



MBARARA UNIVERSITY OF SCIENCE AND TECHNOLOGY

2022

INTEGRATED ANNUAL REPORT

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Acronyms/Abbreviations

A &B	Audit and Risk
AHRI	African Health Research Institute
AIMS	Academic Information Management Systems
AR	Academic Registrar
ARDC	Annual Research Dissemination Conference
BAF	Bachelor of Accounting and Finance
BBA	Bachelor of Business Administration
BCE	Bachelor of Computer Engineering
BCS	Bachelor of Computer Science
BIC	Business Incubation Clinic
BINP	Bwindi Impenetrable National Park
BIT	Bachelor of Information Technology
BLIS	Bachelor of Library Information Science
BMCT	Bwindi Mgahinga Conservation Trust
BME	Bachelor of Biomedical Engineering
BNC	Bachelor of Nursing Completion
BNS	Bachelor of Nursing Science
BPSM	Bachelor of Procurement and Supply chain Management
BRAM	Bachelor of Records and Archive Management
BSE	Bachelor of Science Education
BSS	Bachelor of Secretarial Studies
CITT	Centre for Innovations and Technology Transfer
CUHAS	Catholic University of Health and Allied Sciences
CURAD	Consortium for Enhancing University Responsiveness to Agribusiness Development
CUUL	Consortium of Uganda University Libraries
DAAD	Deutscher Akademischer Austauschdienst (Germany Academic Exchange Service)
DLIS	Diploma in Library Information
DoS	Dean of Students
DRC	Democratic Republic of Congo
DRGT	Directorate of Research and Graduate Training
DSC	Developer Student Club
D-SIRE	Digital Citizen Science for Community-based Resilient Environmental Management
DVC AA	Deputy Vice Chancellor – Academic Affairs
DVC F&A	Deputy Vice Chancellor – Finance and Administration
E & W	Estates and Works
EAC	East African Community
EACEA	European Union Education, Audiovisual and Culture Executive Agency
EEE	Electrical and Electronics Engineering

EIA	Environmental Impact Assessment
F	Female
FAST	Faculty of Applied Science and Technology
FCI	Faculty of Computing and Informatics
FIS	Faculty of Interdisciplinary Studies
FoBMS	Faculty of Business and Management Sciences
FoM	Faculty of Medicine
FoS	Faculty of Science
FY	Financial Year
GHC	Global Health Collaborative
HCU	Healthy Child Uganda
HRM	Human Resource Manual
ICT	Information and Communication Technology
IFMS	Integrated Financial Management System
IFS	International Foundation for Science
IGCP	International Gorilla Conservation Program
ILL	Inter Library Loans
IP	Intellectual Property
IPBES	Intergovernmental Science Policy platform on Biodiversity and Ecosystem Services
IRO	International Relations Officer
ISDC	Internal Staff Disciplinary Committee
ITFC	Institute of Tropical Forest Conservation
LEB	Light Every Birth
LMS	Learning Management System
M	Male
MADS	Masters in Development Studies
MAPG	Masters in Local Governance and Planning
MBI	Master of Business Informatics
MCAID	Masters in Conflict Analysis and Inclusive Development
MENU	Meals for Nutrition Uganda
MERI	Maximizing Engagement for Readiness and Impact
MGO	Mbarara University Grants Office
MISc	Masters in Information Science
MMED	Master of Medicine
MNCHI	Maternal Newborn and Child Health Institute
MoES	Ministry of Education and Sports
MoFPED	Ministry of Finance, Planning and Economic Development
MoH	Ministry of Health
MOSTI	Ministry of Science, Technology and Innovation
MPCP	Master of Pharmacy in Clinical Pharmacy
MPH	Master of Public Health
MRRH	Mbarara Regional Referral Hospital
MSc	Master of Science

MSIS	Masters of Science in Information Systems
MT	Mama Toto
MUST	Mbarara University of Science and Technology
NARO	National Agriculture Research Organisation
NCHE	National Council for Higher Education
NDP	National Development Plan
NFA	National Forest Authority
NICHE	Netherlands Initiative for Capacity development in Higher Education
NIH	National Health Institute
NITA	National Information Technology Authority
NSF	National Science Foundation
OB/GYN	Obstetrics and Gynaecology
ODEL	Open Distance and Electronic Learning
OSSREA	Organisation for Social Science Research in Eastern and Southern Africa
PBB	Programme Based Budgeting
PDU	Procurement and Disposal Unit
PEEM	Petroleum, Energy and Environmental Management
PhD	Doctor of Philosophy
PLWH	People Living With HIV
PPA	Programme Planning Approach
PPC	Project Preparation Committee
PRO	Public Relations Officer
QAM	Quality Assurance Mechanisms
RDC	Resident District Commissioner
REC	Research Ethics Committee
RENU	Research and Education Network of Uganda
SDI	Selective Dissemination of Information
SIDA	Swedish International Development Cooperation Agency
SLT	Science Laboratory Technology
SOHIC	Students' One Health Innovation Club
SOPs	Standard Operating Procedures
SRHR	Sexual Reproductive Health and Rights
STP	Student-community Twinning Project
SW	Students Welfare
TMC	Top Management Committee
U of I	University of Illinois
UG	Undergraduates
UGX	Uganda Shillings
UIRI	Uganda Industrial Research Institute
UK	United Kingdom
UNCST	Uganda National Council for Science and Technology
UOTIA	Universities and Other Tertiary Institutions Act

VC	Vice Chancellor
VHT	Village Health Team
VLIR-UOS	Vlaamse Interuniversitaire Raad-Universitaire Ontwikkelingssamenwerking (Flemish Interuniversities Council – University Development Cooperation)
VUB	Vrije Universiteit Brussels
WCS	We Care Solar

University Council Chairperson's Message



Dr. Warren Naamara
Chairperson, MUST Council

According to Universities and Other Tertiary Institutions Act (UOTIA) 2001 (as amended), Section 67 requires the University Council to prepare and send to the Minister of Education and Sports (MoES) a report on the University activities for that year and the extent to which the objectives of the University have been met. Therefore, on behalf of Mbarara University of Science and Technology (MUST) Council, I am privileged to submit to you the 2022 Integrated Annual Report.

Despite the hurdles attained, MUST has been able to focus on the teaching, research, innovations and community engagement. The University graduated 1319 students (60% male and 40 % female) in various academic disciplines at its 28th Graduation Ceremony held on May 28, 2022.

As detailed in this integrated annual report, the University has had positive changes in the areas of education, research, infrastructure development and community engagement and service. The achievements and impacts reported in this integrated report have been remarkable, aligned with Sustainable Development Goals (SDGs) and Uganda's National Development Plan III (NDPIII). Overall, the University is a key player in economic and social wellbeing.

I wish to congratulate the Management, Staff and Students for having worked so diligently towards this achievement.

Succeed We MUST.

Vice Chancellor's Message



Prof. Celestino Obua
Vice Chancellor

On behalf of Management, we are pleased to present the University Integrated Annual Report for the year ended December 31, 2022. MUST made 33 years of its existence on October 28, 2022, during which it has grown to 67 accredited programmes, 4,772 (32.3% Female; 67.7% Male) undergraduates and post graduate students and 574 staff, infrastructure development (teaching space) and education facilities.

I salute all the staff and students for their commitment to complete this calendar year. I appreciate the Government of Uganda for providing funding that enabled the university to fulfill its mandate.

The five roles of a university are: Teaching, Learning & Leadership; Research, Innovation and Outreach & Community Engagement. In teaching we have done exceedingly well; in research, MUST has continued to expand her grants portfolio through the increased number of grants won; in innovation, the university has excelled, and it continues to create impact in the community. I appeal to MUST staff to aim at writing and winning grants, as this advances MUST at large.

During the year, several MUST staff have pursued and completed their PhDs and Masters. At the 28th graduation ceremony that was held on May 28, 2022, 29 graduands were awarded PhDs ((7 [24.1%]Female; 22[75.9%] Male)) and 199 ((55[27.6%]Female; 144 [72.4%] Male)) conferred Masters. Through various financial support mechanisms like Ministry of Education and Sports via the AfDB funded HEST project that provided funds for staff development; the Government Scholarships to undergraduates, the State house Scholarships, the Government Loan Scheme, the MGH Global Health Collaborative; the SIDA bilateral support to Uganda; Mastercard Foundation through FAWE, Father Bash Foundation; PHARMBIOTRAC (WorldBank) and Ministry of Health to mention but a few. These have played a big role in supporting the students and staff.

We celebrate with all who have tirelessly lifted the MUST banner high. The 2022 Integrated Annual Report showcases the achievements attained in the different academic units.

Succeed We MUST.

Deputy Vice Chancellor - Academic Affairs' Message



Prof. Nixon Kamukama
Deputy Vice Chancellor –
Academic Affairs

The Office of Deputy Vice Chancellor-Academic Affairs (AA), supported by the office of the Academic Registrar (AR), has the primary responsibility of setting the academic focus for the University. The Office has a wide range of responsibilities, including leadership and service roles that include stewardship of academic program policy and quality assurance, support to the research missions of MUST, and directing and enhancing its mission, both at the undergraduate and graduate/professional levels. The Office also coordinates and guides academic and long-range institutional planning, with oversight of academic faculty and staff, which advance knowledge through various collaborations that facilitate and support innovative approaches to society's biggest challenges and most pressing problems, from economic inequality to healthcare disparities and climate change.

Our achievements as portrayed in this integrated report clearly manifest hardwork. The Academic unit pledges to continue giving high quality services while working closely with all other functional units of the University in the pursuance of the strategic goals of the University.

Succeed We MUST.

Acknowledgements Deputy Vice Chancellor (F&A)



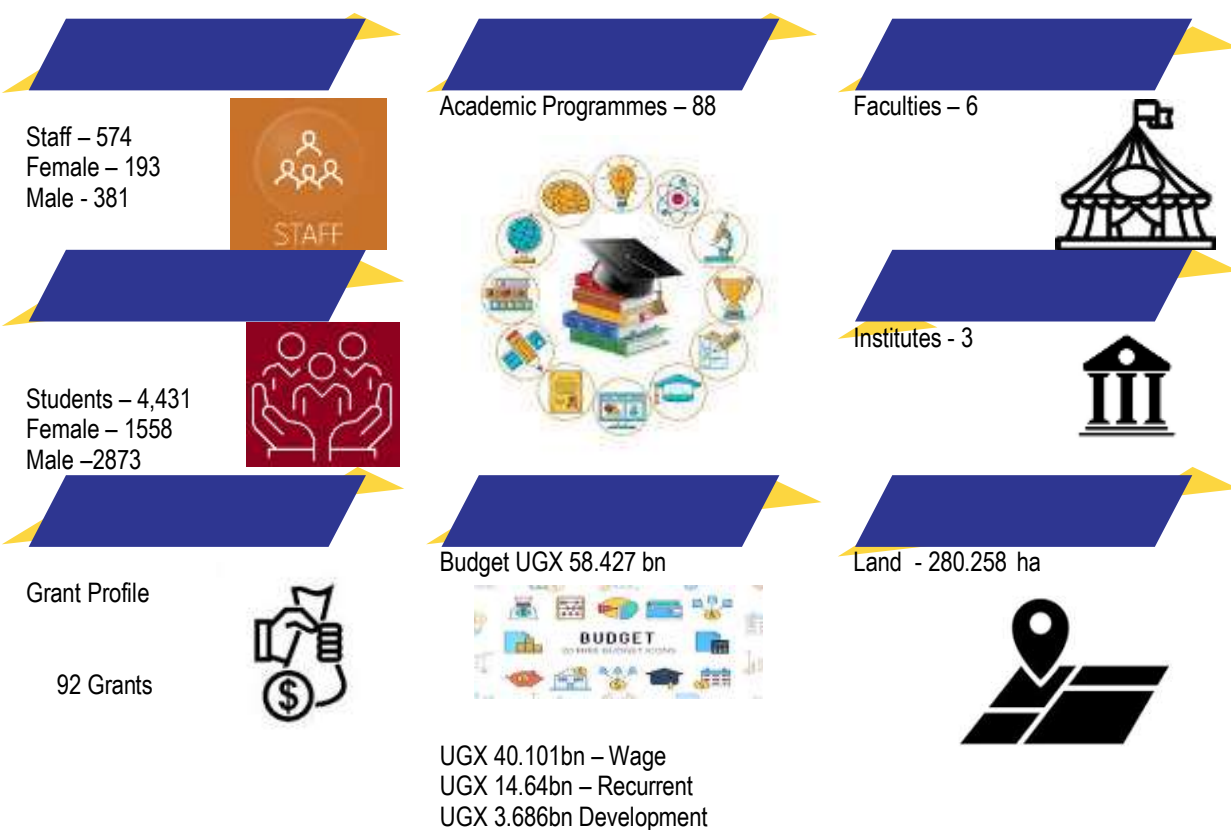
Assoc. Prof. Charles Tushabomwe-Kazooba
Deputy Vice Chancellor – Finance and
Administration

The MUST Integrated Annual performance Report of 2022 is not an individual work. It reflects the synergy from all academic and administrative units of the entire University. Credit goes to all who contributed to this report. Special thanks yet again go to Ms. Sheila Niinye Twinamatsiko, the International Relations officer (IRO) and Ms. Winfred Aliguma (Principal Personal Secretary) in my office, who freely offered their expertise to design the report. Also, thanks go to Ms. Angella Nakato Muyingo, the Public Relations Officer (PRO) for availing us some of the photographic materials used.

