. He completed his masters in Internal Medicine in 2015 at Makerere University. Besides managing patients with lung diseases at the Lung Institute clinic, he is very active in research. He has co-investigated several research studies in tuberculosis (TB), Post-TB Lung Disease, Pulmonary Rehabilitation, and airways diseases research including Asthma and COPD. His lung health research experience spans 10 years. He is the head of Innovation & Research at MLI.

250 Over the past decade, MLI has emerged as a regional leader in respiratory health research, publishing nearly 250 peer-reviewed articles

Airways And Allergy

Quantification of the burden of asthma

Our research group generated first high-quality asthma data in Uganda funded by Glaxo Smith Kline, National Institutes for Health and University Medical Centre Groningen. We demonstrated that asthma is a major public health challenge in the country, affecting more than 1 in 10 adolescents and adults, especially in urban areas. According to our research, funded by DANIDA's Childmed Project Uganda, 1 in 5 under-fives presenting with acute respiratory symptoms at Mulago hospital were diagnosed with asthma.

Over one-third of people with asthma have severe persistent symptoms, but many miss out on asthma therapy due to lack of formal asthma diagnosis; only 1 in 6 use inhaled corticosteroids, the global standard of care for asthma. Treatment gaps contribute to high burden of disease and asthma-related deaths, exceeding global mortality rates 34-fold.

African Severe Asthma Programme Monitoring Visit

Quantification of the burden of COPD

MLI quantified and characterised the burden of COPD in Uganda and other low- and middle-income countries (LMICs) with funding from the International Primary Care Respiratory Group, the Global Alliance for Non-Communicable Diseases and Glaxo Smith Kline. Our research, including the FRESH AIR study, revealed a high COPD prevalence (>16%) in rural Uganda, affecting a much younger age group (30–39 years) than those typically seen in high income settings globally. Our evidence challenged long-held view that COPD primarily affects older smokers and demonstrated that non-tobacco smoking risk factors like biomass smoke, household air pollution, infections like HIV and tuberculosis (TB), and poorly treated asthma are the most predominant drivers of COPD in LMICs.

COPD causes severe impairment in daily activities, work and productivity across LMICs as well as high risk of mortality (about 96 deaths/1000 person years) in Uganda. MLI's follow-up studies focus on COPD risk factor reduction interventions like clean-cooking initiatives, household air quality improvement, and community-based awareness for younger populations.

African Severe Asthma Programme Kickoff Meeting at Forest Cottages, Bukoto, 2016

Introduction of pulmonary rehabilitation services in Uganda

Pulmonary rehabilitation (PR) is a low cost, high impact intervention that ameliorates the disability associated with chronic respiratory diseases (CRD). MLI conducted several studies to facilitate its introduction and scale-up in Uganda. Our evidence shows that a 6-week, twice-weekly pulmonary-rehabilitation programme, involving exercise and self-management education, was highly acceptable among adults with CRD, reduced breathlessness, pain, immobility, weight loss, and other CRD-related symptoms along with improved social and intimate relationships. PR is currently delivered in 11 primary healthcare facilities in Uganda.

Global RECHARGE Dissemination Meeting, Kabira Country Club, October 2024

Directed national policy

MLI research helped mobilise policymakers and other stakeholders to address gaps in diagnostics and care; diagnostic tools such as Spirometry remained scarce and that essential medicines for asthma and COPD were largely unavailable and unaffordable in Uganda and other LMICs, particularly outside major urban centres. We influenced policy and procurement priorities which improved availability of diagnostic equipment, increased supply of inhalers, and enabled equitable access to essential medicines for asthma and COPD.

Advanced Clinical Care

To address care gaps, MLI trained health workers nationwide in accurate diagnosis, evidence-based management, and optimal use of available treatments for obstructive airways disease. Most recently, under the PEN-PLUS initiative, we trained 31 healthcare workers, nutritionists, and social workers across Uganda in guideline-based diagnosis, management, inhaler-based therapies and treatment of asthma and COPD. Additionally, we conduct community engagement and education campaigns to improve public and professional awareness, early diagnosis, and adherence to treatment.

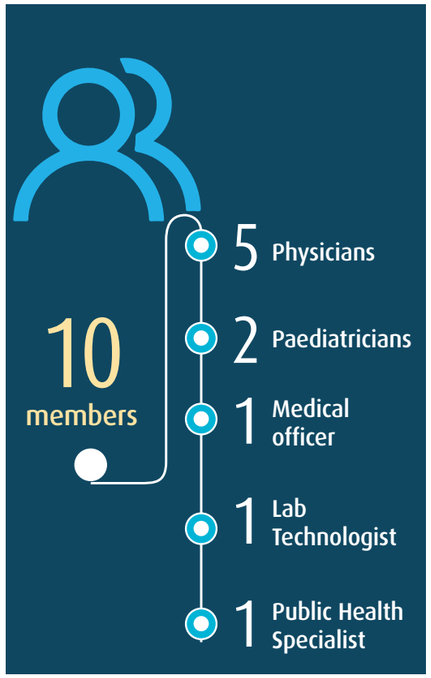
Contribution to global science

Our research placed Uganda's asthma and COPD burden in the international spotlight. MLI drives regional and international strategies through our contribution of LMIC relevant evidence to the Global Initiative for Chronic Obstructive Pulmonary Diseases (GOLD) and World Health Organization (WHO) guideline development such as standardised global and national indicators for facility-based monitoring of non-communicable diseases (including CRD) service delivery.

Dr. Patricia Alupo

Research Scientist, MLI

Dr. Patricia Alupo is an internal medicine physician and Research Scientist providing specialist respiratory care at MLI clinic and heading MLI airways and allergy research group. She gained international recognition as an emerging investigator awarded by the American Journal of Respiratory and Critical Care Medicine in September 2023, and as international member of American Thoracic Society awarded during its 2025 international conference in San Francisco. Patricia coordinates the implementation of WHO PEN-Plus initiative's respiratory arm and undertakes a PhD at the University of Groningen.



PENPlus technical support and supervision visit, Atutur District, August 2024

Environment & Occupational Lung Health

MLI has established itself as a pioneer in documenting and addressing the burden of air pollution and biomass smoke-related lung diseases in Uganda. The collective work of MLI researchers has provided critical evidence to Uganda's Ministry of Health for programing and policy development, addressing a previously unmeasured burden of environmental lung disease while building diagnostic capacity and training the next generation of lung health specialists across the country.

Dr. Nantanda facilitating a session on asthma management

Quantifying Air Pollution's Impact on Children's Respiratory Health

MLI research has provided critical evidence on how air pollution damages children's lung health across Africa. A landmark study of 537 Ugandan children revealed that those in study sites with high ambient air pollution, exceeding WHO's PM2.5 guideline (15 μg/m^3) more than 10-fold (Kampala: 177.5 μg/m^3) and 4-fold (Jinja: 96.3 μg/m^3), had significantly lower lung function than children in sites with low ambient air pollution (Buwenge: 31.4 μg/m^3). Urban residence, underweight, exposure to biomass smoke and cough were associated with diminished lung function. Through the ACACIA project, MLI monitored 297 school children with asthma across six African cities, analyzing 1,109 monitored days of data of which only 1 in 5 met WHO's PM2.5 guideline. Research identified actionable determinants: smokers at home increased exposure by 23%, coal or wood cooking raised it by 27%, and kerosene lamps increased exposure by 30%. Attending schools with paved grounds reduced exposure by 37%, providing evidence-based targets for city-specific interventions.

Dr. Nantanda explaining the pathophysiology of asthma using a teaching aid

Identifying and Implementing Clean Air Solutions

MLI's scoping review of 65 African air quality management studies revealed that most interventions (83%) focused on household air pollution, with technology-based strategies (75%) dominating over policy (20%) and education approaches (5%). The Midwife Project successfully implemented a midwife-led education programme across four rural health centres, educating 244 pregnant women about biomass smoke. Pre- and post-session questionnaires demonstrated major knowledge improvements, while follow-up interviews revealed sustained behavioural changes including avoiding smoke while cooking, using dry wood, adopting solar power, and improving ventilation. Midwives and village health teams continued programme delivery beyond the project end date, demonstrating feasibility, acceptability, and potential for widespread rollout with major benefits to maternal, foetal, and child health. The FRESH AIR project's cookstove intervention study across Uganda, Vietnam, and Kyrgyzstan enrolled 649 participants and achieved substantial improvements. In Uganda, PM2.5 levels decreased by 31%, while respiratory symptoms and chest infections diminished significantly. The intervention demonstrated high acceptability, though *PM2.5* levels remained above WHO guidelines.

FRESH AIR Dissemination Meeting

Field testing of education materials and "improved" cookstoves, supported by Prof. Rupert Jones (Front Centre), 2019

Lung Cancer Research

MLI conducted the first prospective cohort study on lung cancer in Uganda through funding from the National Institute of Health. Together with Tanzania and Case Western-USA, we screened 705 people with lung cancer symptoms and confirmed 311 cases (44%) through biopsy and histology between May 2021 to May 2025. Our epidemiological study revealed that lung cancer affects people from all regions in Uganda. The cohort of people with lung cancer was mostly female, unemployed and above 60 years of age; notably affected women cooked with wood and shrubs, some people were previously treated for TB and only a few smoked tobacco. Late diagnosis of lung cancer due to challenges in symptom recognition and passive smoking contributes to high mortality; more than half of people with confirmed lung cancer die within 6 months following diagnosis.

Lung Cancer Training

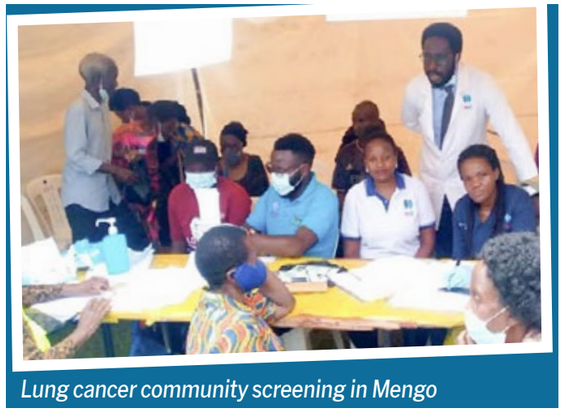
Besides presenting our research at national and international conferences and publishing in peer-reviewed journals, we also use evidence to train healthcare workers. Our data raised awareness about key lung cancer symptoms and signs across healthcare worker cadres countrywide and gave clinicians a new perspective on lung cancer incidence and prevalence in Uganda. We trained over 500 healthcare workers at 5 regional referral hospitals including Arua, Gulu, Jinja, Mbale and Soroti; 4 cancer treatment centres including Gulu, Mbarara, Nsambya and Uganda Cancer Institute; 3 private hospitals including Kibuli, Mengo and Rubaga hospitals; and the Bombo Military hospital on lung cancer case identification and strengthened diagnostic capacity for early diagnosis of lung cancer. We also sensitised imaging centres on archiving chest Computed Tomography (CT) images which interventional radiologists and oncologists use for biopsy procedures and staging of the tumour.