The University appreciates the Chancellor, Prof. Charles L. M. Olweny; the Chairperson of University Council, Dr. Warren Naamara; the Vice Chancellor, Prof. Celestino Obua; the Deputy Vice Chancellor (Academic Affairs), Prof. Nixon Kamukama, the University Secretary, Mr. Melchoir Byaruhanga, the Dean of Students, Mr. Emmanuel Kyagaba, and the Academic Registrar, Dr. Martha Kyoshaba Twinamasiko, for their visionary leadership. We thank the Deans, Directors and the very many other people behind the curtains who uplift MUST. Bravo to all of you.

Succeed We MUST.

1. MUST at a Glance



1.1 Core Values



Table 1: Checklist of Quality and University Capacity Indicators

	Item	Using modified likert scale. (Ideal; Good; Acceptable; can be improved and unacceptable)	University Self Assessment for the Year 2022	Justification
1	Land for campus/urban	Ideal – in urban areas, 10 – 30 acres land for campus	Ideal	Total 280.258 ha - Lower Circular Road 10.30 ha; Rukindo 45.15 ha; Kihumuro 189.3 ha; Buhoma 24.62 ha; Kabale Road Plot 8 – 18 10.52 ha; Upper Circular Road 0.368 ha
2	Land Rural	Not applicable for MUST since the registered location of the University is in Mbarara City, Uganda		
3	Governance:			
	a) Council	Ideal – in control of policy	Ideal	7 th Council was responsible for the direction of the administrative and academic affairs; and formulated 4 policies during the reporting year
	b) Senate	Ideal – supervises all academic policy	Ideal	Supervised all academic policies
	c) Administration	Ideal – appointed legally by Council	Ideal	All university officers were appointed by the University Council in line with UIOTA 2003 (as amended) guidelines, University Charter and Human Resource Manual (2018)
	d) Staff and student unions	Ideal – staff and student union involved fully	Ideal	Exists and all its structures fully functional. A functional Sports Union. Represented by members on Council, Council Committees and Senate

4	Infrastructure			
	a) Classroom space	Acceptable – 1m ² per 1 student	Acceptable	Over the years there has been improvement on classroom space
	b) Library space	Acceptable – 1m ² per 1 student	Acceptable	University has two libraries. In total 4,160m ² library space. Main campus – 2,870m ² and Town campus – 1,290m ² . With 4,431 registered students, the ratio is 1m ² per one student for the year.
	c) Science laboratories			
	d) Computer laboratory	Can be improved – 1m ² per 4 students	Can be improved	4,431 registered students (undergraduate and postgraduate). 10 computer laboratory. Approximately each is 50m ² . Thus a ratio of 20m ² to 89 students
	e) Administrative Staff offices	Acceptable – 3m ² per staff	Acceptable	
	f) Academic Staff offices	Acceptable – 3m ² per staff	Acceptable	
	g) Sports Field	Unacceptable – 1 field for 2500 or more	Unacceptable	Existing sports field near Pharmacology Lecture Theatre for all the students, Volleyball & Basketball field near the staff houses. There is a planned sports complex at Kihumuro campus and this is included in the 5-year Strategic Plan (2020/2021 & 2024/2025)
	h) Facilities for the disabled	Good	Good	Access and for inclusion ramps on all the buildings with four levels fitted with lifts. New hostel available for physically disabled. Toilet facilities for the physically disabled persons. Yet to recruit an interpreter – a position not yet filled.
	i) Tennis Court, swimming pool, volleyball, Hockey and Cricket	Good	Good	

5	j) Conference hall	Acceptable – 1 for 1000 registered students	Acceptable	Faculty of FAST has two auditoria each with sitting capacity of 196, at town campus, there is the Pharmacology Lecture Theatre and the Main Lecture Theatre.
	k) Student union offices	Unacceptable – 20m ² for over 5000 students registered	Unacceptable	Less than 20m ² - need an office
	Academic Staff			
	(a) Staff/student ratio:			
	i) General	Ideal – 1:15	Ideal	Undergraduate students 4,431. Staffing of the university (Academic Staff 308; Administrative Staff 266) (1:14)
	ii) Faculty of Medicine	Good – 1:15	Good	Number of registered students 1,829: faculty academic staff 124 (1:15)
	iii) Faculty of Science	Ideal – 1:10	Ideal	Number of registered students 381: faculty academic staff 50 (1:8)
	iv) Faculty of Interdisciplinary Studies	Ideal – 1:15	Ideal	Number of registered students 194: faculty academic staff 24 (1:8)
	v) Faculty of Computing & Informatics	Good – 1:20	Good	Number of registered students 497: faculty academic staff 26 (1:19)
	vi) Faculty of Applied Science and Technology	Unacceptable - 1:26 or more	Unacceptable	Number of registered students 722: faculty academic staff 27 (1:27)
	vii) Faculty of Business & Management Science	Can be improved – 1:50	Can be improved	Number of registered students 808: faculty academic staff 24 (1:34)
	(b) Qualifications (staff development)			

	i) PhD Holders	Acceptable – 15-50% of staff	Acceptable	Number of PhD holders 110; 574 number of staff (Academic and non-academic) (19%)
	ii) Masters Holders	Can be improved – 40% of staff	Can be improved	Number of Masters holders 223; 574 number of staff (Academic and non-academic) (39%)
	iii) Contact hours for academic staff	Good – 15 hours/week	Good	A range of 10-12 hours per week
	iv) Percentage of part-timers	Ideal – 20% of staff	Ideal	55 parttime staff (mostly academic staff). 574 number of staff (Academic and non-academic) (10%)
6	Education facilities			
	a) Student: Library book ratio (relevant and diversity)	Unacceptable – 1:10	Unacceptable	University has textbooks 123,099; reference books 2,800; e-books 1,727 total 127,626.
	b) Computer student ratio	Acceptable – 1:20	Acceptable	1 computer for 15 students. (1:10 > 1:15 > 1:20)
	c) Access to Internet; 1 student : hrs	Can be improved – 1:3 hours	Can be improved	1:3 hours student computer laboratories also used as lecture rooms, do not use Hotspots, a total of 20 hotspots linked to Kihumuro campus – 5:15 hours
7	Financial health			
	a) Percentage of budget received	Good – 80%	Good	Received 93.57% (80% < 100%). Approved budget UGX 58.427bn, actual release UGX 54.6471 thus percentage of budget relewase 93.7%.
	b) Percentage of deficit over expenditure	Good – less than 10%	Good	Deficit was UGX 3.756bn, approved budget UGX 58.247bn. % deficit over the planned expenditure 6.4%.
	c) Proportion of budget spent on salaries	Can be improved – 70%	Can be improved	Actual expenditure for recurrent wage UGX 39.533bn. Approved budget UGX 58.427bn. % of budget spent on salaries is 65% < 67.7% < 70%.

8	d) Percentage of income derived from fees	Ideal - 25–35% of budget	Ideal	Actual release UGX 54.671bn, actual fees for the year UGX 13.671bn thus % 25%
	Facilities for the disabled (expert advice will be sought)	Acceptable – Facilities are being put in place	Acceptable	Over the last 10 years, new facilities being put up put into consideration disability aspects. However, facilities that were put up prior to this period have gaps to be addressed.
9	Gender sensitivity	Good – 75% of the needed rules and regulations in place	Good	Relevant rules and regulations in place – HIV/AIDS, Gender Policy, Sexual Harassment Policy, Special Needs, continuous training on sexual harassment, policies and guidelines being implemented, observing 60 days of activism on the International Women’s Day
10	Strategic Plan	Good – approved by the University Council	Good	Hinderance to full implementation is funding.
11	Publications by staff	Ideal – Over 10 books a year	Ideal	Over 100 publications by the staff from all academic units.
12	Research projects won by staff	Ideal – over 10 projects won	Ideal	92 grants won by the University either as the coordinating institution or a sub-grantee. The total fundsing is USD \$12 million. The funding periods vary to a maximum of 10 years.
13	Percentage of institution Graduates employed in year of graduation	Acceptable – 40–60%	Acceptable	Varies across faculties. In most cases, graduates from Faculties of Medicine and Science are employed in the year of graduation. Not the same for other faculties where only less than 40% are employed. On average the employment rate in the year of graduation is 40 - 60%

1.2 Legal Framework of the University

Mbarara University of Science and Technology (MUST) is a public university located in south western Uganda. It was established on October 28, 1989 by the MUST Statute 1989 resulting from the government's realization that higher education was a critical asset for nation building and in particular that Science and Technology was the most realistic driver to lead this initiative. The Statute was repealed and replaced by the Universities and Other Tertiary Institutions Act 2001 (as amended).

The government appreciated the crucial role that higher education institutions especially universities play in the national, social and economic development and the promotion of national consciousness through their traditional functions of providing high level manpower, promoting research, collecting and disseminating knowledge and information and serving as centres of excellence. Since her establishment, the university has come up with many community innovations, which have contributed to its development and that of the country. At the very beginning, a community based curriculum was adopted to enable the students better understand the health problems of the rural and peri-urban areas where 70% of Ugandans live. During training, students are exposed and introduced to rural and peri-urban community settings, to appreciate the problems and conditions that the majority of the population faces. Thus, the university programmes are

designed to avoid the elitist education and the ivory tower mentality.

The university has grown from a single Medical and Health Sciences Faculty university with an undergraduate student population of 43, to now 6 Faculties and 2 institutes with total enrolment of 4,772 (32.3% Female; 67.7%) undergraduates and post graduate students. The university staff has also increased from the original six members to 577(183 [31.7%] Female; 394 [68.3%] Male) as of December 2022. The university operates two campuses: Kihumuro main campus located 7 km on the Mbarara – Bushenyi highway and the Mbarara city campus.

1.3 University Vision, Mission and Mandate

Mission

To provide quality and relevant education at national and international level with particular emphasis on Science and Technology and its application to community development.

Vision

To be a centre of Academic and Professional Excellence in Science and Technology.

1.4 Mandate

To promote quality higher education for national integration and development through teaching of science and technology for promotion

of the political, economic and social development of Uganda, the needs and aspirations of the Republic of Uganda.

1.5 Core Functions

- a) Teaching
- b) Learning and Leadership
- c) Research
- d) Innovation
- e) Outreach and Community Engagement

1.6 Support Areas of Focus

- a) Governance and Management
- b) Financial Resource Mobilisation and Management
- c) Teaching, Innovations and Research Infrastructure
- d) ICT infrastructure and Support Services
- e) Students Support Services

1.7 Objectives and Functions

- a) To provide instructions to all those admitted to the University and make provision for the advancement, transmission and preservation of knowledge to stimulate intellectual life in Uganda.
- b) To preserve and foster the right of the University to determine the qualification of who may teach, what may be taught, how it may be taught and the requirements to be fulfilled in order to be admitted to study therein.
- e) To impart University education within Uganda with particular emphasis on science and technology and their application to

rural development and for this purpose to work with other appropriate bodies in planned development of higher education, in particular to examine and make proposals to the government for new faculties, new departments, and new degree course/subjects of study.

- d) To conduct examinations for and to grant degrees, diplomas, certificates and other awards of the university and revocations of such degrees, diplomas, certificates and other awards in a manner provided for by the statutes.

1.8. MUST Strategic Objectives 2020/2021- 2024/2025

- a) To increase equitable access to quality education in Science and Technology
- b) To enhance the quality and quantity of Research, Innovation output and Technology Transfer
- c) To consolidate and enhance university outreach and community engagement
- d) To strengthen ICT Infrastructure and support services
- e) To strengthen efficiency and effectiveness of governance & management systems and processes
- f) To holistically boost the academic and social development of staff and students

1.9 Registered Office and Principal Place of Business

Location

Kihumuro campus

Block 37 Kashari – Plot 21

Mbarara – Bushenyi Road

P.O. Box 1410 Mbarara, Uganda

Tel: +256-485421373

Town campus

Plots 8– 18 Kabale Road

E-mail:

vc@must.ac.ug

dvc.aa@must.ac.ug

dvc.fa@must.ac.ug

ar@must.ac.ug

us@must.ac.ug

pro@must.ac.ug

iro@must.ac.ug

Website:

www.must.ac.ug

1.10 Pictorial of the 28th MUST Graduation Ceremony, May 28, 2022



The Chancellor Prof. Charles Mark Lwanga Olweny awarding a PhD to Dr. Musa Kayondo at the graduation ceremony



Hon. Dr. Joyce Moriku Kaducu, the Minister of State for Primary Education, a MUST Alumnus giving her speech



The Vice Chancellor giving a speech



Council members and Academic staff at the graduation ceremony



PhD holders at the Graduation Ceremony



The best performing students who scored the highest CGPA in their respective programmes posing with the Chancellor, Guest of honour and Vice Chancellor

2. Governance Structure

2.1 University Council

The University Council is the supreme organ of the university and is responsible for the overall administration of the university and ensures the due implementation of the objects and functions of the university.

Table 2: Council Members

SN	Name	Designation	Gender
1	Dr. Warren Naamara	Chairman	M
2	Dr. Nicholas Kamara	Vice Chairman	M
3	Prof. Celestino Obua	Vice Chancellor	M
4	Assoc. Prof. Nixon Kamukama	Deputy Vice Chancellor (AA)	M
5	Assoc. Prof. Charles Tushabomwe-Kazooba	Deputy Vice Chancellor (F&A)	M
6	Mr. Melchoir Byaruhanga	University Secretary/Secretary to Council	M
7	Profesor Amon Agaba	Member	M
8	Assoc. Prof. Robert Bitariho	Member	M
9	Ms. Jolly Uzamukunda Karabaaya	Member	F
10	Mr. Ogal Moses Opio	Member	M
11	Ms. Sarah Nyachwo Mwaka	Member	F
12	Mr. Hannington Ashaba	Member	M
13	Mrs. Clare Nduhuura	Member	M
14	Dr. Henry G. Mwebesa	Member	M
15	Mr. Robert Mugabe Kacebezi	Member	M
16	Ms. Shallotte Ndyamusimanta	Member	F
17	Eng. Patrick Mujunansi	Member	M
18	Mr. Umar Muhumuza	Member	M
19	Dr. Pius Ariho	Member	M
20	Mr. Charles Kakuru	Member	M
21	Dr. Stevens Kisaka	Member	M
22	Eng. Assiimwe Kagoro	Member	M
23	Mr. Jastas Mugenyi Kizito	The Guild President, Students Representative	M
24	Ms. Deborah Tusiime	Vice Guild President, Students Representative	F

Note: Female 4 (16.7%, Male 20 (83.3%))

2.2 Senate Members

The Senate is responsible for the organization, control and direction of the academic matters of the university and as such the Senate is in charge of the teaching, research and the general standards of education and research and their assessment in the university.

Table 3: Senate Members

SN	Name	Designation	Gender
1	Prof. Celestino Obua	Vice Chancellor/Chairman	M
2	Assoc. Prof. Nixon Kamukama	Deputy Vice Chancellor (AA)	M
3	Assoc. Prof. Charles Tushabomwe-Kazooba	Deputy Vice Chancellor (F&A)	M
4	Dr. Martha Kyosha Twinamasiko	Academic Registrar/Secretary	F
5	Dr. Eng. Dorothy Kabagaju Okello	Government Representative	F
6	Dr. Phillipa Musoke Mudido	Government Representative	F
7	Hon. Stephen Tashobya	Government Representative	M
8	Dr. Celestine Barigye	Director, MRRH	M
9	Assoc. Prof. Vincent Batwala	Director, DRGT	M
10	Prof. Jerome Kabakyenga	Director, IMNCH	M
11	Dr. Dennis Babaasa	Director, ITFC	M
12	Ms. Rose Nassali	Principal UIAHMS	F
13	Ms. Mebra Mulabiza	Principal JSNM	F
14	Mr. Emmanuel Kyagaba	Dean of Students	M
15	Mr. Wilson Adriko	Ag. University Librarian	M
16	Dr. Joseph Ngonzi	Dean, Faculty of Medicine	M
17	Assoc. Prof. Julius Lejju	Dean, Faculty of Science	M
18	Dr. Evarist Nabaasa	Dean, Faculty of Computing and Informatics	M
19	Dr. Johnes Obungoloch	Dean, Faculty of Applied Science and Technology	M
20	Dr. Frederick Nsambu Kijjambu	Dean, Faculty of Business and Management Science	M
21	Dr. Rogers Bariyo	Dean, Faculty of Interdisciplinary Studies	M
22	Prof. Roberts Muriisa Kabeba	Representative of FIS	M
23	Assoc. Prof. Grace Kagoro	Representative of FoS	F
24	Assoc. Prof. Joel Bazira	Representative of FoM	M
25	Ms. Maureen Kahima	Representative of Senior Staff	F

26	Ms. Lydia Nyangoma	Representative of Intermediate Staff	F
27	Mr. Jastus Kizito Mugenyi	Guild President	M
28	Ms. Mbabazi Patricia	Student Representative	F

Note: Female 9 (32.1%); Male 19 (67.9%)

2.3 Top Management Committee

Table 4: Members of Top Management Committee

SN	Name	Position	Gender
1	Prof. Celestino Obua	Vice Chancellor	M
2	Prof. Nixon Kamukama	Deputy Vice Chancellor (AA)	M
3	Assoc. Prof. Charles Tushabomwe-Kazooba	Deputy Vice Chancellor (F&A)	M
4	Mr. Melchoir Byaruhanga	University Secretary	M
5	Dr. Martha Kyoshaba Twinamasiko	Academic Registrar	F
6	Mr. Emmanuel Kyagaba	Dean of Students	M
7	Mr. Adriko Wilson	Ag. Librarian	M
8	Mr. Felix Magyezi Amanywa	University Bursar	M
9	Mr. Kwatampora Vincent Kansiime	Principal Procurement Officer	M
10	Mr. Geoffrey Mutebi	Internal Auditor	M
11	Mr. Prinari Behangana	Director Human Resource	M
12	Ms. Robinah F. Nakakeeto	Deputy Secretay (Pl.)	F
13	Mr. Timothy Mugumya Ndiana	Legal Officer	M
14	Assoc. Prof. Vincent Batwala	Director, Directorate of Research and Graduate Training	M
15	Assoc. Prof. Julius Lejju Bunny	Chair, Deans Committee	M
16	Eng. Patrick Mujunansi	University Engineer	M

Note: Female 2 (12.5%); Male 14 (87.5%)

Table 5: Deans and Directors

SN	Name	Faculty/Institute	Gender
1	Dr. Joseph Ngonzi	Dean, Faculty of Medicine	M
2	Assoc. Prof. Julius Bunny Lejju	Dean, Faculty of Science	M
3	Dr. Frederick Nsambu Kijjambu	Dean, Faculty of Business and Management Science	M

4	Dr. Rogers Bariyo	Dean, Faculty of Interdisciplinary Studies	M
5	Dr. Evarist Nabaasa	Dean, Faculty of Computing and Informatics	M
6	Dr. Johnes Obungoloch	Dean, Faculty of Applied Science and Technology	M
7	Mr. Emmanuel Kyagaba	Dean of Students	M
8	Prof. Jerome Kabakyenga	Director, Maternal Newborn and Child Health Institute	M
9	Dr. Dennis Babaasa	Director, Institute of Tropical Forest Conservation (ITFC)	M
10	Assoc Prof. Vincent Batwala	Director, Directorate of Research and Graduate Training	M
11	Mr. Prinari Behangana	Director, Human Resource	M

Note: All Males

Table 6: 33rd Guild Cabinet for the year 2022

SN	Name	Position	Gender
1	H.E. Jastus Kizito Mugenyi	Guild President	M
2	H.E. Maureen Nayebare	Vice President	F
3	Hon. Mayira Stuart	Prime Minister	M
4	Hon. Swagga Faraj	Min. of Social Affairs	M
5	Hon. Sabath Belson	Min. of Finance	M
6	Hon. Isooba Derrick Isaac	Min. of Health	M
7	Hon. Ndawula Harold Raymond	Min. of Education	M
8	Hon. Arinaitwe Happy	Min. of Gender and Guidance	F
9	Hon. Ainembabazi Spellah	Min. Campus Affairs	F
10	Hon. Twesigye Patric David	Min. of Off Campus Affairs	M
11	Hon. Muhame Darius	Min. Justice and Constitutional Affairs	M
12	Hon. Nimwesiga Aggrey	Min. Foreign Affairs Public Relations	M
13	Hon. Kiconco Shillah	Deputy Prime Minister	F

Note: Female 4 (30.8%); Male 9 (69.3%)

3. Central Administration

3.1 Office of the Vice Chancellor

According to UOTIA, 2001 (as amended), Section 32(1) stipulates that the Vice Chancellor shall:

Be responsible for the academic, administrative and financial affairs of the University, and in the absence of the Chancellor, preside at ceremonial assemblies of the University and confer degrees and other academic titles and distinctions of the University.

During this reporting period 2022, the Vice Chancellor, Prof. Celestino Obua (male), was responsible for leading other University Staff in the implementation and execution of the approved strategy, policies and operational planning.

3.2 International Relations Office

3.2.1 Introduction

The International Relations Office aims at increasing the visibility of Mbarara University of Science and Technology through proper and improved management of international collaborations and partnerships.

This report outlines the major activities that were attained in 2022 in the areas of supporting teaching, research and community engagement.

3.2.2 Activities coordinated by the International Relations Office in 2022

MUST increased its partnerships and engagement with collaborators where Institutional Memoranda of Understanding (MoU)s were signed.

3.2.3 Strengthened partnerships and collaborations

Annually on average, MUST hosts 300 international visitors mostly scholars and project partners across the globe.

3.2.4 MUST hosted the Ambassador of Cuba to Uganda

On April 13, 2022, MUST hosted the Ambassador of Cuba to Uganda H.E Dr. Tania Perez Xiques. Prof. Celestino Obua appreciated the strong ties that have provided MUST with expertise in different disciplines in Medicine in the last 33 years. H.E Dr. Tania Perez Xiques explained that sending their Professors to MUST is the main project that Cuba has in Uganda and they looked forward to the expansion of this partnership.