Continuous Medical Education at Mengo Hospital

Lung Cancer Advocacy

Through our experience with lung cancer screening, we advocated for changes in practice to enable early diagnosis of lung cancer and improve prognosis. These changes include providing patients with a CD following CT scan; assessing people with clinically diagnosed TB for whom anti-TB treatment does not work; review of CT scans by a radiologist for early detection of masses and nodules.

Lung Cancer Awareness



Lung cancer community screening in Mengo

We have translated our findings in community campaigns to increase lung cancer awareness and promote early screening and diagnosis in Uganda. Our research frequently features in national media (see QR codes below). We screened communities in Mengo for lung cancer and TB through a 2-day health camp with the Buganda kingdom. We conducted a health screening campaign with the Rotary Club in Kasangati. Our community sensitisation debunked myths about lung cancer causes and treatment modalities. For instance, *"some people thought pleural effusions (accumulation of excess fluid in the pleural space around the lungs) commonly seen in people with lung cancer were witchcraft from the sea since the doctors would drain them and the lungs fill up again."*

Lung cancer treatment and prognosis

High cost of lung cancer diagnosis presents a challenge for many people with symptoms of lung cancer as they cannot afford these services. With Mulago cost sharing plan, the biopsy procedure can be done at a reduced cost whilst senior pulmonologists offer pro-bono services for some patients who are financially constrained. In order to improve treatment outcomes in our settings, we are also moving towards personalised treatment through targeted sequencing among lung

cancer patients. Genotyping tests and drugs, approved by the US Food and Drug Administration, are readily available.

Aspiration of the Lung Cancer Research Group

As a research team, we aspire to be a beacon of hope for people with lung cancer in Uganda through dedicated focus on research, care and training that ensures all people with symptoms of lung cancer are investigated, managed, and followed up well.

Ms. Irene Najjingo

Epidemiologist and Biostatistician

Ms. Irene Najjingo is a clinical Epidemiologist and Biostatistician with over 7 years of experience in medical research. Her research on lung health and respiratory illnesses has been published in peer reviewed journals. She has successfully written and won scholarships and fellowships and is currently a PhD fellow with the University of Bergen.

705
People with symptoms of lung cancer screened (May 2021 to May 2025)

311
People with biopsy-confirmed lung cancer identified

500+
Healthcare workers from 13 hospitals trained on lung cancer case identification

Stakeholders meeting for the Lung Cancer - HIV Project

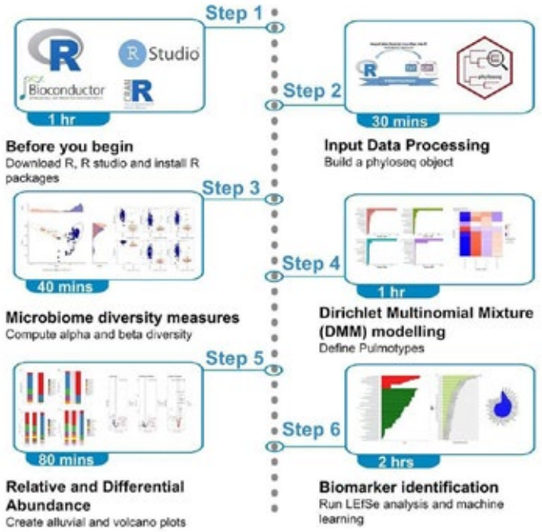
Dissemination of the LCH Project Findings, 2025

Lung Infection and Immunity

Lung Infection and Immunity research has defined a unique niche at the intersection of airway immunology, microbiome science, and chronic lung disease in HIV. Our Group established one of the first longitudinal HIV-COPD cohorts in sub-Saharan Africa, supported by NIH and global partnerships; we have created a rare, well-phenotyped platform for mechanistic studies. These contributions advance biomarker discovery, illuminate host-microbe crosstalk, and open new avenues for host-directed therapies in tuberculosis and HIV-associated lung disease.

Developing novel algorithms

We developed an algorithm for identifying *Mycobacterium tuberculosis (M.tb)* infection status through airway microbiome profiling as shown below.

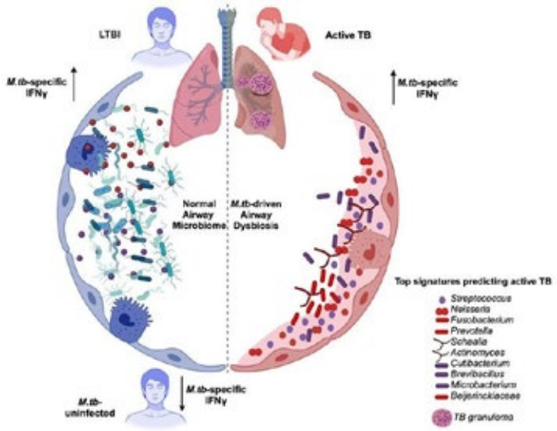


Visual summary of the STAR Protocol, published by Cell press, 2025.

Using this algorithm, we established alpha and beta metrics within the microbiome, performed microbiome community typing using Dirichlet multinomial models, determined relative and differential abundance of taxa within the microbiome and identified biomarkers using linear-effect size analysis and machine learning across study groups.

Understanding the role of the microbiome

Our research highlighted the roles of the microbiome in predicting disease susceptibility and discriminating infection status in tuberculosis. We investigated the impact of *M.tb* infection and *M.tb-specific* IFNγ immune responses on airway microbiome diversity by performing TB GeneXpert and QuantiFERON-GOLD assays during the follow-up phase of a longitudinal HIV-Lung Microbiome cohort of individuals recruited from two large independent cohorts in rural Uganda. As shown in the graphical summary below, *M.tb* rather than IFNγ immune response mainly drove a significant reduction in airway microbiome diversity. A microbiome signature comprising *Streptococcus, Neisseria, Fusobacterium, Prevotella, Schaalia, Actinomyces, Cutibacterium, Brevibacillus, Microbacterium,* and *Beijerinckiacea* accurately discriminated active TB from Latent TB and *M.tb-uninfected* individuals.



Major Graphical Highlight Summary published by iScience, 2025.

Identifying novel biomarkers and therapeutic targets

Tuberculosis and HIV remain leading global health threats, yet current tools fail to explain why some highly exposed individuals

resist infection or why people living with HIV develop disproportionate chronic lung disease. Our Group's research tackles this challenge by uncovering how airway microbiome-immune-metabolomic circuits shape host resistance and chronic inflammation. By leveraging unique Ugandan cohorts, advanced multi-omics, and state-of-the-art immunology platforms, our work provides rare mechanistic insights directly relevant to populations most affected. The impact lies in identifying novel biomarkers and therapeutic targets, ultimately informing host-directed therapies that could transform TB prevention and HIV-associated COPD care worldwide.

Dr. Alex Kayongo

Research Scientist, MLI

Dr. Alex Kayongo leads the Lung Infection and Immunity Working Group at Makerere University Lung Institute. He established Uganda's first HIV-COPD longitudinal cohort, uncovered airway microbiome signatures discriminating TB infection states, and pioneered mechanistic multi-omics studies. His leadership has positioned MLI as a regional hub for airway mucosal immunology and global health innovation.

7
Research group members, including research group lead, 2 research fellows, 2 PhD fellows, and 2 MSc students

500+
Over 500 people for the HIV-COPD longitudinal cohort followed for over 7 years

>1,200
More than 1,200 airway samples processed for BAL/ Sputum induction studies

500+
Integrated multi-omics datasets: metagenomics, RNA-seq, scRNA-seq, TCR/BCR repertoires, mass cytometry

22 peer-reviewed publications to-date

Non-Communicable Diseases

MLI's Non-Communicable Diseases (NCDs) Research Group attracts competitive grants and collaborates on impactful studies addressing critical NCD challenges in Uganda and beyond.

COPD Assessment Test (CAT)

Our team evaluated a tool for the assessment of COPD, known as CAT, and demonstrated that the test was reliable, shorter, and easier to administer than standard tests like the Saint George's Respiratory Questionnaire. This is critical for the quality of COPD care as the growing burden of COPD in Uganda meets an already strained health system, especially in rural areas where health workers are scarce. CAT will facilitate effective COPD management to prevent acute flare-ups and encourage lifestyle changes like smoking cessation. Following successful validation, MLI NCD team recommends using CAT alongside clinical assessments, particularly in rural and busy settings, to enhance COPD management and patient outcomes.

Early detection of hearing loss

MLI NCD Research Group validated the *Wulira* App for home-based hearing screening among people with multi-drug resistant (MDR) TB to prevent hearing loss through early detection. MDR-TB is on the rise as TB has resurged as top infectious disease killer. Second line injectable MDR-TB drugs, though essential, often cause ototoxicity and hearing loss. Limited access to audiologists and equipment in Uganda hampers timely detection of hearing loss. Our research showed that *Wulira* App was a promising alternative to the gold standard pure tone audiometry for home-based screening of hearing loss, enabling timely intervention and reducing disability where access to conventional audiometry is limited.

Climate crises affect mental health

Globally, 1 in 2 adolescents experience depression and more than 2 in 5 experience anxiety, highlighting the burden of mental health challenges in this age group. Climate events and disasters like Uganda's Manafwa watershed and landslides worsen mental health. Our research revealed a high prevalence of anxiety and disruptive behaviour among adolescents in this vulnerable region. We lobbied the Ministries of Health and Education to integrate mental health into school curricula and local leaders to promote parenting skills and restrict alcohol and substance use to improve adolescent mental health.