*Seated Left to Right: Prof. Silvia Lopez Miranda, Prof. Celestino Obua, H.E Tania Perez Xiques, Assoc. Prof. Charles Tushabomwe- Kazooba
Standing Left to right: Dr. Joseph Ngonzi, Prof. Carlos Manuel, Ms. Angella Nakato, Ms. Sheila Niinye Twinamatsiko, Eng. Saul Silverio, Dr. Celestine Barigye*

3.2.5 MUST- University of Ngozi partnership strengthened

In an effort to augment international partnerships, MUST participated in the Uganda – Burundi Joint Permanent Commission (JPC) Meeting held from March 22 to 24, 2022 in Bujumbura City, Burundi. The meeting was focused on increasing bilateral relations between the two countries. One of the resolutions was to develop a cooperation coordination committee for the MUST- University of Ngozi partnership to spearhead operations. The MUST Vice Chancellor Prof. Celestino Obua who headed the MUST delegation that comprised of Ms. Sheila Niinye Twinamatsiko, Dr. Data Santorino and Ms. Nuriat Nambogo led fruitful discussions to expand the partnership between MUST and University of Ngozi. Prof. Celestino Obua and Ms. Sheila Niinye Twinamatsiko the International

Relations Officer also visited University of Ngozi where they met the University leadership led by Rector Fr. Apollinaire Bangayimbaga and discussed more areas for further collaboration. The priority areas include staff and student exchange, joint research projects, joint supervision of graduate students and joint participation in conferences and workshops. Over the years, the MUST - Ngozi partnership has held joint hackathons organised by CAMTech and the Club Vision Santé (CVS) of University of Ngozi. Plans are under way to support the creation of an innovation hub at the Ngozi Medical campus and roll out PRISMS innovation in Burundi. Consular James Wafula of the Uganda Embassy in Bujumbura has paved way for the partnership to advance to its current stage



University of Ngozi staff together with MUST team



From left to right: *Consular James Wafula, Dr. Medard Twinamatsiko, Father Appolinaire Bayimbaga, Prof. Nixon Kamukama, Ms. Sheila Niinye, Dr. Timothy Ndiana Mugumya*

This was after an inaugural meeting was held with the MUST Cooperation Coordination Committee (CCC) meeting at MUST on October 22, 2022

3.2.6 Institutional Memoranda of Understanding signed in 2022

	Name of Institution	Country	Status	Years	Period	Purpose of MoU	Key SDGs to be addressed	Alignment to NDPIII
1	IOWA State University of Science and Technology	USA	New	5	August 3, 2022 to August 2, 2027	Promote interest in the teaching and research activities and to deepen the understanding of the economic, cultural, and social issues environment	SDG 4- Quality Education	Human capital development
2	Center for International Child Health British Columbia children's hospital Vancouver	Canada	Renewed MoU	5	November 16, 2022 to November 15, 2026	Child Health and research	SDG 3- Health and well being	
3	University of Dodoma	Tanzania	New	3	October 7, 2022 to October 6, 2025	Academic exchange, research and writing grants together	SDG 4- Quality Education	
4	University of Antwerp	Belgium	New	5	September 1, 2022 to August 31, 2027	Staff and student exchange and conducting research	SDG 4- Quality Education	
5	University of Buea	Cameroon	New	5	December 19, 2022 to December 19, 2027	Exchange of academic staff, researchers and student for the purposes of teaching and research	SDG 4- Quality Education	
6	HOWEST	Belgium	New	5	October 18, 2022 to October 17, 2027	Student exchange and academic cooperation	SDG 4- Quality Education	
7	Academics Without Borders	Canada	New	5	December 22, 2022 to December 21, 2027	Curriculum Development	SDG 4- Quality Education	
8	Powislanski University	Poland	New	5	February 15, 2022 to February 14, 2027	Staff and student exchange. Conduct study abroad programmes	SDG 4- Quality Education	
9	Somalia International University	Somalia	Renewed	5	August 24, 2022 to August 23, 2027	Have staff and student exchange. Conduct joint research	SDG 4- Quality Education	

3.2.7 Student exchange

3.2.7.1 MUST conducted virtual electives

The university conducted online student exchanges of 5 students with the Lusaka Nursing and Midwifery in Zambia. The students were Mr. John Ssentongo, Ms. Comfort Ashaba, Mr. Androdri Denis, Ms. Primerose Tumutegyerize and Ms. Rehema Mutaki. This was facilitated by the Global Educational Exchange in Medicine and the Health Professions (GEMX) participated in the IPE program within the Africa Forum for Research and Education in Health Regional Network (the “AFREhealth Network”) and funded by the Foundation for Advancement of International Medical Education and Research (FAIMER) in Philadelphia, USA. The opportunity provided the MUST students a platform to interact internationally as they engaged in solving health challenges and grew their networks.

3.2.7.2 MUST hosted students on electives

The university received the 9th cohort of occasional students from Somalia International University (SIU) on November 9, 2022. The Dean Faculty of Medicine (FoM), Dr. Joseph Ngonzi and Dr. Jonans Tusiimire received 18 students from SIU for their one-year placement in FoM. The international Relations office conducted their orientation, helped them settle in their new environment and supported them to start their English-speaking classes to polish their communication skills.

The Dean encouraged them to be focused, humble, make good friends with the national students and be respectful of the rules and regulations. In the same cohort were 3 students that would study for a year in Faculty of Computing and Informatics. The students were led by Dr. Andrew Okello, the Director, Centre for international programmes and linkages at Somalia International University.



Left to Right: Mr. Shafei Ahmed Hashi, Dr. Andrew Okello, Dr. Evarist Nabaasa, Mr. Abdirahman Hussein Muhamed and Mr. Musab Abdullahi Mohamed

3.2.8 International students appreciate MUST



3.2.9 Tanzania Ambassador launches Kiswahili Club

Characterised by traditional dances and cross country presentations, Friday September 23, 2022 was an exciting evening as MUST hosted the 6th international dinner which is an annual relaxing event that brings together international students and visitors from different countries. It is also time for management to interact with international students and set new strategies in fulfillment of the internationalisation agenda.

The highlight of the evening was the launch of the MUST Kiswahili Club by the guest of honour, H.E Dr. Aziz Ponary Malma, the Ambassador of the United Republic of Tanzania to Uganda, who commended MUST for the great work they are doing and the positive step to have the newly UN recognized language taught at MUST. Other dignitaries present were Mr. Timothee Munga Lemba,

Administrative Secretary/Education Attache, Democratic Republic of Congo Embassy in Kampala and Mr. Hashim Karumba the Financial Attache' of the Tanzania High Commission in Uganda. Prof. Celestino Obua, the Vice Chancellor of MUST appreciated the effort to launch the Kiswahili club and encouraged students to not only belong but ensure that they use the language which is a rich language integrating African dialects. One cannot go wrong with learning Kiswahili that is spoken by 200 million people across the globe according to UNESCO.

Students (130 [Female 48], [Male 82]) on fulltime programmes are from Kenya, Tanzania, Zambia, Nigeria, Somalia, Burundi, Ethiopia, Rwanda, Cameroon, Sierra Leone, Democratic Republic of Congo, South Sudan and India.



H.E Dr. Aziz Ponary Malma, the Ambassador of the United Republic of Tanzania to Uganda launching Kiswahili Club at the dinner



Kenyan students after their presentation at the dinner

3.3 Public Relations Office

During the year, the flag of the university was raised at national and international levels, thus creating visibility. Some of the outstanding stories include:

3.3.1 Visit by Prof. Adipala Ekwamu of RUFORUM

MUST has been a member of RUFORUM (Regional Universities Forum for Capacity Building in Agriculture) since 2015 where tripartite Graduate Teaching Assistantship (GTA) contracts with other universities within and outside the country have enabled training by hosting and receiving students in the field of agriculture. In the year 2022, a tripartite GTA contract was signed by RUFORUM, MUST and Bishop Stuart University (BSU) for a minimum period of 2 and maximum of 3 years. The Vice Chancellor,

Professor Celestino Obua attended the RUFORUM annual general meeting for the year 2022 held in Zimbabwe, Harare International Conference Center, where member universities showcased their acquired skills.

The Executive Secretary of RUFORUM, Professor Adipala Ekwamu visited MUST to oversee the progress of the collaboration. During his visit, he held a meeting with the University leaders that included: Deputy Vice Chancellor (F&A), Prof. Charles Tushabomwe-Kazooba who represented the Vice Chancellor, Faculty Deans, Directors, and the team from PHAMBIOTRAC pro



Group photo after the meeting

The team toured the teaching and research facilities in the University which included PHARMBIOTRAC museum for herbal products, laboratories and production units, the Botanical Garden, animal research facility and pharmaceutical departments. Students and some scientists exhibited their herbal products made at the university like the beard balm a remedy for growth of beards, Blackjack tea a remedy for

quality of the teaching facilities and make recommendations to the Parliament and line Ministries. Among the facilities inspected included: the departments of nursing, physiology, pathology, and biochemistry departments. The Members of Parliament (MPs) also visited the ongoing construction projects at Kihumuro main campus.



In his

ulcers, Plectrantine a drug for poultry and pigs, body cleansers, cough syrups, among others.

3.3.2 A visit by Parliamentary Education and Sports Committee

On November 22, 2022, the Parliamentary Education and Sports committee visited MUST to inspect university activities and projects funded by the Government. The committee, led by its chairperson Hon Twesigye John Ntamuhira, toured the facilities in the FoM to assess the



presentation to the MPs, Dr. Joseph Ngonzi the Dean FoM revealed that the Faculty receives many applybut

they are able to admit a few students due to the limited space. He cited the situation with the Bachelor of



Medicine and Bachelor of Surgery where over 2000 applications every year but only 90 are admitted to the programme. Dr. Ngonzi also informed the MPs about the recommendations made by the East African Medical Council for the effective running of the Medical School at MUST.

Assoc. Prof Nixon Kamukama, who represented the Vice Chancellor, presented the plan for expanding FOM through the construction of a multipurpose building to house the medical school which is the heart of MUST. He described that the process is ongoing whereby all the remaining Faculties are transferred to Kihumuro

main campus in a staggered manner. The process started with the Faculty of Applied Science and Technology (FAST) and soon Faculty of Computing and Informatics (FCI) will also be shifted and other Faculties will follow. The process will create space for the construction of the multipurpose FoM building which will accommodate well-equipped medical laboratories and all 24 departments. In response, Hon Twesigye communicated that they are going to reach out to the line ministries and National Council for Higher Education to report the university's concerns so that MUST continues to train quality health practitioners.



3.4 Office of the University Secretary

3.4.1 Greening the Human Resource during the year 2022

The office of the University Secretary is responsible for the coordination of administrative and financial activities of the university, management of the university vehicles, ensuring the security environment of the university, acquisition, control and disposal of university assets, arranging, conducting Council and Council Committee meetings, ensuring timely implementation of Council decisions, budget for coordination, budget control & implementation, information management and control under the records section.

Table 7: Entire University Staff

Staff Category	Male	Female	Total
Academic Staff	192	84	276
Administrative Staff	35	33	68
Support Staff	154	76	230
Total	381	193	574

Table 8: Staff numbers in the Office

Designation	Male	Female	Total in post	Staffing gap
University Secretary	01	00	01	00
Deputy University Secretary	00	01	01	00
Secretaries	00	02	02	00
Administrative Assistant	00	01	01	00
Office attendant	01	00	01	01
Security staff	24	04	28	33
Farm staff	01	01	02	00
University Mechanic	01	00	01	00
Drivers	15	00	15	02
Vehicle attendants	01	00	01	01
Records staff	01	01	02	00
Legal Officer	01	00	01	03
Legal Clerk	01	00	01	00
Total	47	10	57	40

3.5 Internal Audit and Risk Management

3.5.1 Mandate

Section 48 of the Public Finance Management Act, 2015 requires every Vote to have an Internal Auditor whose role shall include:

- a. Appraise the soundness and application of accounting, functional and operational controls of a vote.
- b. Evaluate the effectiveness and contribute to the improvement of risk management process of a vote and
- c. Provide assurance on the efficiency and the effectiveness of the economy in the administration of the

programmes and operations of the Vote.

The MUST Internal Audit Charter gives the Internal Auditor mandate to carry out independent audit of the University accounts and operations and report its findings and recommendations to Council through the Audit and Risk Management Committee.

3.5.3 Risk Matrix

The Internal Audit carried out a risk assessment and came up with a risk matrix as below.