Dr. Charles Batte

Research Scientist, MLI

Dr. Charles Batte, a Research Scientist at MLI, leads the NCD Research Group. He is an award-winning social innovator with 15 years' experience in community innovation. Developer of the *Wulira* App and a two-time Fogarty Fellow, he co-leads an NIH-funded NCD research training grant to strengthen evidence-based policy in Uganda.

13
Research group members from diverse academic backgrounds fostering a multidisciplinary approach to NCD research

6
articles published in peer-reviewed academic journals in 2024 alone

Paediatric Lung Health

MLI has conducted extensive paediatric lung health research addressing critical respiratory conditions among children in Uganda and across Africa.

Uncovering Hidden Lung Damage in Vulnerable Children

MLI research has revealed substantial lung function impairment in children with underlying conditions. Among children with sickle cell disease, nearly 2 in 5 exhibited abnormal lung function—predominantly restrictive and obstructive patterns—linked to elevated serum Lactate dehydrogenase levels (an enzyme supporting conversion of sugar into energy), acute chest syndrome history, malnutrition, and household charcoal smoke exposure. Post-tuberculosis studies demonstrated that children who completed treatment for pulmonary TB had significantly reduced lung function and diminished quality of life compared to household controls.

Measuring the Burden of Pneumonia

MLI research has comprehensively mapped the pneumonia burden in vulnerable paediatric populations. Studies have revealed that Mycoplasma pneumoniae affects approximately 1 in 6 children with respiratory symptoms, predominantly affecting those under five years of age. Among children hospitalised with severe acute malnutrition, incident pneumonia reached an alarming 356 per 1,000 hospital admissions, with key risk factors including young age (6-12 months), stunting, HIV infection, presumptive tuberculosis, nasogastric tube feeding, and prolonged hospitalization exceeding 15 days. Pneumonia remains a major cause of death among children, despite observed declines in acute respiratory mortality among children hospitalised at Mulago Hospital. Severe malnutrition and low levels of oxygen in the blood contribute significantly to mortality and prolonged hospitalization among children with pneumonia.

Understanding Healthcare Access Barriers

Design without borders experts utilizing the human centered approach to engage adolescents in a workshop at Kiwoko hospital

MLI research identified critical systemic barriers in families and health facilities affecting diagnosis and life-saving treatment among children with acute respiratory symptoms. Studies revealed that more than half of caregivers delayed seeking healthcare for children with severe pneumonia, due to long distance (>5km) to the hospital, poverty (<28 USD/month), and initially seeking care elsewhere. Other barriers include limited knowledge of pneumonia symptoms, self-medication practices, delayed referrals from lower-level facilities, and low educational levels among caregivers. Recognition of severe illness symptoms, spousal support, availability of transport money, and accessibility to healthcare workers facilitate prompt care-seeking. MLI research documented alarmingly brief consultations (median 4 minutes) at primary care facilities, with respiratory rate counted in only 1 of 10 cases and relevant history for distinguishing asthma from pneumonia obtained in just 1 of 6 consultations. A groundbreaking study of children with cough and difficulty breathing found that 2 of 5 children had asthma syndrome rather than pneumonia, yet only 1 in 10 had been previously diagnosed with asthma, and nearly all children with asthma had been prescribed antibiotics inappropriately.

Improving outcomes through treatment innovations

MLI has pioneered breakthrough approaches to pneumonia management in resource-constrained settings, reshaping pneumonia treatment protocols globally. The ALRITE mobile application, featuring a semi-automated respiratory rate counter, achieved acceptable accuracy in counting respiratory rates in infants with respiratory distress and garnered extremely high user satisfaction among healthcare workers, offering a promising tool for accurate diagnosis. A questionnaire-based screening tool for asthma, developed by MLI, achieved high sensitivity (81%) and specificity (85%), providing a simple and cost-effective method for identifying children with possible asthma. The *PediCAP* multi-country consortium study, funded by the European and Developing Countries Clinical Trials Partnership (EDCTP), demonstrated that children with severe community-acquired pneumonia can safely transition from intravenous to oral antibiotics after just 24 hours, with total treatment durations as short as 4 days proving effective. Additionally, amoxicillin performed as well as co-amoxiclav for step-down therapy. The groundbreaking *EMPIRICAL* trial, funded by EDCTP, showed that empirical treatment for Cytomegalovirus pneumonia with valganciclovir significantly reduced mortality in infants living with HIV who had severe pneumonia, although empirical tuberculosis treatment did not show any benefit. The neonatal disease surveillance project, funded by PORTICUS, tested an enhanced neonatal surveillance system at Jinja Regional Referral Hospital, captured data on 4,178 neonates and documented improved outcomes among them following systematic data collection, training, and mentorship. These findings are being shared with the WHO and Ministries of Health for potential inclusion in guidelines.

Dr. Damalie Nalwanga

Research Scientist, MLI

Dr. Damalie Nalwanga is a paediatrician and assistant lecturer at Makerere University's Department of Paediatrics and Child Health, serving as a research scientist and head of training at MLI.

She has led the paediatrics research group for five years, achieving significant growth in team capacity and successfully securing research grants ranging from small research and travel awards for young researchers to large consortium grants. Her contributions have earned her the Pan-African Thoracic Society Lung Health Initiative Award and the Vice Chancellor's Young Researcher Award.

10

Research group members

Comprising 10 scientists and fellows from diverse backgrounds, including pediatricians, epidemiologists, public health specialists, and social scientists

Tuberculosis and Other Respiratory Infections

Tuberculosis (TB) is one of the longest standing research topics of MLI. Our expertise has been recognised nationally and internationally.

Promoting screening and access to TB care

MLI successfully designed and tested person-centred TB screening strategies. In the Teen TB study, funded by the Government of Uganda through the Makerere University Research and Innovation Fund, adolescents and researchers developed a screening model that included a song broadcast on community radios, TB posters, and TB screening cards distributed to adults to enable them to screen adolescents at home. In another study under the LIGHT Consortium, funded by UK Aid, healthcare workers, policymakers, and TB survivors co-created a male-specific TB screening package involving targeted TB messaging, male-friendly services offering screening for TB and other conditions, extended health facility opening hours, and TB screening at all service delivery points. Both strategies have been shown to improve uptake of TB services among adolescents and men without compromising care for women and children.

Dissemination of Photovoice Study findings with TB survivors, August 2025

Advancing TB diagnostics

Dr. Bruce Kirenga and representatives from KOFIH on a support supervision visit to Bukomansimbi District.

Through close collaboration with the Biosafety Level 3 TB Culture Laboratory at the Department of Medical Microbiology, our research has significantly advanced tuberculosis diagnostics in Uganda. Led by experts such as Prof. Moses Joloba and Dr. Willy Ssengoba, we have pioneered innovative diagnostic approaches, improved culture and molecular testing, strengthened quality assurance systems, and contributed to several TB clinical trials of different phases. This work has enhanced the accuracy and timeliness of TB detection, informed global guidelines, and built local capacity. Our research also influenced WHO's target product profiles for tuberculosis screening tests (2025) and diagnosis and detection of drug resistance (2025), with six diagnostics making it to the WHO endorsement over the years.

Improving TB treatment and care

MLI participated in the first large-scale, multi-country clinical trial for two shortened treatment regimens containing the anti-tuberculosis drug *bedaquiline* for drug-resistant TB. This trial, called STREAM, jointly funded by USAID and Janssen Research & Development, successfully tested the safety, efficacy, and cost-effectiveness of treating multi-drug-resistant TB for 6 months, down from 18 months. Other studies explored challenges people with TB face in accessing care, assessed patient satisfaction with TB care, investigated drivers of loss to follow-up before or during TB treatment, and identified opportunities for improving service quality and treatment outcomes. We used evidence from these studies to contribute to differentiated service delivery models for tuberculosis treatment which have been shown to yield favourable treatment outcomes in Uganda.

Pioneering pulmonary rehabilitation

As part of Global RECHARGE, funded by the National Institute for Health Research, MLI conducted the first clinical trial on pulmonary rehabilitation in Uganda. The trial demonstrated the effectiveness of a low-cost, non-pharmacological 6-week pulmonary rehabilitation intervention involving twice weekly sessions of warm-up, endurance and strength training, cool-down (1 hour), and education (1 hour) in reversing TB-related disability. Results will influence care among TB survivors experiencing post-TB lung disease in low-resource settings like Uganda. MLI care and research have demonstrated the therapeutic potential of music and dance in managing chronic respiratory diseases by improving mental, physical, and social health and well-being.

Shaping TB policy and practice

MLI's research has played a central role in shaping Uganda's TB policy and practice through strategic collaboration with the National TB and Leprosy Programme (NTLP). MLI researchers have contributed to major national assessments and reviews, including the Gender, Key and Vulnerable Populations assessment, the evaluation of case-finding innovations, and the end-term review of the National Strategic Plan, generating evidence on equity, effectiveness, and sustainability of TB interventions. They have also developed strategies to find people with TB, such as the Active Case Finding Toolkit and the CAST-TB campaign; and participated in the development of the 2025–2030 National Strategic Plan.

Dr. Jasper Nidoi
Research Fellow, MLI

Dr. Jasper Nidoi, Research Fellow, leads the Tuberculosis Research Group at MLI. Her research interests are in health economic analysis and implementation research to advance efforts to end TB. With research fellows and scientists, she has spearheaded competitive grant applications and generated policy-relevant evidence on gender, equity, and cost-effectiveness that have informed national policy and global health discourse.

TB survivors, healthcare workers and policy makers planning a TB screening strategy for men (IGNITE study).

16 Members

12 MLI's largest research group with 12 research fellows

4 Research scientists

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Our Respiratory Portfolio

Clinical Trials Unit

The MLI Clinical Trials Unit is a **multi-disciplinary**teamcomprising a Safety Physician, TB Consultant, Research Fellows, Medical Officers, Laboratory Technicians, Nurses, Quality Control Officers, Community Workers, and Drivers led by the Clinical Trials Working Group Lead. We work closely with Principal Investigators of clinical trials to ensure high-quality medical practice.

MLI Clinical Trials Unit acts as a **critical link** between numerous departments at the Lung Institute to support clinical trials from inception to completion. We assist protocol writing, ensure alignment with national and international requirements, plan clinical trial needs, and support budgeting. We assess the feasibility of trials, train trial staff, advise on recruitment centres, ensure timely recruitment and completion, and support the care, management, and follow-up of trial participants.