3.5.2 Staffing Levels

Internal audit is staffed as below:

	Name	Position	Gender
1	Geoffrey Mutebi	Internal Auditor	Male
2	Musimirwe Moses	Senior Assistant internal auditor	Male
3	Nansubuga Bridget	Assistant Internal Auditor	Female
4	Mutungi Geoffrey	Senior Administrative Assistant	Male
5	Agaba Mary	Office attendant	Female

Table 9: Staffing in Internal Audit

Table 10: 2022 MUST Risk Matrix

S/ N	Risk Identified	Risk Category Causes	Analysis		Risk rating	Mitigation
			Likelihood	Impact		
1	Declining Government funding	Increase in number of public Universities sharing the same cake	High	Significant	High	a) Lobby Government for additional funding b) Establish good working relationship with Stake holders c) Operationalise Buhoma gorilla trekking camp d) Operationalise University INN e) Write proposals for funding
2	Declining Non Tax Revenue	Collection by URA Budgets by ministry of finance	High	Significant	High	a) Identify New sources and Enhance Existing sources b) Harvest Intellectual property as Intangible Assets c) Enroll projects into the University Sources of NTR
3	Operating in a global context	World ranking of Universities	High	Significant	High	a) Improving our research dissemination b) Strategize to produce best quality and many scientists in the world
4	Increased cost of education	increasing demand for quality education	High	Significant	High	a) Blended learning b) Adjust on Tuition fees
5	Worrying completion rate	-Low completion rate of 91%	High	Significant	High	a) Strengthen Quality Assurance b) Enforcement of Lecture Attendance
6	Making research sustainable	Limited funding of research by Government	High	Significant	High	a) Establishing of a center of excellence

						b) Integrate Research into Main stream University programmes
7	Staff strikes	Unclear guidelines in salary structures	High	Significant	High	a) To request MoES to communicate salary structures at planning time
8	Technology and digital innovation	Digital transformation	High	Significant	High	a) Offer online programs b) Invest in ICT infrastructure c) Retrain staff d) Have in house Computerized systems
9	Student strikes DoS and DQ	High expectations from students	High	Significant	High	a) Continuously get students feedback b) Free the space of communication c) Strong guide lines at the entrance level.
10	Job market needs and skills requirements	Changes in work environment	Moderate	Significant	High	a) Change curriculum b) Strengthen our internship programs
11	Fire out break	Fire destroying buildings, property and computer systems Destroying important documents	High	Significant	High	a) Use fire resistant material in construction planning, b) Procure Fire-resistant cabins, Smoke detectors and sprinklers, c) Conduct regular awareness
12	Payment of salaries for ghost employees	Paying salaries for employees who are not working.	Low	Low	Low	a) Verification of payroll by Internal Audit every month. b) Segregate and Enhance a system of accessing the pay roll c) Establish an Organizational structure

						d) Comply with systems and circulars from public service
13	Cyber security risks	Data theft and data loss	High	Significant	High	a) Invest in cyber security tools b) Conduct an awareness c) Have in house Computerized systems since we are science based University
14	Academic fraud	Plagiarism Examination malpractices Tempering with results	Moderate	Significant	High	a) Plagiarism software
15	Load-Shedding	Affects e-teaching an work environment	High	Significant	High	a) Standby Generator b) Have funds to run the generator c) Solar systems
16	Shortage of water	Affects the health and well being of People	High	Significant	High	a) Alternative source of water (underground, Rain water Harvests)
17	Dilapidated buildings in Town campus	Reduced revenue, Waiting for the Government and not being aware of the Human Catastrophe	High	Significant	High	a) Have local revenues from Intellectual property, Grants/ Projects and Enhance current Sources without waiting for the Ministry.
18	Reducing intellectual professionalism	Reduced rating of the university, Low Publication Low Completion Rate of students	High	Significant	High	a) Allow free expression of ideas, b) Establish a committee that feeds top management. c) Encourage open discussion d) Allow systems to operate and get feed back

Source: MUST Strategic Plan.

3.6 Finance Department

3.6.1 Introduction

Finance department is a support service unit that, manages the financial receipts and expenditures of the university funds through proper budgeting process, execution and monitoring. Finance department ensures proper financial controls are in place to efficiently and effectively manage the university resources. It ensures proper receipt, custody and issues of the university stores. It ensures proper management of the

university assets by maintaining an up-to-date assets register. It ensures compliance to financial regulations, policies and procedures. Finance department also provides oversight on all grant projects managed under Grants offices and outside Grants office.

3.6.3 The key deliverable

- a) Audited annual financial reports.

3.6.2 Staffing

Table 11: Finance Department staffing

NO.	Name	Position	Gender
1	Magyezi Felix Amanyia	University Bursar	Male
2	Musana Dominique	Deputy University Bursar	Male
3	Ndyaguma Francis	Senior Assistant Bursar	Male
4	Mugisha Jim	Senior Administrative Assistant	Male
5	Kato Hanson	Executive Officer	Male
6	Yeheyo Musinguzi Ephraim	Administrative Assistant	Male
7	Nsubuga Peter Jovan	Administrative Assistant	Male
8	Namugosa Monica	Administrative Assistant	Female
9	Turyatunga Frank	Executive Officer	Male
10	Turyabanawe Evas	Administrative Assistant	Female
11	Kamugisha Peter	Assistant Bursar	Male
12	Nafula Catherine	Executive Officer	Female
13	Komugisha Annet	Senior Accounts Clerk	Female
14	Kyomuhendo Betty	Clerical Officer	Female
15	Kekitinisa Lois	Administrative Assistant	Female
16	Ahimbisibwe Charity	Clerical Officer	Female
17	Bamukama Gorreti	Office Attendant	Female
18	Aturinde Macklean Kabalega	Principal Personal Secretary	Female
19	Atuhaire Alex	Administrative Assistant ITFC Bwindi	Male

Note: Female 9(47.4%); Male 10 (52.6%)

3.6.4 Achievements during the year

- a) Prepared and consolidated the university budget for the Financial Year 2021/2022.
- b) Quarterly budget performance reports for Q3 and Q4 2020/2021, Q1 and Q2 2021/2022 were prepared, presented and discussed up to Finance Planning and Development Committee of Council, and eventually to Council.
- c) Semi-annual report for the period January to June 2022 was prepared and submitted to the Ministry of Finance Planning and Economic Development.
- d) Final accounts for 2021/2022 were produced and audited by the office of Auditor General, and unqualified opinion was given.
- e) Board of Survey was constituted and did the stocktaking exercise for the year ended June 30, 2022 and the report produced.
- f) Budget framework paper for 2023/2024 was prepared and submitted.
- g) Continued to comply with the statutory obligations. Tax returns are prepared in time and submitted and tax thereon paid, we are up-to-date with NSSF payments.

3.6.5 Budget Performance for FY 2021/2022 as at June30, 2022

Table 12: Alignment of Vote Budget Performance to NDPIII

Programme	Sub programme	Sub sub programme	Budget Output/Department	PIAP Output	Programme intervention
12 Human Capital Development	01 Education, Sports and skills	01 Delivery of Tertiary Education	Teaching and Training		a) Established a functional labour market
			Research, Innovation and Technology Transfer	PIAP Output STEM/STEI incubation Centres established in universities Research and Innovation fund established in public universities	a) Promoted STEM/STEI focused strategic alliances between schools, training institutions, high caliber scientists and industry
			Community Outreach services	University, TVET students and graduates benefiting from work-based learning	a) Accelerated the acquisition of urgently needed skills in key growth areas
		02 General Administration and Support Services	001 Central Administration	NCHE's Basic Requirements and Minimum Standards in HEIs enforced	a) Equipped and supported all lagging primary, secondary schools and higher education institutions to meet the basic requirements and minimum standards
					b) Developed digital learning materials and operationalise Digital Repository c) Provided the critical physical and virtual science infrastructure in all secondary schools and training institutions

Table 13: Revenue Performance

Funding Source	Approved Budget (UGX. bn)	Actual Release (UGX. bn)	% Budget Released (UGX. Bn)	Actual Expenditure (UGX. bn)	% Release Spent (UGX. bn)
Recurrent Wage	40.101	40.101	100	39.533	98.58
Recurrent Non-wage	14.64	13.484	92.1	13.268	98.4
Development	3.686	1.085	29.4	1.081	99.6
Total	58.427	54.671	93.57	53.882	98.56

Table 14: Actual Release and Expenditure by sub-sub programme

Funding Source	Approved Budget (UGX. bn)	Actual Release (UGX. bn)	% Budget Released (UGX. Bn)	Actual Expenditure (UGX. Bn)	% Release Spent (UGX. Bn)
Support Services Programme	21.69	19.34	89.2	19.08	98.7
Delivery of Tertiary Education Programme	35.79	35.33	98.7	34.80	98.5
Total	57.48	54.67	95.1	53.88	98.6

Table 15: Summary of Actual Expenditure to sub-sub programme

Programme	Sub-programme	Total Budget (UGX. bn.)	Actual Release (UGX. bn.)	Actual Expenditure (UGX. bn.)	% Release Spent
Delivery of Tertiary Education	Faculty of Medicine	17.80	17.85	17.44	97.7
	Faculty of Science	6.63	6.47	6.45	99.7
	Faculty of Computing & Informatics	4.31	4.28	4.24	99
	Faculty of Applied Sciences & Technology	1.14	1.09	1.08	98.8

	Faculty of Business & Management Studies	2.69	2.61	2.58	99.1
	Faculty of Interdisciplinary Studies	2.83	2.80	2.79	99.5
	Directorate of Research & Graduate Training	0.3	0.18	0.18	98.6
	IMNCH	0.03	0.01	0.01	100
	CITT	0.06	0.03	0.03	100
Sub-total		35.79	35.33	34.80	98.5
Support Services	Central Administration	18.26	18.26	18.00	98.6
	Total Recurrent	54.050	53.580	52.800	98.54
	Infrastructure Development	3.03	0.76	0.76	99.5
	Retooling	0.66	0.33	0.33	100
	Total Development	3.69	1.09	1.09	100

Table 16: Major Achievements in FY 2021/2022

Budget output/ Department	Actual achievement	Triple Bottom line
Teaching and Training	Conducted graduation for 1,319 graduates (40.3% Female; 59.7% Male) including 228 (36%) postgraduates Conducted 21 weeks of lectures & practicals and 5 weeks of Examinations for 5,030 (37% Female; 63% Male) students	Social environmental, financial
Research	a) 3 Seed funding grants awarded to MUST Innovators to support technology development; b) 1 scientific writing & Grant development training workshop conducted for 3 teams of Innovators and 6th PhD Symposium for 25 candidates held.	

	c) Research Viva Voce for 21 Postgraduate students conducted. 3 Research Studies, 2 Publications, 2 Research workshops and 3 PhD Research facilitations done	
Outreach	<p>a) Industrial training for 68 (51.4% Female; 49.6% Male) DLT students in 18 locations of 6 districts, 5 weeks School practice for 296 (21.6% Female; 79.4% Male) BSc.Ed students in 149 single & mixed Secondary Schools across the country, 7 weeks of COBERS for 375 (36% Female) students of MBchB, BNS, MLS, BPHM & BSP across the south western region selected placement Health facilities, 57 students participated in Nursing practicum & domiciliary for 21 days in 15 schools across south western region.</p> <p>b) Week's industrial training for 112 Pharmacy & Pharmaceutical students conducted in 6 Industries and 4 Hospitals mainly in central region.</p> <p>c) 2 weeks Industrial training for 354 (22.9% Female; 77.1% Male) students of BME, PEEM, EEE & BCE conducted in 9 districts of central region and 15 districts of western region;</p> <p>d) 2 weeks Industrial Training for 105 (21% Female; 79% Male) students of BIT, BCS and BSc.</p> <p>e) SE conducted in over 12 sites in central and western Uganda; 2 weeks Industrial Training for 350 (50.9% Female; 49.1% Male)</p> <p>f) Students of BSAF, BBA, BPSM, and BECO was conducted across the country;</p> <p>g) Farm attachment was done for 46 students (28% Female; 72% Male) at Ibo farm, Kyera farm and Kamugasha dairy farm. 24 students taken for Apiculture and Aquaculture</p>	
Central Administration	<p>a) Procured 2,500 students Identity cards and office supplies (Examination materials).</p> <p>b) Subscription to over 30 online book sites through CUUL done.</p> <p>c) 634 GoU sponsored students were paid Living out Allowance. Counselling services offered to</p>	r)

108 (47.1% Female; 52.9% Male) Students and Staff. Facilitation for 42 External Examiners paid.

- d) 307,646.7 units of electricity, 48,649.96 units of water paid for
- e) 30 Council & its committee's meetings and 1 Council induction & 6 management meetings held.
- f) 7 staff paid Gratuity (Vice Chancellor, Deputy Vice Chancellor - Academic Affairs, Deputy Vice Chancellor Finance and Administration, University Secretary, Academic Registrar, Deputy Secretary (Administration), Director Human Resource and Director, Directorate of Research and Graduate Training).
- g) Security Services paid for, 14 Vehicles maintained and serviced
- h) Payment to Lawyers for case of STEAM and Allowances for 30 Short term contract staff done
- i) Subscription for 94MBps Internet and for Association of Commonwealth Universities (ACU), Inter University Council for East Africa Quality Assurance (IUCEA – QA), Uganda Quality Assurance Forum (UQAF), African Institute for Capacity Development (AICAD), RUFORUM, Vice Chancellors' Forum and Federation of Uganda Employers(FUE) done.
- j) 36 responses were made to Audit issues for FY 2020/21. Board of survey for FY 2020/21 was conducted. Transfers Mulago and ITFC done. Finalized financial statements for FY 2020/21, prepared Q3 and 9 months' financial statements and submitted to MoFPED. Responses to Audit issues prepared for memorandum by PS/ST.
- k) 15 Staff trained in AIMS upgrade. AIMS Service Fees for 4,441 Students to Zeenode paid. 4 Parttime Academic Staff were paid. Approved procurement plan implemented, Quarterly report prepared and submitted. 4 Staff trained on Electronic Government Procurement.
- l) Budget framework paper, Ministerial Policy Statement and Approved Budget Estimates for

FY 2022/23 and Quarter 1, 2 and 3 Budget performance reports prepared and submitted.

- m) Three Internal Audit reports prepared and submitted. Maintained 10.3 Ha of compounds and 20,030m² of Lecture rooms, labs and students' halls and 2 Lifts in FAST and 240 fire extinguishers serviced. Installed 2 street security lights at Kihumuro campus and Civil maintenance of Italian Lab (painting, Electrical, roof leakage working bench) and FOS (plumbing and electrical installation repairs) done. Participated in the students' admission process at Mulago Liaison Office.
- n) 6 Senate, 4 Quality Assurance and 5 examinations and admissions meetings.
- o) Held 12 Academic programmes reviewed and submitted to NCHE for accreditation.
- p) Salaries for 577 (31.7% Female; 68.3% Male) staff timely paid. 436 staff appraised.
- q) Transferred funds to Students Guild and Sports and Games for activities including completion of 2021/2022 Inter-Faculty games, Games & Sports Union Elections and Handover Dinner, started 2022/23 Inter- Faculty Games (Football & Netball) and MUST Chess and Scrabble Championship. External: 2nd round of National Women Volley ball, 2nd round of Western Men Volley ball, Western Rugby League, Western Handball Championship and National Athletics trials, National Club Championship (men and women) held in Kabale, FASU Tennis Championship for men and women in Makerere University, Western Rugby 7s Circuit (men) in Mbarara and Masaka, National (women) and Western (men) Volley ball Leagues. Netball Championship, National Volley ball League play offs for Women, Western Rugby League 15s, 1st AUUS mind games Championship and National Athletics Championship

Capital Development

- a) Retention certificate for Faculty of Computing & Informatics paid to Ms. Steam Inv. Ltd. Installation of 415V (LV) power line done. FCI Phase 2: 90% preliminary work, 10% Electrical,
- c)

10% Mechanical and 50% Internal Lime plaster and 10% External Plaster done although not paid for. Final outstanding balance on Students' Hostel Kihumuro campus. (External and internal finishes, electrical and mechanical installations, fixtures and fittings, parking & stone pitching. Chemical stabilisation priming, Bitumenising, Kerblines, drains.

- b) Microsoft pro education open value Licence software assurance pack enterprise one-year Network upgrade for FCI Computer Lab and Extension Wireless to Kihumuro, Cisco Catalyst switches WS-C3850-24. Kaspersky Endpoint security for Business-L 2626. Procured Hardware and Software upgrade for the Learning Management System. 2 Enterprise Servers, 1 layer 2 network switch- cisco, 2 Fibre FSP modules, 2 Fiber patch code 10m, 1 Server for LMS and 27 Desktop Computers for Students procured. 108 metres of curtains for Lugazi Students Hostel and Board room. 1 Orthopedic chair and curtains for Bursars office. 44 reading chairs, 50 Seminary room chairs and 52 reading tables for FAST procured

Table 17: Crosscutting Issues Achievements

Key output	Actual Expenditure (UGX.)	Actual achievement
HIV/AIDs	2,904,000	<p>MUST joined in the 16 days of activism campaign under the theme; “Orange the World: End Violence Now through Fostering Healthy Relationships” A discussion on Cyber Abuse on November 30, 2021. Commemorations of World AIDS day of December 1, 2021 (under the theme; “End Stigma. End HIV. End Pandemics”). The events were held in a blended manner and moderated by our own students, Panelists from MUST and other organisations were hosted.</p> <p>A 2-day training on sexual reproductive health, drug use & abuse, mental health and basic counseling skills was</p>

		<p>conducted to equip the current peer educators with skills to sensitise and disseminate information on HIV/and other sexual reproductive health matters. A total of 15 peer educators were trained. Of these, 6 were female. A team of Peer Educators conducted an outreach to hostels in Katete. They held discussions about prevention of Sexually transmitted diseases/infections with the university students.</p> <p>The trained Peer Educators conducted 2 movie nights on 05/02/2022 and 25/03/2022 at the MUST Peer Project grounds. About 50 students participated in the activities. Movie nights are conducted on Friday night to avert the precursors of risky sexual behaviours such as binge drinking, insecure returns to hostels after a night out, idleness within the hostels among others. The Peer Educators also conducted a meeting on 17/01/2022 to plan the semester's activities</p>
Gender	7,433,000	<p>On october 26, 2021, MUST hosted the Gender Mainstreaming Directorate (GMD) of Makerere University to disseminate the first phase of the findings of a study titled “Enhancing women’s participation and visibility in leadership and decision making of public universities in Uganda through action and evaluation research, 2019 – 2021”. The event was organised by the Faculty of Interdisciplinary Studies. Dr. Euzobia M. Baine, thePrincipal Investigator/ Director GMD, communicated that the objective of the study was to conduct a situation analysis of the gender terrain at six public universities and to obtain baseline information and use the results to design a participatory training manual on Gender and Leadership in universities.</p> <p>MUST joined the 16 days of activism campaign under the theme; “Orange the World: End Violence Now through Fostering Healthy Relationships” A discussion on Cyber Abuse on November 30, 2021.</p> <p>A meeting with Hostel Owners was held on November 25, 2021 at the University Inn. 54 (% Female) participants included hostel owners, local leaders, District Police Community Liason Officer, and staff. Discussions were on best practices in managing student issues. At the meeting the Gender, Sexual Harassment, HIV and Special Needs policies were also discussed.</p>

		<p>International Women's Day celebrations themed, 'GENDER EQUALITY TODAY FOR A SUSTAINABLE TOMORROW.' #Breakthebias was held on March 8, 2022, were conducted in form of outreaches. The former minister of gender Mr. Bridget Nsiimenta and current guild leaders reached out to 176 school going girls from, St. Anne's Vocational School Mbarara, MadarasatAnswar Islamic Primary school KateteMbarara, Imperial SS, Ibanda, and Ankore SS Ibanda, 16 girls from Lugazi village, Kakoba division Mbarara city and 48 women in the Prisons. The outreach focused on menstrual hygiene among school going children and impoverished communities.</p>
Special Needs	5,730,000	<p>The 16 days of activism campaign was run alongside the commemorations of: International Day of People with Disabilities on December 3, 2021 (under the theme; "Not All Disabilities are Visible"). The events were held in a blended manner and moderated by our own students who hosted panelists from MUST and other organisations</p> <p>Orientation: Printed advocacy material and distributed to Fresher's, registration of new members of staff and student online information. Held a meeting with Disability and SN at MUST to know each other and to devise means of sensitization of the Policy. 9 members attended and were given policy booklets and guiding principles. Facilitation for 8 GoU sponsored students with Special Needs done.</p> <p>Visited Tukore Invalids Salvation Stream Association (TISSA) as a way of networking. TISSA Facilitated 5 students in Accenture training each UGX 60,000. They organized a mentorship workshop on job creation for GRCs for PWDS were facilitated with refreshments, lunch and transport at UGX 30,000 and awarded Certificates to Trainees. 5 PWDs students were facilitated by TISSA to do training and one student to attend a workshop. Visited Hope Inclusive Development Centre in Bubaare 11, BwenshankuBubaare sub-county together with the GRC for PWDS MUST. Mobilized support of UGX. 100,000.</p> <p>Attended a stake holders exit meeting of inclusion works project by Tukore Invalids Salvation Stream (TISSA). National Council of People Living with Disabilities visited the Dean of Students Office to check on</p>

		management of PWDs affairs. Training for caregivers of people living with disabilities including staff from Dean of students, Academic Registrar, Faculty Deans, Administrators and Heads of Departments 26 participants were trained.
Environment	9,530,000	<p>300 Avenue Trees planted along the opened access roads at Kihumuro Campus from FAST Building to main Library, main entrance road and Estates block (a distance of about 800 meters).</p> <p>All grounds well maintained, Fumigation against snakes with repellent treatment was applied around the Library at Kihumuro campus. Fumigation against termites - moulds were dug and termite treatment applied to the affected areas. 3 acres of wild bush cleared. Waste disposal of toxic containers done. A variety of Trees was planted along the access to the multi-purpose Laboratory Block and compounds at Kihumuro campus. 8 waste bins procured for Hostels to maintain cleanliness</p>

3.6.6 Budget Execution challenges

a) The major budget execution challenge was the inadequate releases that affected execution of some planned activities e.g the development budget release was at 29.4% (UGX. 1.085bn) out of approved budget of UGX. 3.686bn. The non-release of 70.6% of Development funding affected implementation of the following planned projects: Completion works for Faculty of Computing and Informatics with a Contractor on sight and works on-going without any payments; Renovation of Facilities at Mbarara city campus (Pathology Block & Expatriate Quarters) and Completion of construction of the main Gate at Kihumuro Campus (External tiling).

b) Amidst inadequate releases, the University also faced a challenge of overlapping academic years with almost 3 Semesters in one financial year 2021/22, which resulted into additional requirement like Living out Allowance, more Teaching materials, Academic /field Trips, among others which were not budgeted for. This resulted into postponement of the Second Semester for Academic Year 2021/22 from beginning in May 2021 to July 2021.

3.6.7 Auditor General's Report

Below we reproduce the Auditor General's report on the university's financial statements for the year ended June 30, 2022.

**REPORT OF THE AUDITOR GENERAL ON THE FINANCIAL STATEMENTS OF
MBARARA UNIVERSITY OF SCIENCE AND TECHNOLOGY FOR THE YEAR ENDED
30TH JUNE, 2022**

THE RT. HON. SPEAKER OF PARLIAMENT

Opinion

I have audited the accompanying financial statements of the Mbarara University of Science and Technology (MUST) for financial year ended 30th June 2022, which comprise the Statement of Financial Position as at 30th June 2022, the Statement of Financial Performance, Statement of Changes in Equity and Statement of Cash Flows together with other accompanying statements for the year then ended, and notes to the financial statements, including a summary of significant accounting policies.

In my opinion, the financial statements of Mbarara University of Science and Technology for the financial year ended 30th June 2022 are prepared, in all material respects, in accordance with Section 51 of the Public Finance Management Act, 2015 and the Financial Reporting Guide, 2018.

Basis for Opinion

I conducted my audit in accordance with International Standards of Supreme Audit Institutions (ISSAIs). My responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of my report. I am independent of the University in accordance with the Constitution of the Republic of Uganda, 1995 (as amended), the National Audit Act, 2008, the International Organization of Supreme Audit Institutions (INTOSAI) Code of Ethics, the International Ethics Standards Board for Accountants (IESBA) Code of Ethics for Professional Accountants (Parts A and B) and other independence requirements applicable to performing audits of Financial Statements in Uganda. I have fulfilled my other ethical responsibilities in accordance with the IESBA Code, and in accordance with other ethical requirements applicable to performing audits in Uganda. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Key Audit Matter

Key Audit Matters are those matters that, in my professional judgment, were of most significance in my audit of the financial statements of the current period. These matters were addressed in the context of my audit of the financial statements as a whole, and in forming my opinion thereon, and I do not provide a separate opinion on these matters. I have determined the matters described below to be key audit matters communicated in my report.