We have combined **strategic location** with **strategic partnership**. Our location at the heart of Kampala and Mulago Hospital facilitates access to a large volume of patients with diverse medical conditions and has enabled us to establish partnerships with state-of-the-art College of American Pathologists accredited laboratories at Makerere University College of Health Sciences, the Infectious Disease Institute and beyond. We work closely with the National Drug Authority, the Uganda National Council for Science and Technology, and local ethics committees.

MLI's three pharmacy storage facilities offer ample storage facilities for all medical products under the safe custody of three experienced pharmacists. Besides the MLI Pharmacy and drug storage at Case Western, MLI established a **cold chain facility.** At this facility, temperatures are monitored round the clock with a system to alert in case of temperature excursions. A generator and batteries back up power supply in case of power outage. MLI established an **intensive care unit** in the CONAT programme and makes use of ambulance services and state-of-the-art specialist care when needed to ensure safety for all clinical trial participants.

MLI Clinical Trials Ward

Community engagement is a priority of the MLI Clinical Trials Unit; the MLI Community Advisory Board plays a key role. They do not only review and comment on clinical trial protocols but also monitor successful execution of community activities. Throughout trials, we raise awareness of the research, identify myths about ongoing clinical trials in the community, and innovate solutions to overcome them. In addition, we share trial results with stakeholders, participants and regularly feature in print media and television. Continuous community engagement has enabled the successful conduct of over ten clinical trials at MLI.

Clinical Trials Unit in numbers

- **5** Active Members
- **7** phase-3 clinical trials successfully completed
- **3** phase-2 and phase-3 clinical trials ongoing
- **1** non-drug trial on pulmonary rehabilitation successfully completed

Dr. Joanitah Nalunjogi
Research Fellow, MLI

Dr. Joanitah Nalunjogi, Research Fellow, works with an experienced team to attract clinical trials to MLI. Under her leadership, the unit has seen a steady increase in the number and quality of clinical trials conducted at MLI. She ensures integration of practical knowledge and learning across international collaborative trials and locally funded clinical trials, enhancing North-South and South-North knowledge exchange. She builds connections between affected communities and researchers to ensure clinical trials address needs of the communities.

Cold Chain Facility

Research Data Management Unit

Formed a multi-disciplinary data team

MLI Research Data Unit has grown into a strong, multidisciplinary team, made up of biostatisticians and data scientists who bring stories out of numbers, data managers who ensure data quality and security, IT specialists who develop tools and troubleshoot systems, and data entry clerks who ensure every detail is right. We're proud of the diversity, skill, and commitment that each team member brings to our work.

Digitised MLI data system

Our IT support team builds and maintains the digital systems that keep everything running smoothly. The digital data systems are used across multiple sites and studies. Our improved tools have helped us cut data processing time by more than half.

Ensuring high data quality

Through careful data planning, we help design studies with clear data goals and direct tools. Our data entry team ensures accurate, timely, and secure data capture.

Turning raw numbers into insights for real-world decisions

Our data analysis capabilities allow us to turn raw numbers into insights that inform real-world decisions.

As we look to the future, we're excited to keep evolving—embracing new tools, strengthening our systems, and continuing to support high-quality research that improves health outcomes in Uganda and beyond.

Mr. Edrine Akera

Mr. Edrine Akera

Data Manager, MLI

With a strong foundation in statistics, Edrine specializes in health data management, data visualization, statistical analysis and process automation. His leadership drives data quality, innovation, and evidence-based decision-making. Edrine's commitment to advancing data science makes him a valuable asset to research teams and public health initiatives.

Mr. Dennis Senfuka

Mr. Dennis Senfuka

Data Officer, MLI

Mr. Senfuka is an IT professional with nearly a decade of experience in data management and health information systems. He is passionate about leveraging data to drive evidence-based decisions and strengthen health outcomes.

Research Data Management Unit in numbers

50	100	50%
Supported more than 50 major research projects, including local and international studies and collaborations	Trained over 100 staff and partners in data systems, analysis, and digital tools	Cut data processing time by more than half through improved tools

A health worker conducting a return demonstration on the use of ALRITE during the optimization phase training

Quality Control/ Assurance and Regulatory Affairs Unit

Where lung health science meets ethics

The Quality Control/ Assurance and Regulatory Affairs Unit plays a pivotal role in upholding ethical standards, regulatory compliance, and the integrity of all MLI studies. Our work goes beyond ticking regulatory boxes.

We support researchers from the early stages of protocol development ensuring that study designs ensure equitable selection of participants, respect their autonomy, and balance risks and benefits. We make sure informed consent processes are clear, culturally sensitive, and tailored to the specific needs of the communities involved.

Over the past decade, the unit has played a central role in major research projects – from TB studies to Ebola and Mpox vaccine trials and emerging lung health research – supporting research teams to navigate ethical dilemmas, comply with national and international regulations, and maintain participant welfare at the heart of the research processes.

Ethical High Quality Impactful research

Key to our impact has been:

- **Capacity building:** We train researchers and staff involved in a study on ethical principles, informed consent, participant protection, and responsible data handling.
- **Ethics and regulatory support:** We guide and support teams through submissions and reports to one of the six institutional review boards that we mainly work with in Uganda, ensuring adherence to evolving guidelines.
- **Quality oversight:** We monitor all studies for compliance with Good Clinical Practice and other quality standards, managing monitoring visits by national and international regulatory bodies.

By embedding bioethical approaches in every stage of our research, we help to uphold public trust in MLI as an institution and her scientific contributions as credible and socially responsible. As we celebrate MLI@10, the Quality Control/ Assurance and Regulatory Affairs Unit looks forward to the next decade with a steadfast commitment: to champion ethical, high-quality, and impactful research with respect for the dignity and rights of all those who make it possible.

Ms. Juliet Ntangazirwe

Ag. Head, Quality Control/ Assurance and Regulatory Affairs

Mr. Ranga Solomon

Quality Assurance/ Control Assistant

Journal Research Conference

MLI's Journal Research Conference (JRC) started in 2017 – celebrating its 8th anniversary this year. JRC is not for the faint-hearted, happening every Friday at 7:30 a.m. Initially, a small group of highly motivated staff – about 8 to 9 people – organised in-person meetings to discuss the latest lung science. Social distancing for infection control during the COVID-19 pandemic put an end to in-person meetings. The transition to virtual JRC has allowed more people to participate, including MLI partners and staff off-site. Nowadays, JRC attracts about 25 people on an average and well over 30 people for "hot" topics.

Running JRC every week is a collective effort, requiring commitment from Dr. Winceslaus Katagira who coordinates JRC and the MLI research groups who propose topics and volunteer presenters. Here is what regular attendees say about JRC:

Perfect time before the day gets busy

For many, 7:30 a.m. is not a bad time, but the perfect time. That JRC starts early and ends on time ensures non-interference with office hours and clinical duties.

Quick stop for lung health research updates

JRC helps be abreast with research ideas and trends locally and globally. JRC helps participants to build their knowledge base in different fields of lung science and respiratory medicine and get access to the latest peer reviewed journal articles and current scientific evidence. Clinicians appreciate discussing new evidence in medical practice, diagnostics and management of lung illnesses for improved clinical care.

Networking and exchange

JRC participants take turns in presenting, listening and discussing latest research publications. Over the years, JRC has built a community where networking and exchange of knowledge and perspectives are valued. Participants like learning from each other benefitting from different perspectives and approaches towards the topics at hand.

JRC presenters learn a lot

JRC prompts presenters to review the latest literature, sharpen their ability to critically appraise research, deepen their knowledge for subject mastery. JRC presenters get to exercise their skills in PowerPoint or similar software, learn presentation techniques, strengthen their presentation skills, and practice public speaking in a safe space. Participants feel presenting helps them get ideas for new research projects, approaches, and methods.

Growing the impact of JRC

JRC participants have great ideas for the future of JRC. Some miss the physical meetings, proposing a hybrid version with a "hearty breakfast" for those attending in person. Many suggest expanding JRC's reach beyond MLI by inviting people from other hospitals, institutions and university departments. Participants would like more presentations of research at MLI and in Uganda. Some feel JRC could be more impactful if articles were shared earlier, slides were made available, and sessions concluded with actions towards the new research ideas and questions generated through discussion.

Publications

250

MLI published close to 250 journal articles during the first ten years contributing new evidence towards the global and national sustainable development agenda.

Scan for more Publication details

Leadership for Epidemic Preparedness and Rapid-Response

Epidemics in Africa

Epidemics are disease outbreaks that spread rapidly to a wider geographical area, affecting multiple communities or regions. Such spillover events are becoming more frequent on the African continent, necessitating increased research and response efforts.

Establishment of the Interdisciplinary Consortium for Epidemics Research

MLI has played a significant role in responding to various epidemics in Uganda and the continent. MLI's leadership in coordinating epidemic research within the country and the region has resulted in the formation of the Interdisciplinary Consortium for Epidemics Research (ICER), coordinated by MLI. ICER's goal is to foster interdisciplinary research collaboration to enable rapid infectious diseases epidemic detection, containment, and optimised clinical care delivery that will inform policies to improve health outcomes. ICER has systematically strengthened Africa's capacity for future outbreak response through strategic infrastructure development, workforce training, partnerships and collective learning. ICER has built tangible assets including MLI's clinical trials ward, enhanced vaccine cold chain capacity, and planned facility expansion, while establishing a pipeline of trained students and researchers. Critical lessons learned emphasise the importance of pre-approved protocols, in-country investigator presence, and integration with national response systems to capitalise on narrow windows of opportunity during outbreaks. MLI has demonstrated that successful epidemic research requires robust community engagement, careful navigation of ethical challenges, South-to-South collaborations, and maintenance of well-annotated biospecimen repositories. By consolidating these gains and innovations, MLI has transformed Uganda into a research-ready hub capable of rapid research initiation when future epidemics emerge, ultimately positioning the continent for more effective and equitable pandemic preparedness.