- **Implementation of the Approved Budget**

Paragraph 2 of Schedule 5 of the PFMA, 2015 requires Accounting Officers to prepare an appropriation account showing the services for which the money expended were voted, the sums actually expended on each service and the state of each vote compared with the amount appropriated for that vote by Parliament.

Over the years, I have observed improvements in the performance regarding implementation of the budget but entities still face a number of challenges including

COVID, which continue to affect implementation of activities, service delivery and credibility of the budget. It is against this background that budget performance was considered a key audit area during the office-wide planning. I reviewed documents such as work plans, performance reports, conducted interviews and physical inspection in arriving at my findings.

Mbarara University of Science and Technology (MUST) is mandated under Universities and other Tertiary Institutions Act, 2001 (as amended), to deliver Tertiary Education to Ugandans and non-Ugandans.

The entity had an approved budget of UGX. 59,170,985,900 out of which UGX. 54,671,075,130 was warranted. The entity's key deliverables for the financial year under review were as shown in the table below;

Table: Showing key deliverables for MUST for the year-

No	Department	Output	Details	Budget (UGX)	Cumulative % share of the total approved budget
				'000'	
1	01 Central Administration	71301	Administrative Services	19,069,214	32
2		71302	Financial Management and Accounting Services		
3		71303	Procurement Services		
4		71304	Planning and Monitoring Services		
5		71305	Audit		
6		71307	Estates and Works		
7		71309	Academic Affairs (Inc. Convocation)		
8		71310	Library Affairs		
9		71311	Student Affairs (Sports affairs, guild affairs, chapel)		
10		71319	Human Resource Management Services		
11		71353	Guild Services		
12	04 Faculty of Medicine	71401	Teaching and Training	18,290,265	63
13		71402	Research and Graduate Studies		
14		71403	Outreach		
15	03 Faculty of Science	71401	Teaching and Training	6,657,660	74
16		71402	Research and Graduate Studies		
17		71403	Outreach		
18	07 Faculty of Computing and Informatics	71401	Teaching and Training	4,343,686	82
19		71402	Research and Graduate Studies		
20		71403	Outreach		
21	0368 Development	71373	Roads, Streets and Highways	3,034,000	87
22		71380	Construction and Rehabilitation of Learning Facilities (Universities)		

23		71382	Construction and Rehabilitation of Accommodation Facilities		
24	09 Faculty of Interdisciplinary Studies	71401	Teaching and Training	2,849,529	92
25		71402	Research and Graduate Studies		
26		71403	Outreach		
27	08 Faculty of Business and management Sciences	71401	Teaching and Training	2,721,752	96
28		71402	Research and Graduate Studies		
29		71403	Outreach		
30	06 Faculty of Applied Sciences	71401	Teaching and Training	1,163,423	98
31		71402	Research and Graduate Studies		
32		71403	Outreach		
33	1650 Retooling of Mbarara University of Science and Technology	71376	Purchase of Office and ICT Equipment, including Software	651,700	99
34		71377	Purchase of Specialised Machinery & Equipment		
35		71378	Purchase of Office and Residential Furniture and Fittings		
36	11 Directorate of Research and Graduate Training	71401	Teaching and Training	279,753	100
37		71402	Research and Graduate Studies		
38		71403	Outreach		
39	12 Centre of Innovations and Technology Transfer	71401	Teaching and Training	60,000	100
40		71402	Research and Graduate Studies		
41		71403	Outreach		
42	10 Institute of Maternal and New born Child Health	71401	Teaching and Training	31,934	100
43		71402	Research and Graduate Studies		
44		71403	Outreach		
	Total			59,170,917	

I reviewed the implementation of the approved 2021/2022 budget by the entity and noted the following;

No	Observation	Recommendation
1.1	<p>Revenue Performance</p> <p>Performance of Non-Tax Revenue (NTR)</p> <p>I reviewed the NTR estimates, revenue sources and rates charged at vote level for the financial year 2021/2022 and noted that the entity budgeted to collect NTR of UGX.12.477Bn during the year under review. Out of this, only UGX.10.844Bn was collected, representing a performance of 87% of the target.</p> <p>The inadequate performance in NTR performance was partly attributed to non-payment of tuition fees by some students.</p> <p>Shortfalls in NTR collections at vote level result in aggregate NTR/revenue shortfalls at the Treasury level,</p>	<p>The Accounting Officer was advised to institute more enforcement collection procedures like paying on the first day of the semester.</p>

which negatively affects the implementation of planned activities by government. In addition, unrealistic NTR estimates at vote level result in un-realistic NTR estimates at Treasury level which negatively affects the credibility of the budget.

The Accounting Officer indicated that the enforcement procedures were in place as provided for in the fees policy which was being revised to include penalties for delayed payments. This is in addition to not permitting any student to sit for exams without payment.

Performance of GoU Receipts

According to the approved budget, the entity was supposed to receive UGX. 59.171Bn out of which UGX.54.671Bn was warranted, resulting in a shortfall of UGX4.53Bn. The shortfall represents 7.6% of the revised approved budget.

The funds that were not warranted were meant to facilitate the implementation of the following activities, which were either partially implemented or not implemented at all.

No	Out put	Activity	Budget Amount	Purpose
1	713 76	Equipment & accessories to enhance network operation services procured & installed. 1 Server for LMS & 12 Desktop Computers for Students procured. Wireless network at Kihungu expanded. Network infrastructure in Lab III FCI repaired & upgraded.	200,000,000	Facilitate learning of students
2	713 78	Assorted Furniture & Fittings for Offices, Lecture rooms and Laboratories procured & installed	140,000,000	Facilitate learning of students
3	713 77	Assorted Machinery & Equipment for Offices, Laboratories and teaching procured	119,768,714	Facilitate learning of students
4	713 80	Phase 2 construction Works for FCI continued,	2,651,000,000	Facilitate learning of students
Total			3,310,768,714	

The Accounting Officer was advised to liaise with MOFPED to ensure that GOU funds are released as planned.

	The Accounting Officer indicated that follow up on releases was being made.																															
1.2	<p>Utilization of Warrants</p> <p>Out of the total warrants of UGX.54.671Bn received during the financial year, the entity submitted invoices totalling UGX.53.870Bn resulting in un-utilized warrants of UGX.0.802Bn representing an absorption level of 99%.</p> <p>The warrants that were not utilised were meant for the following activities which were subsequently partially or not implemented at all.</p> <table><tr><th>N o</th><th>Out-put</th><th>Activity</th><th>Amount</th><th>Reason for underutilization of warrants</th></tr><tr><td>1</td><td>071919 Human Resource Management Services</td><td>Salaries</td><td>170,301,306</td><td>Saving from late recruitment of staff</td></tr><tr><td>2</td><td>04 Faculty of Medicine</td><td>Salaries</td><td>330,962,128</td><td>Saving from late recruitment of staff</td></tr><tr><td>3</td><td>04 Faculty of Medicine</td><td>Social security contributions</td><td>66,323,499</td><td>Saving from late recruitment of staff</td></tr><tr><td>4</td><td>07 Faculty of Computing and Informatics</td><td>Salaries</td><td>33,952,615</td><td>Saving from late recruitment of staff</td></tr><tr><td></td><td>Total</td><td></td><td>603,539,548</td><td></td></tr></table> <p>As a result of failure to absorb funds the entity still has staffing gaps affecting service delivery.</p> <p>The Accounting Officer explained that the recruitment exercise has many processes that begin at budgeting, release of funds, running adverts short listing, interviewing etc.</p> <p>A release for recruitment was made In June 2022 when the financial year was ending and such processes could not be implemented.</p>	N o	Out-put	Activity	Amount	Reason for underutilization of warrants	1	071919 Human Resource Management Services	Salaries	170,301,306	Saving from late recruitment of staff	2	04 Faculty of Medicine	Salaries	330,962,128	Saving from late recruitment of staff	3	04 Faculty of Medicine	Social security contributions	66,323,499	Saving from late recruitment of staff	4	07 Faculty of Computing and Informatics	Salaries	33,952,615	Saving from late recruitment of staff		Total		603,539,548		<p>The Accounting Officer was advised to always ensure that recruitments are done on time as planned.</p>
N o	Out-put	Activity	Amount	Reason for underutilization of warrants																												
1	071919 Human Resource Management Services	Salaries	170,301,306	Saving from late recruitment of staff																												
2	04 Faculty of Medicine	Salaries	330,962,128	Saving from late recruitment of staff																												
3	04 Faculty of Medicine	Social security contributions	66,323,499	Saving from late recruitment of staff																												
4	07 Faculty of Computing and Informatics	Salaries	33,952,615	Saving from late recruitment of staff																												
	Total		603,539,548																													
1.3	<p>Appropriateness of Key Performance Indicators-</p> <p>Regulation 11 (2) b of the Public Finance Management Regulations 2016, states that the work plan of a vote shall indicate the key performance indicators to be used to gauge the out-puts.</p> <p>In order to correctly measure performance, the performance indicators should be appropriate in respect to the activities for which performance is being assessed/ measured.</p> <p>I reviewed the performance indicators in the approved work plans and observed that the indicators used to measure performance for some activities would not provide the most appropriate measure of performance. In some cases, the indicators were generic and not specific to the activity while in other cases, management did not provide indicators.</p>	<p>The Accounting Officer was advised to always ensure that the performance indicators used to measure performance are appropriate and facilitate accurate assessment of performance.</p>																														

	<p>Using in-appropriate performance indicators to measure performance negates the purpose of performance measurement, impairs accountability for funds appropriated, and is likely to mislead the users of the performance information produced.</p> <p>Accounting Officer explained that they will try as much as possible to ensure that the performance indicators used to measure performance are appropriate and facilitate accurate assessment of performance.</p> <p>Please note that Cross cutting issues indicators are usually in a separate report that is never generated by the system.</p>	
1.4	<p><u>Implementation of Outputs and Activities</u></p> <p>I assessed the implementation of a sample of twenty-five (25) outputs that had been fully quantified with a total of eighty-three (83) activities worth UGX.41.861Bn and noted that;</p> <ul style="list-style-type: none"> • Ten (10) outputs with twenty (20) activities and expenditure worth UGX.1.629Bn were fully implemented. • Thirteen (13) outputs with fifty-nine (59) activities worth UGX.40.073Bn were partially implemented. Out of the fifty-nine (59) activities, the entity fully implemented twenty (20) activities; eighteen (18) activities were partially implemented, while twenty-one (21) activities remained unimplemented. • Two (2) outputs with four (4) activities worth 0.159Bn were not implemented at all. <p>Non-implementation of planned activities implies that the expected services to the beneficiary communities were not attained. For example, the university did not implement the following planned activities despite having received the required funds. Details in Appendix I</p> <ol style="list-style-type: none"> 1. Under 03 Faculty of Science, in 071402 Research and Graduate Studies, the University did not implement <ol style="list-style-type: none"> a) 2 Research studies b) 3 Publications <p>The Accounting Officer explained that 1 Research was done but 3 publications made instead of the planned 1 publication and 1 research workshop for capacity building conducted.</p> <p>Other areas where there was partial implementation were mainly due to inadequate releases and change in academic calendar.</p>	<p>The Accounting Officer was advised to always ensure that activities and outputs are implemented as planned.</p>

Emphasis of Matter

Without qualifying my opinion, I would like to draw the readers' attention to the following matter which has been disclosed in Note 19 (a) of the financial statements of the University;

Delayed Collection of Receivables: UGX. 958,118,173

A review of the balance sheet, under receivables and Note 19(a) revealed that receivables from 2020/21 worth UGX. 958,118,173 had not yet been paid. Delayed collection of the receivables could lead to loss of revenues to the University.

The Accounting Officer explained that, delay in the collection of receivables was due to the effects of covid-19 that led to failure by students/parents to raise the required funds and consequently such students could not register, asked for dead years and absconded.

I advised the Accounting Officer to attach a schedule of all receivables to the financial statement, and also institute enforcement mechanisms for collections.

Other Information

The Accounting Officer of the University is responsible for the other information. The other information comprises the statement of responsibilities of the Accounting Officer and the commentaries by the Head of Accounts and the Accounting Officer, and other supplementary information. The other information does not include the financial statements and my auditors' report thereon. My opinion on the financial statements does not cover the other information and I do not express an audit opinion or any form of assurance conclusion thereon.