Closing the evidence gap during COVID-19, Ebola and Mpox

MLI closed emerging evidence gaps during the COVID-19 pandemic. MLI's research revealed that, in contrast with clinical trajectories observed in other countries, most people with COVID-19 in Uganda experienced largely asymptomatic disease or mild symptoms. MLI's trials on COVID-19 therapeutics showed that *COVID-19 Convalescent Plasma* and the monoclonal agent *Ensovibep* did not improve clinical outcomes among people with COVID-19; whereas the selective serotonin re-uptake inhibitor Fluvoxamine and the monoclonal agent *IV tixagevimab–cilgavimab* reduced mortality among adults hospitalised with COVID-19. MLI has demonstrated critical leadership in epidemic response through groundbreaking vaccination research across multiple outbreaks. During COVID-19, MLI's trials showed ChAdOx1 nCoV-19 vaccination led to 55% greater protection against death among people with COVID-19 during hospitalization, with zero mortality among fully vaccinated individuals. Despite the above achievements, vaccine hesitancy was common (1 in 4 people) due to fear of adverse effects and doubts around efficacy and safety. MLI led Uganda's first Sudan Ebolavirus vaccine trial during a decade-defining outbreak in 2022 and in 2025. The 2022 trial established crucial infrastructure and preparedness for vaccination studies such as the *Tokomeza* Ebola trial (Solidarity against Ebola) in 2025. Indeed, the rapid activation of the TOKOMEZA trial following the outbreak of Ebola in 2025 was attributed to the capacity established in 2022. This trial started within four days of the declaration of Sudan Ebolavirus outbreak in Kampala and enrolled more than 100 participants to evaluate its efficacy, clinical safety and immunogenicity. In addition, MLI is involved in the provision of research data to inform response to the current Mpox epidemic in Uganda and the region. It's so far involved in more than 5 research projects with partners in the region and the global north.

The efforts that MLI through ICER is involved in not only generate life-saving evidence during active epidemics but builds sustainable capacity for rapid vaccine deployment, positioning Uganda as a leader in African epidemic preparedness and response

Dr. Winters Muttamba
Chief Executive Officer, ICER

Dr. Winters Muttamba is a Medical Doctor with additional training in Public Health and Project Planning and Management. He also holds a PhD in Medicine from the University of St Andrews-United Kingdom. At the Lung Institute, he is the Chief Executive Officer of ICER and Programme Manager of the LIGHT Consortium. Dr. Muttamba's research interests centre around emerging and re-emerging infectious diseases and avenues to build capacity for epidemics responsive research on the continent.

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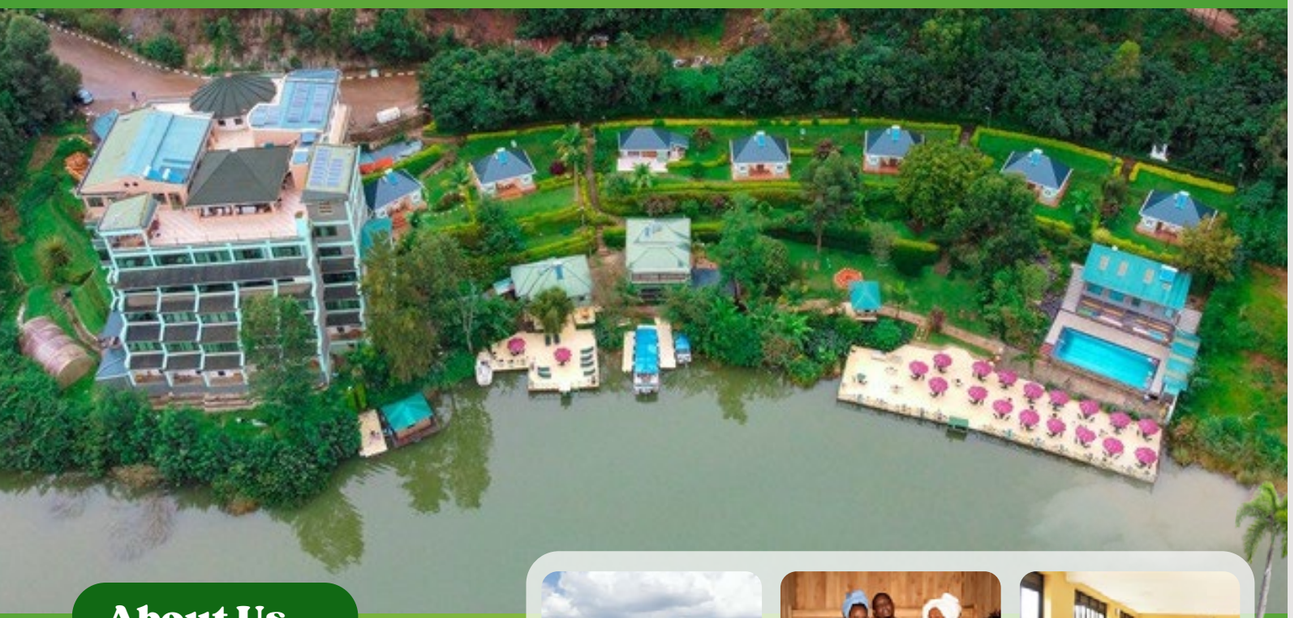

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Highlights of International Days

World Asthma Day

ACACIA Study Community Engagement Activity at Mount of Olives College, Kakiri mark World Asthma Day 2021

World Lung Day

Dr. Rebecca Nantanda engaging students at Kibuli Secondary School on Asthma risks and treatment, World Lung Day, September 2024.

World TB Day

Under the theme Its Time to End TB, MLI staff join the World TB Day celebrations in 2019

MLI Community Advisory Board members at world TB Day 2019

World TB Day celebrations in 2019

TB Awareness drive for Boda Boda riders in Butaleja, 2023

World TB Day celebrations, 2024

TB Research Group engaging participants during the World TB Day in Nakasongola, March 2025

TB Research Group raising awareness about TB and identifying barriers to TB care with secondary school students and boda boda riders at Barazas commemorating World TB Day in Nakasongola, March 2025.

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TB Marathon

TB Marathon, Kampala, 2024

Car Free Day 2024

The Clean Air Africa and KTBAir Project teams at the Car Free Day, September 2024

National Day of Physical Activity, 2025

National Day of Physical Activity, Kyambogo, 2025

Lung Institute Clinic –
Celebrating Quality Care

For the last couple of years, the Lung Institute Clinic has stood as a lifeline for thousands of Ugandans living with lung diseases. What began as a modest effort to respond to the growing burden of respiratory illness has grown into a trusted centre of excellence where science meets compassion, and where every breath matters.

Over the past decade, the clinic has evolved into a place of refuge and reassurance. Patients walk through its doors seeking treatment, but they leave with something deeper: hope, comfort, dignity, and a renewed sense of possibility. Since inception, the lung institute has been a home of hope to over 20,000 clients both adults and children all reporting common colds to advanced respiratory challenges like asthma and COPD to TB, post-COVID conditions, and rare lung disorders, the clinic has provided personalised care anchored in cutting-edge research and global best practices.

This journey has been shaped by the voices and hands of many. The clinicians who diagnose and treat with unwavering dedication. The nurses who provide comfort on the hardest days. The researchers who turn questions into solutions. The administrative teams who keep the system running. The partners who have believed in the vision. And above all, the patients whose courage and stories inspire every milestone we celebrate.

As the Lung Institute Clinic marks ten years, we honour

these voices. We reflect on the challenges overcome, innovations achieved, and lives transformed. We celebrate the growth of a clinic that started small but dared to dream big and we commit to the future where every Ugandan can access high-quality lung health care, grounded in the science, compassion, and community.

The decade behind us is only the beginning. The next ten years promise even greater impact as the Makerere Lung Institute continues to lead, to serve, and to breathe life into national and global lung health.

The clinic offers several treatment diagnostic services including:

1. General Chest Clinic

Respiratory health is the foundation of vitality. Our General Chest service is your first line of defense and care for a wide range of common pulmonary concerns from persistent coughs and shortness of breath to chest infections and bronchitis. We offer comprehensive evaluations to diagnose and manage these conditions effectively, ensuring your foundational health is strong and supported.

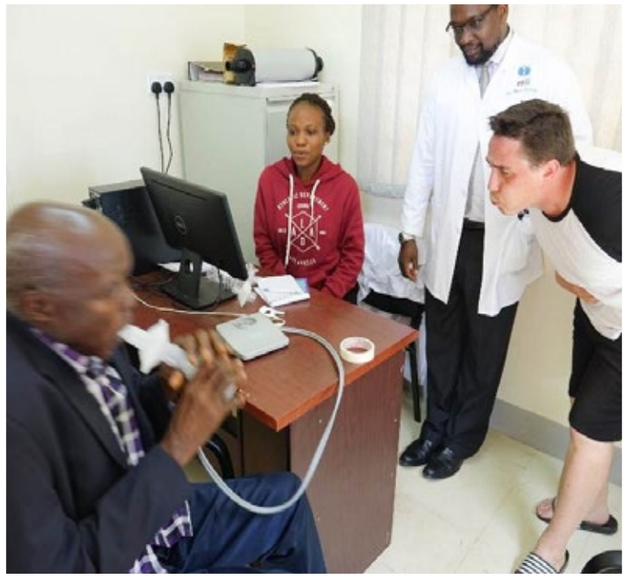
2. Severe Asthma Clinic

We offer advanced, personalized treatment plans for severe asthma, helping patients gain control over their symptoms and reduce the frequency of attacks.

3. Smoking Cessation

Breaking free from tobacco is one of the most significant gifts you can give your lungs and your future. We understand the powerful hold of nicotine addiction. Our Smoking Cessation programme is not about willpower alone; it's a supportive partnership. We provide compassionate counseling, proven strategies, and medical support to guide you through every step of your journey to becoming smoke-free, improving your health from your very first smoke-free day.

Spirometry test



Patient performing a spirometry test with support from Mike, and Ms. Pauline Ndagire (Respiratory Technicians) + Prof. Kirenga and Ms. Ndagire

4. Pulmonary Rehabilitation (PR)

When chronic lung disease makes every breath an effort, Pulmonary Rehabilitation is your path back to strength. PR is a supervised programme of exercise, education, and support designed to recondition your body and empower your mind. It's about rebuilding your endurance, managing your symptoms, and rediscovering the confidence to engage in the activities you love, significantly improving your day-to-day life.

5. Diagnostics

Uncertainty ends with a precise diagnosis. Our comprehensive Diagnostics department is the core of our personalized care model. We utilize state-of-the-art technology and expert analysis to look beneath the symptoms and uncover the root cause of your respiratory concerns, providing the critical answers needed to build an effective and targeted treatment plan.

- **Pulmonary Function Testing (PFT).**
  This simple, non-invasive test measures how well your lungs work—their capacity, volume, and efficiency. The results give us a detailed picture of patients' lung health, allowing us to diagnose conditions accurately, monitor their progression, and tailor customised treatments.

- **Allergy Testing (Skin Prick Testing -SPT) and Blood Allergy Tests**
  If your respiratory symptoms are triggered by unseen elements in your environment, you need to know your enemy. Our Allergy Testing services, including Skin Prick Tests and blood tests, act as precise detectives. We identify the specific allergens from pollen and dust to foods that cause your suffering, turning mystery into a clear management plan for lasting relief.

- **Bronchoscopy**
  When a condition requires a closer look, Bronchoscopy provides a window into your airways. This minimally-invasive procedure allows our specialists to see directly into your lungs, diagnose complex issues, obtain tissue samples, and even provide treatment.

MLI clinicians undertaking a brochoscopy hands-on training facilitated by experts from John Hopkins University

- **Sleep Medicine**

  Our Sleep Medicine service provides expert diagnosis and treatment for disorders like sleep apnea, chronic snoring, and insomnia. We offer comprehensive sleep testing, CPAP therapy, and personalized treatment plans to help a patient achieve restorative sleep and improve your overall health.

Mike Thynne a Senior Clinical Respiratory/Sleep Physiologist supporting Dr. Kimuli (R) and Dr. Katagira (L) to set up sleep devices

- **Post-COVID Diagnostics**

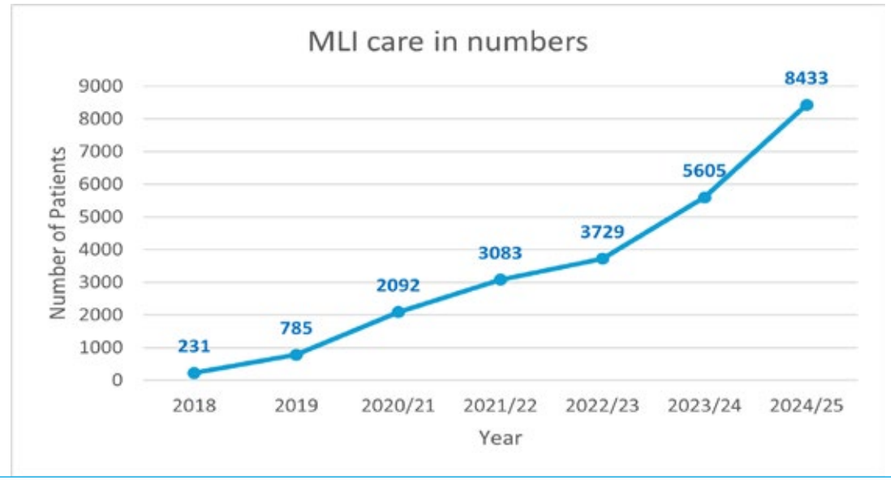
  The journey to recovery may be prolonged even after the infection does. Individuals after COVID may experience lingering effects on their lung health and overall well-being. We provide specialized assessments for individuals recovering from COVID-19, addressing lingering respiratory symptoms and guiding a full recovery providing clarity and a personalized road map to help you regain your strength, your breath and your quality of life.

6. Vaccination

We offer essential vaccinations to protect vulnerable individuals from respiratory illnesses like influenza and pneumonia, safeguarding your long-term health.

> 23,950

Total number of Patients attended to over the years



Lung Institute Clinic Team

Dr. Ivan Kimuli

Director, Clinical Services, MLI

Dr. Ivan Kimuli is a Respiratory and Sleep Physician and is the Director Clinical Services at MLI. He is also the Deputy Managing Director of the Institute. He holds Master of Public Health and Master of Medicine, Internal Medicine and participated in prestigious international training programmes like the Yale University Clinical Observership. Ivan serves on the board of Climate Hub International and as Chairperson of the Community Advisory Board at MLI. He is a Co-Investigator on a number of clinical research projects and has a special interest in sleep physiology and medicine.

Dr. Adrian Mwota is an Internal Medicine Physician and the Head, Clinical Services. His clinical passion lies in personalised, patient-centred care for chronic airway diseases, with a focus on bronchiectasis and post-tuberculosis lung disease. He is also actively involved in national TB and epidemic research initiatives.

Dr. Adrian Mwota Nampogo

Head, Clinical Services, MLI

MLI Chronological Timeline (2015-2025)

2015

Nuclear Medicine Office Space

Inauguration of the Institute Governamce Board (IGB) (below) and Institute Technical Board (ITB) (above)

2016

African Severe Asthma Program (ASAP) Study Kickoff

Uganda National Asthma Survey (UNAS)

Commencement of animal house renovation works

2017

MLI 2nd Anniversary Celebration

Completion of renovation works for the MLI office block + clinic

2018

iBreath Asthma Course

Receiving of Pulmonary Function Testing (PFT) Equipment by the Chair, MLI BOD

2019

Construction of the KUPUMUA House

WHO & MLI train Healthcare Workers on COVID-19 case management

Convalescent Plasma Study stakeholder meeting

Opening of MLI Office Block by Hon. Dr. Jane Ruth Aceng Ocero

Minister of Health makes a courtesy visit to the Lung Institute Clinic (LIC)

2020

COVID-19 Convalescent Plasma Trial Launch

Launch of the UBV-01N Clinical trial

2021

Launch of the Clinical Trials of Natural Therapeutics (CONAT) Program by H.E. President of Uganda

2022

Enrolling the First CONAT participant

Minister of Health receives the first batch of Ebola Vaccines

Space allocation approval by Mulago National Referral Hospital

2023

Occupational Lung Health Awareness Campaign

The Lung Institute Expansion Project team meets the VC, Makerere University

2024

Birth of Interdisciplinary Consortium for Epidemics Research (ICER)

1st ICER Symposium on Mpox, Speke Resort Munyonyo

2025

Cycling for Clean Air event

First National Science Summit

Dissemination of CONAT-ARI trial results

Site Handover by the VC to CK Contractors to commence construction of the MLI Home Building

Finance & Administration

At the heart of Makerere University Lung Institute's success is a well-robust Grants and Finance Management Unit and a dedicated Research Administration team that ensure all research runs smoothly through strong financial stewardship, compliance oversight, and comprehensive grants management support. Leveraging this solid backbone, MLI leads one of Africa's most extensive research portfolios in lung health, infectious diseases, and clinical innovation. The Institute manages more than 150 pioneering projects from TB drug trials, HIV-associated COPD studies, Mpox and COVID-19 vaccine research, and antimicrobial resistance programmes to major international consortia such as LIGHT, CLEAN-Air(Africa), CHEST-AFRICA, ACACIA, and UNITE4TB. Together, these efforts drive impactful science, strengthen health systems, and advance cutting-edge solutions that improve health outcomes across Africa.

Mr. Mordecai Tayebwa

Grants and Business Sustainability Manager, MLI

Mr. Mordecai Tayebwa is a seasoned grants management professional with over a decade of experience overseeing complex grants and contracts in major health research institutions. As Head of Grants, he offers strategic leadership in proposal development, ensures regulatory and donor compliance.

Mr. Emmanuel Kansiime Muntu

Finance Manager, MLI

Mr. Emmanuel Kansiime Muntu, Finance Manager at the Lung Institute with over 10 years' experience in finance and grants management. His major roles include day to day financial management, budgeting and cashflow forecasting, as well as financial reporting.

Mr. Simon Mugambe

Chief Operations Officer

Mr. Simon Mugambe is the Chief Operations Officer at MLI. He ensures seamless research, clinical, and training operations at the institute. He is recognized for his exemplary operational leadership.

Ms. Zahra Namuli

Communications Officer

Ms. Zahra Namuli Ssentongo is the Communications Officer at MLI. As a former health broadcast journalist, she applies her passion for health promotion to creating impactful health and science awareness initiatives and has earned recognition, including the 2020 Health Journalist of the Year Award.

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Human Resources

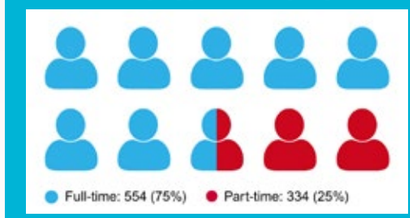
Human resources are the heartbeat of any institution, and Makerere University Lung Institute is no exception. At MLI, our work is powered by a diverse and multicultural team whose dedication, professionalism, and passion have shaped our journey over the last decade.

We celebrate every member of our workforce from janitors, security personnel, research administrators, finance and grants officers, communications officers, clinical teams, data and regulatory officers; and researchers. Each contribution, whether seen or unseen, has been vital in transforming MLI into a globally recognized centre of academic excellence and lung health research.

Over the past 10 years, more than 700 staff have served the Institute and through it, hundreds of individuals have built careers, advanced professionally, and improved their livelihoods. Their growth reflects our commitment not only to advancing science but also to expanding opportunities and strengthening national capacity.

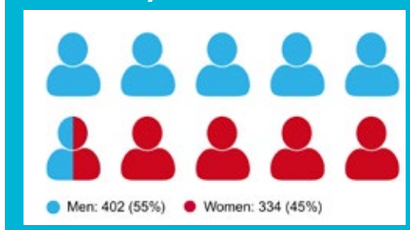
Together, we remain the people behind the mission to conduct high quality lung health research that integrates disease prevention clinical care and training in sub–Saharan Africa.

MLI staff by type of Employment



Full-time 75% Part-time 25%

MLI staff by Gender



Men 55% Women 45%

Ms. Jackline Nakabira
Administrator/ Ag. Human Resource Manager

Ms. Jackline Nakabira is a research administrator at Makerere University Lung Institute with over eight years' experience in supporting collaborative research with local and international institutions. Her roles evolve around administrative support for research projects including coordination, organizing events, and personnel management, etc. She is passionate about building capacity of others and is involved in training and mentoring of junior staff.

Awards and Honours

PhD Graduates

Dr. Winters Muttamba

Maximizing Uptake and Utilization of Diagnostic Technologies in low-, middle- and high-income countries: Learning from the COVID-19 pandemic

Dr. Betty Kirenga

Mathematical Models for the Dynamics of Asthma Development: Effect of Immunological, Environmental and Genetic Determinants

Dr. Jasper Nidoi

Investigating the feasibility, effectiveness and implementation of co-created gender-specific TB interventions is shaping the future of TB response.

Dr. Alex Kayongo

Microbiome-induced immune resistance to *Mycobacterium tuberculosis* at the Airway Mucosa.

Dr. Damalie Nalwanga

Pneumonia and Undernutrition in Children: Assessment of Supplementation and Outcomes

Awards

Assoc. Prof. Bruce J. Kirenga was elected to the **Fellowship of the Royal College of Physicians**, a prestigious honor recognizing distinguished consultants for their outstanding contribution to medicine, and received a prestigious **award at the International Post-COVID-19 Conference** in Toronto, Canada, in recognition of his outstanding leadership and dedication during the COVID-19 pandemic. Prof. Kirenga serves as **Chair of Executive Board for ICER** and as a member of the **WHO Technical Advisory Group on Evidence for Clinical and Policy Considerations for New TB Vaccines**.

Prof. William Worodria received the **2023 Philip Hopewell Prize for Leaders in Global Respiratory Health** from the American Thoracic Society, making him the second recipient of this award, which he received on 20 May 2023 at a ceremony in Washington DC.

Dr. Phiona Ekyaruhanga was awarded the **best oral presentation at #INSPIRED2025 in Spain** for her study on delays in seeking care for children with severe pneumonia at Mulago National Referral and teaching Hospital that highlights urgent gaps and the need for early intervention.

Dr. Damalie Nalwanga was given the **Pan-African Thoracic Society Lung Health Initiative Award** and the Makerere University **Vice Chancellor's Young Researcher Award**

Dr. Patricia Alupo received the **American Thoracic Society 2025 International Award** for her outstanding contributions to clinical research and education in pulmonary medicine.

Mr. Mudarshiru Bbuye was awarded the **Best Oral Presenter** at the **2025 Pan African Conference** on Environment, Climate Change and Health under the Governance and Cross-sectional research theme

Staff celebrating MLI

Turning Points as MLI Marks 10 Years

Opportunity to Grow

MLI research staff value the institution as a transformative environment that recognises talent, nurtures growth and fosters career development and progression. Staff highlight MLI's focus on building research capacity through professional development courses and mentorship in epidemiology, data science and implementation research. Collaborative grant writing and team science has built their confidence as researchers. The emphasis on career stewardship has enabled staff to progress from entry-level positions to research fellowships and research technicians.

Ahmed Ddungu, Research Fellow joined in January 2018:

"Anchoring and stewardship of career progression mark my turning point at MLI"

High-Quality Research for Policy and Practice

Staff contributions demonstrate MLI's commitment to evidence-based research addressing Uganda's health challenges. They are motivated by the fact that the Institute's work strengthens Uganda's capacity to tackle infectious and non-communicable respiratory diseases through policy-relevant research and integrated care models based on evidence-based understanding of the social determinants of lung health and care needs. MLI helps staff gain experience in data collection, quality control and ethical research procedures. Several members have successfully written grants, published articles, and coordinated major projects, developing their research administration and project management capabilities.

Samson Omongot, Research Fellow joined in January 2018:

"I have championed research that examines the social determinants of health as key drivers of infectious diseases; explored gendered factors that influence health seeking; and have contributed to evaluating TB care strategies for adolescents."

Collaboration and Partnership

Muyama Sarah Rachael, Sleep Technician, joined as a Research Assistant in January 2018:

"My journey at MLI began as a Research Assistant. Wisdom from my mentors, Dr. Adaeze, Dr. Patricia and Joan, alongside my own perseverance, transformed my work, leading me to where I am today as a sleep technician."

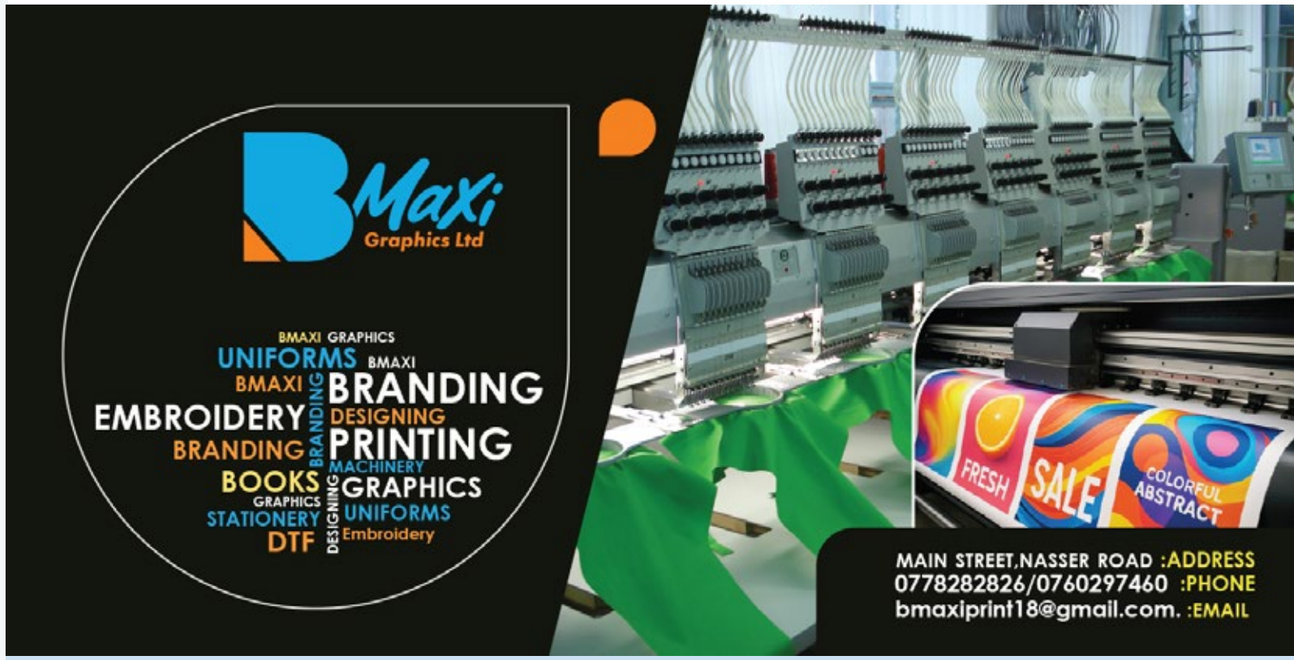
Staff emphasise collegiality and collaboration as fundamental to their professional growth at MLI. The Institute has established strategic partnerships with academic institutions and government agencies to advance research and policy development. Staff members benefited from mentorship by experienced colleagues who provide guidance on research methods and ethical practices. Working at MLI exposes staff to diverse expertise and vibrant research networks. Key lessons include maintaining integrity, seeking clarity when uncertain, building strong working relationships, and learning continuously from experienced colleagues. This collaborative environment positions MLI as a regional hub for training and health systems research.

Leadership

MLI demonstrates strong leadership through managing multiple research training grants funded by organisations including the NIH, focusing on a wide range of research disciplines and respiratory diseases. The Institute provides a platform for researchers to develop comprehensive training modules and to mentor other early-career scientists across Uganda. Staff members have progressed into leadership roles, such as field team leaders, research coordinators and principal investigators. Staff seek opportunities to deepen their expertise in grant writing, protocol development, manuscript writing, and conference presentations. The Institute champions multidisciplinary collaboration and emotional intelligence in leadership, supporting sustainable development.

Charles Batte, Research Scientist, joined in January 2016:

"My leadership growth at MLI focused on building research capacity and mentoring over 50 early-career scientists across Uganda. As MLI marks 10 years, I envision a bold next chapter rooted in research excellence, regional leadership, and transformational training."



Aspirations as MLI Marks 10 Years

As MLI celebrates its tenth anniversary, staff members share ambitious visions for the future spanning research excellence, capacity building, and regional leadership.

Research Excellence and Innovation

Sincere Kyarikunda, Research Assistant 2019-2020, rejoined as Research Fellow in 2024:

"As MLI marks 10 years, I am excited to contribute to its continued growth and research excellence. Together with two other social scientists at MLI, I am preparing to establish a Social Science Research Unit to integrate social science perspectives in MLI research."

Staff aspire to expand research capacity in infectious and non-communicable respiratory diseases at individual, institute and national levels through new training grants, doctoral research and multidisciplinary fellowships. There is strong commitment to generating impactful research that builds the knowledge base for controlling lung-related diseases, translating findings into national guidelines and community interventions, and establishing MLI as a continental centre of excellence for implementation science and data-driven health systems research.

Mentorship and Capacity Building

Staff members are committed to paying forward the mentorship they received by nurturing the next generation of researchers. Aspirations include scaling mentorship programmes to equip African scientists with tools to lead, publish, and influence policy, whilst fostering leadership that values collaboration, integrity, and innovation.

Institutional Development

Staff envision continued support for emerging scholars and deeper regional and global collaborations. There is enthusiasm for expanding the Institute's research expertise and groups by establishing a Social Science Research Working Group to integrate social science perspectives and strengthen lung health research quality. MLI should maintain its balance of guidance and freedom to grow as a beacon of compassion, cultivation of talent, and innovation.

Jasper Nidoi, Research Fellow joined in January 2018:

"MLI's balance of guidance and freedom to innovate have made MLI a place of inspiration. I envision deeper global collaborations, stronger research leadership, and continued support for the next generation of scholars."

Immaculate Akugizibwe, Administrative Assistant, joined in September 2022:

"I aspire to further strengthen our administrative systems by enhancing coordination, streamlining processes, and ensuring reliable support across all units. I am committed to contributing to MLI's continued growth and vision of improving lung health in Africa."

Poem

Muyama Sarah Rachael, sleep technician at MLI, celebrates MLI@10 with a poem summarising her experiences at the Institute.

A decade of Breath and Purpose

Looking ahead a decade, MLI stands,
A story of breath held in devoted hands.
Not just bricks and mortar, but a promise kept.
With every laboured gasp, a new hope appeared.
They began with a question, a whisper in the air:
How do we fight the diseases of despair?

Through microscopes and data, they've mapped the unseen foe,
The silent epidemics that affect people from head to toe.
From the lab bench to the bedside,
The research findings they've shared,
Every breakthrough is hope for a new morning's light,
The unravelled mysteries show they've cared.

See them in the lecture halls, the young faces shining bright,
Absorbing knowledge that transforms darkness into light.
Feel the weight of a stethoscope and the promise of tomorrow.
As they learn to repair what is broken, to comfort and nurture.
This isn't merely a curriculum; it's a living creed,
To cultivate a thousand healers for a nation in need.

Watch the father's shoulders lighten as his burden lifts.
As a child breathes easily, embracing their gifts.
Hear the sigh of relief filling the clinic room,
Fighting off the shadows of sickness and gloom.
This is where the poem ends and reality starts,
In the simple, profound victory of a breath that wins.
The Makerere University Lung Institute is more than the building you see,
It's the air we breathe and the hope to be free.

Meet the Teams
behind the Magic

Research Administration Team

Researchers

Annual Researchers Retreat, Fairway Hotel, Kampala.

Clinical Trials Teams

Hygiene Team

Security Team

Logistics Team

Transport Team

Clinic Team

Partnerships and Collaborations for Impact

Pfizer
THET PARTNERSHIPS FOR GLOBAL HEALTH
McMaster University
Makerere University
Uganda National Academy of Sciences
NIH National Institutes of Health
LUNG CONSORTIUM INTERNATIONAL
University of Plymouth
The Union International Union Against Tuberculosis and Lung Disease
NIHR National Institute for Health Research
CEPI
University of London
USAID FROM THE AMERICAN PEOPLE
ALFASIGMA
Chinese Center for Disease Control and Prevention
University of Liverpool
The Republic of Uganda Natural Chemotherapeutics Research Institute (NCRI) Ministry of Health
Case Western Reserve University Case Comprehensive Cancer Center
Foreign & Commonwealth Office
IDI Infectious Diseases Institute
University of KwaZulu-Natal
MRC Medical Research Council
The Republic of Uganda Ministry of Health
GCRF Global Challenges Research Fund
Glaucoma UK
wellcome trust
Queen Mary University of London
The Global Fund
The Republic of Uganda Mulago National Referral Hospital
Pan African Thoracic Society
Janssen Pharmaceutical Companies of Johnson & Johnson
Kenya Medical Research Institute KEMRI
SICRA Strengthening Research
Boston University
Merck
Vital Strategies
University of St Andrews
Virginia Commonwealth University
World Health Organization
CDA Foundation
Institute of Medical Biology Chinese Academy of Medical Sciences
Making Uganda the best

Partnerships & Collaborations for Impact

Continued

AfricaCDC Centres for Disease Control and Prevention
wellcome sanger institute
Malawi-Liverpool-Wellcome Clinical Research Programme
DOCTORS WITH AFRICA CUAMM
UNIVERSITY of WASHINGTON
MDC MAX DELBRUCK CENTER FOR MOLECULAR MEDICINE IN THE HELMHOLTZ ASSOCIATION
RCSI • UCD MALAYSIA CAMPUS RUMC
UVRI
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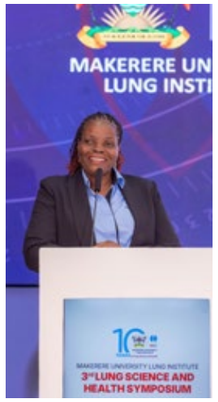
IMPERIAL
NATIONAL INSTITUTE FOR MEDICAL RESEARCH
CLEAN Air Africa
Global Health Research Unit
UCD DUBLIN
NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES Division of the National Health Laboratory Service
AFENET African Field Epidemiology Network A healthier Africa
EDCTP
airqo Breathe Clean
JOHNS HOPKINS UNIVERSITY
BAYLOR COLLEGE OF MEDICINE Children's Foundation UGANDA
LSTM LIVERPOOL SCHOOL OF TROPICAL MEDICINE
KCRI Kilimanjaro Clinical Research Institute An Institution of the Good Samaritan Foundation
MakBRC
BINGHAM UNIVERSITY ZANKLI RESEARCH CENTER
DIRECTORATE OF GOVERNMENT ANALYTICAL LABORATORY Ministry of Internal Affairs
CTDGH CENTRE FOR TROPICAL DISEASES AND GLOBAL HEALTH CATHOLIC UNIVERSITY OF BUKAVU
Kazire
KOFIH Korea Foundation for International Healthcare
LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE
UNIVERSITE CATHOLIQUE DE BUKAVU
MBARARA UNIVERSITY OF SCIENCE & TECHNOLOGY
walimu Quality Health Care For Everyone
UNHRO Uganda National Health Research Organisation
UNIVERSITY OF CAMBRIDGE
THE AGA KHAN UNIVERSITY
Dei BioPharma
ReSOK RESPIRATORY SOCIETY OF KENYA
HEI

MLI@10 Celebrations in Photos

Theme
A Decade of Advancing Lung Science and Health for all through Research, Training and Clinical Care

MAKERERE UNIVERSITY LUNG INSTITUTE
@10

OFFICIAL FUNDRAISING LAUNCH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3rd LUNG SCIENCE AND HEALTH SYMPOSIUM

AND HEALTH SYMPOSIUM

RSV Project

MAKERERE UNIVERSITY
LUNG INSTITUTE

Overview

The Makerere University Lung Institute (MLI) was founded in 2015 as a centre of excellence dedicated to promoting Lung health in Africa through research, training, and clinical care. Since its inception, MLI has had an average yearly research grant award of 10 and a current active grant portfolio of 30, an average annual peer-reviewed publication volume of 50, 5,000 patients per year, and more than 200 personnel and 30 research scientists. During the peak of the COVID-19 pandemic, the institute played a critical role at the national, regional, and global levels by developing effective treatment and prevention techniques to contain the pandemic.

MEP Rationale

Uganda and many African countries continue to have a high burden of respiratory diseases notably Tuberculosis, Lung Cancer, Asthma, COPD, and other environmental exposure related diseases. Recent data shows the heightened burden of TB with Uganda among the 30 burden countries, Lung Cancer has tripled between 2014 and 2024, and the prevalence of Asthma and COPD is above 10%. However, facilities are still limited and the existing ones are overburdened thus the need and rationale to expand Makerere University Lung Institute.

The MEP aims to address these challenges by establishing the state-of-the-art Lung care and research centre. The centre will house the following units:

MAKERERE UNIVERSITY LUNG INSTITUTE EXPANSION PROJECT

The Makerere University Lung Institute Expansion Project represents a significant step forward in addressing the respiratory health needs of Uganda. By enhancing infrastructure, training healthcare professionals, and acquiring advanced equipment, the MEP will enable MLI to provide world-class care and contribute to global lung health research.

19.4 m

The project will be implemented in 5 years.

A. Centre for Advanced Pulmonary and Intensive Care (CAPIC) offering services in

- Specialised pulmonary clinics namely Airway/ allergic diseases, Lung fibrosis, Lung cancer and thoracic malignancies, Pulmonary vascular diseases and Pediatric pulmonology clinics
- Pulmonary function testing laboratory (PFT lab)
- Sleep laboratory
- Pulmonary rehabilitation centre
- Interventional pulmonology
- Intensive care Unit including Extracorporeal membrane oxygenation (ECMO)
- Thoracic radiology
- Video Assisted thoracic surgery/minimally-invasive thoracic surgery (VATS) programme
- Inpatient care programme

B. Centre for Clinical Investigation (CCI)

- Clinical trials ward including a biosafety level 3 (BSL3) unit to handle clinical studies of class A pathogen
- Research laboratories
- Biorepository
- Research offices
- Business incubation unit

C. Centre for Capacity Enhancement (CCE) will focus on training both research and clinical specialists for the CCI and CAPIC respectively.

Expected impact

- The new facility will significantly improve the quality of respiratory care available in Uganda.
- Increased capacity for training will produce more specialized healthcare professionals, addressing the current shortage.
- Enhanced research capabilities will contribute to global knowledge on lung health and respiratory diseases.
- The facility will provide employment

Total Project Cost and Timeline

The project is estimated to cost USD 19.4 million as itemised below and will be expected to be implemented in 5 years.

Current home & the facilities in the Hospital

Proposed New Building

mli

LUNG INSTITUTE CLINIC (LIC)

CLINICAL SERVICES

Diagnostic

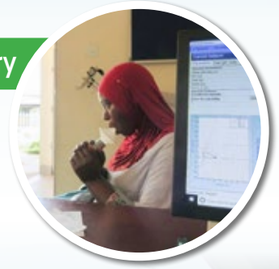
- Pulmonary Function Testing (PFT)
- Allergy testing- Skin prick testing (SPT) and blood allergy tests
- Polysomnography (Sleep tests)
- Bronchoscopy

Care clinics

- General Chest Clinic
- Severe Asthma Clinic
- Pulmonary Rehabilitation and Vaccination
- Smoking Cessation
- Sleep Medicine
- Post Covid Clinic

Consultation
Monday -Friday
8am -5pm

Pulmonary Rehabilitation "Step-up"



Spirometry

Incremental shuttle walking test

"Biceps curl"

Bronchoscopy

0414 699 134 | P.O. Box 7749, Kampala, New Mulago Hospital Complex, Upper Mulago Hill Road

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Acknowledgements

As we mark 10 years of advancing lung health, Makerere University Lung Institute extends its deepest appreciation to everyone who has been instrumental in this remarkable journey. We sincerely acknowledge our Board of Directors for their steadfast governance, the Institute Technical Advisory Committee for their expert guidance, and Sebugwawo & Company Advocates for their legal guidance. We thank the MLI-MOH Partnership Committee and MLI Expansion Project Fundraising Committee for their unwavering commitment to our new state-of-the-art lung care and research centre.

We also recognise our valued partners, collaborators, funders and suppliers whose support has enabled our research, clinical care, and capacity-building initiatives. Our gratitude goes to the Senior Management Team and staff whose professionalism and dedication have propelled the Institute's growth and impact.

We deeply appreciate the Lung Consortium International, Ltd and Makerere University leadership for the continuous support and enabling environment. Above all, we honour our patients and the communities we serve; your trust inspires our work and fuels our commitment to improving respiratory health in Uganda and beyond.

To the MLI@10 Organising Committee, your creativity dedication in preparation of the 10-year anniversary celebrations cannot go unnoticed.

Together, we celebrate a decade of scientific excellence, service, and innovation, and look forward to shaping an even stronger future for lung health.

MLI@10 Organising Committee

Executive Committee

Assoc. Prof. Bruce J. Kirenga, Director

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