In connection with my audit of the financial statements, my responsibility is to read the other information and, in doing so, consider whether the other information is materially consistent with the financial statements or my knowledge obtained in the audit, or otherwise appears to be materially misstated. If, based on the work I have performed, I conclude that there is a material misstatement of this other information; I am required to report that fact. I have nothing to report in this regard.

Management Responsibilities for the Financial Statements

Under Article 164 of the Constitution of the Republic of Uganda, 1995 (as amended) and Section 45 of the Public Finance Management Act, 2015, the Accounting Officer is accountable to Parliament for the funds and resources of Mbarara University of Science and Technology.

The Accounting Officer is also responsible for the preparation of financial statements in accordance with the requirements of the Public Finance Management Act, 2015 and for such internal control as management determines necessary to enable the preparation of financial statements that are free from material misstatement whether due to fraud or error.

In preparing the financial statements, the Accounting Officer is responsible for assessing the University's ability to continue as a going concern, disclosing, as

applicable, matters related to going concern and using the going concern basis of accounting, unless the Accounting Officer has a realistic alternative to the contrary.

The Accounting Officer is responsible for overseeing the University's financial reporting process.

Auditor's Responsibilities for the Audit of the Financial Statements

My objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with ISSAIs will always detect a material misstatement, when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in aggregate, they could reasonably be expected to influence the economic decisions of users, taken on the basis of these financial statements.

As part of an audit in accordance with ISSAIs, I exercise professional judgement and maintain professional scepticism throughout the audit. I also;

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the University's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the University's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my auditor's report. However, future events or conditions may cause the University to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

I communicate with the Accounting Officer regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

I also provide the Accounting Officer with a statement that I have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on my independence, and where applicable, related safeguards.

From the matters communicated with the Accounting Officer, I determine those matters that were of most significance in the audit of the financial statements of the current period and are therefore the key audit matters. I describe these matters in my auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, I determine that a matter should not be communicated in my report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

Other Reporting Responsibilities

In accordance with Section 19 (1) of the National Audit Act, 2008, I report to you, based on my work described on the audit of Financial Statements, that; except for the matters raised in compliance with legislation section below, and whose effect has been considered in forming my opinion on financial statements, the activities, financial transactions and information reflected in the financial statements that have come to my notice during the audit, are in all material respects, in compliance with the authorities which govern them.

Report on the Audit of Compliance with Legislation

In accordance with Section 19 of the NAA 2008, I have a responsibility to report material findings on the compliance of the Ministry with specific matters in key legislations. I performed procedures primarily to identify findings but not to gather evidence to express assurance.

The material findings in respect of the compliance criteria for the applicable subject matters are as follows;

Splitting of Procurements: UGX. 311,643,492

Regulation 7 of the PPDA (Rules & Methods of procurement of services, works and Non-Consultancy Services Evaluation) Regulations 2014 requires the Micro procurement to be used for unforeseen requirements where the estimated value of the procurement does not exceed the threshold prescribed in guidelines issued by the Authority. Regulation 6(1) PPDA (PDES) Regulations 2014, states that a procuring and disposing entity shall not split a procurement requirement where the requirement can be procured as a single contract.

I noted that procurements totalling to UGX. 311,643,492 sourced using Micro procurement were split to fit within the set threshold of UGX. 5,000,000. Splitting of procurements is irregular and may lead uncompetitive and unfair procurements.

The Accounting Officer explained that, the University had frame work contracts with the suppliers involved in supply of stationery, toners and cartridges, cleaning materials, garbage collection services, compound maintenance, cleaning services among others and that most of the LPOs that appeared as split procurements were actually generated to facilitate payments for the call off orders under these framework contracts. However, management did not avail the framework contracts.

I advised the Accounting officer to always ensure that set thresholds are adhered to when procuring supplies and works.

Unauthorized Multi-Year Expenditure Commitment

Section 19 (1&2) of the Pubic Finance Management Regulation, 2016 states that an Accounting Officer who implements a project for more than one financial year shall, prior to the commencement of the project, demonstrate to the Minister that the financial Commitments for implementing the project are within the Medium Term Expenditure Framework and that a project that is to be implemented over a period of more than one financial year, shall have priority in the subsequent budgets of the vote, for the duration of the project.

I noted that the University entered into a contract worth UGX. 8,397,814,309 with a contractor to construct Phase 2, of faculty of Computer Formatics, for a period of 18 months. I further noted that the funds to pay for the multi- year project were not released as budgeted, an indicator that the Accounting Officer did not prior to starting this project engage the Minister of Finance for financial commitments. The failure to provide funds for the multi-year project may lead to costs over runs and unnecessary variations as a result of inflation and interest.

The Accounting Officer explained that, the University had been building the Faculty of Computing and informatics in Phases due to limited resources. The contract was awarded at once in its entirety. As a result of inadequate development funds availed to the University, the obligation created by the commitment is not supported and captured by the MTEF.

I advised the Accounting Officer to regularise the commitment created by engaging MoFPED to provide funds.

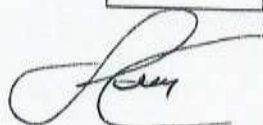
Management of Information Technology (IT) Investments in Government

For the current year 2021/2022, the entity budgeted for UGX. 363,194,000 for acquisition and implementation of IT systems and equipment and received UGX. 226,122,986.

A review of ICT activities implemented revealed the following;

No	Observation	Recommendation
8.1	<p>Procurement/Development and Use of Software/Licenses (IT Systems) and Equipment</p> <p>The ICT Systems Development Lifecycle (SDLC) requires a systematic approach which includes; initiation, planning and execution. In addition, I made my assessment basing on PS/ST and NITA-U guidance on ICT developments which aim to promote rationalisation and avoid further development of isolated IT systems in MDAs and LGs. During the audit of MUST, I observed the following;</p> <ol style="list-style-type: none"> <li>i. A total of 3 IT systems/equipment procured at UGX. 122,410,500 were not cleared by NITA-U, while systems costing UGX. 122,410,500 did not have clearance from MoFPED, as indicated in Appendices III(a) and III(b) respectively. <li>ii. User requirements and system specifications were not complied with for total of 3 systems with acquisition cost of UGX. 122,410,500 as observed from the system requirements. Refer to Appendix III(c). <li>iii. I reviewed documents relating to the procurement of 3 systems and noted that the systems are not owned by the entity; as a result, it increases the exposure of the entity to vendor manipulation. Appendix III (d). <p>Non-compliance could lead to duplication of acquisition, procurement of non-compatible solutions and equipment; and general deviation from Government's efforts to rationalize resources for better service delivery.</p> <p>The Accounting Officer explained that the systems in question were acquired after substantive review of the user requirements of the prospective users.</p> <p>For example, the Zoom license acquired from NITA-U came in at a time the University was completely locked as a result of COVID. The need to upgrade the Learning Management System was also generated from feedback from both students and academic. This engagement culminated in the commissioning of an online needs assessment tool in 2020 to both academic staff and students to measure the university's ability to take on e-learning as an option during the COVID-19 lockdown.</p> <p>The Turnitin Anti Plagiarism tool had for long been a requirement from the Directorate of Research and Graduate Training for use, especially with Postgraduate student to measure the level of</p>	<p>I advised the Accounting Officer to enhance controls and improve compliance with the policies and guidelines.</p>

No	Observation	Recommendation
	<p>plagiarism of their proposals and dissertations before graduation from the university. The use of an Anti-plagiarism tool is actually stipulated in the university's Post graduate handbook.</p> <p>The need to always clearly stipulate business cases and seek approval for all ICT procurement specifications from NITA-U and other government agencies has been noted and shall be implemented hence force.</p>	
8.2	<p>ICT Governance</p> <p>IT governance entails leadership, structures, and processes that enable an organization to make decisions to ensure that its IT sustains and extends its strategies and objectives. However, a review of the ICT governance structure of the entity revealed that;</p> <ol style="list-style-type: none"> The entity did not have an approved IT staff structure in place despite ICT prioritisation in NDP III. The entity has no ICT staff establishment. There was no approved IT risk management framework/policy at the entity, and risk register. There was no business continuity plan, contrary to Section 4.6 of the National Information Security Policy 2014. <p>Absence of ICT governance structures hampers formulation of appropriate ICT policies, strategies and real time upgrade of ICT interventions. In addition, it may lead to misalignment of IT investments with the overall entity strategic objectives.</p> <p>The Accounting Officer explained that the structure was being done in consultation with Public service.</p>	<p>I advised the Accounting Officer to institute governance policies, structures to effectively manage ICT investments in consultation with other stakeholders.</p>



John F.S. Muwanga
AUDITOR GENERAL

19th December, 2022

3.7 Academic Registrar's Department

3.7.1 Introduction

Sec 34 (3) of the Universities and Tertiary Institutions Act (2001) states that the Academic Registrar shall assist the Deputy Vice Chancellor-AA in the administration and organization of all academic matters including admission, undergraduate studies, postgraduate studies, examinations, research and publication.

3.7.2 Specific roles of the Department of Academic Registrar

The office is responsible for the following roles:

- a) Admissions
- b) Enrolment and Registration
- c) Teaching and learning schedules
- d) Examination Management
- e) Results Management
- f) Graduation
- g) Convocation
- h) Quality Assurance- Accreditation of programmes
- i) Election of Deans
- j) Career Guidance
- k) Marketing

3.7.3 Applications and Admissions for Year One students

Applications

The table below shows a summary of admission statistics

Projected	Applications to Private sponsorship	Admitted Private	Admitted Government	Total Admitted	Registered
1753	2774	1359	161	1520	Students have reported to register are 788 as at 16/5/23

3.7.4 Sponsorship

Below is a table showing categories of sponsorship;

Table 18: Sponsorship categories

Organisation	Number of students sponsored	%
Private	2865	71.6
Government	606	15.1
Loan Scheme	253	6.3
FAWE	20	0.5
State House Welfare	31	0.8
Father Bash Foundation	22	0.6
Cotton Foundation	2	0.05
Link to Progress	2	0.05
Help to Help	51	1.3
Ministry of Health	38	0.9
First Mile	22	0.6
Staff Development	4	0.1
Biological Scheme	44	1.1
Windle International	3	0.1
UPDF	19	0.5
TEST 4 Uganda	13	0.3
Madhvani Foundation	6	0.1
Grand Total	4,001	100

3.7.5 Enrollment and Registration of Students

Table 19: Admission Statistics for 2022

SN	PROGRAMME	Projected	Applications Received	Admitted			Enrolled	Registered
				M	F	Total		
Faculty of Applied Sciences and Technology								
1	Bachelor of Biomedical Engineering	65	42	30	1	31	11	5
2	Bachelor of Engineering in Electrical and Electronics Engineering	70	69	41	8	49	31	20
3	Bachelor of Science in Civil Engineering	-	146	55	8	63	26	22
4	Bachelor of Science in Mechanical and Industrial Engineering	-	37	24	2	26	14	12
5	Bachelor of Science in Petroleum Engineering and Environmental Management	60	14	16	5	21	8	7
Sub Total		195	308	166	24	190	90	66
Faculty of Business and Management Sciences								
6	Bachelor of Business Administration	60	20	12	8	20	7	6
7	Bachelor of Science in Accounting and Finance	90	23	13	5	18	8	5
8	Bachelor of Science in Economics	15	5					
9	Bachelor of Science in Procurement and Supply Chain Management	137	9					

Sub Total	302	57	25	13	38	15	11
Faculty of Computing and Informatics							
10 Bachelor of Information Technology	92	41	24	11	35	24	13
11 Bachelor of Science Computer Science	30	25	18	2	20	10	7
12 Bachelor of Science in Software Engineering	60	28	16	3	19	7	4
Sub Total	182	94	58	16	74	41	24
Faculty of Interdisciplinary Studies							
13 Bachelor of Science in Agriculture and Livelihoods	20	12					
14 Bachelor of Science in Gender and Applied Women Health	15	2					
15 Bachelor of Science in Planning and Community Development	25	5					
Sub Total	60	19	0	0	0	0	0
Faculty of Medicine							
16 Bachelor of Medical Laboratory Science	75	76	64	20	84	35	27
17 Bachelor of Medical Laboratory Science (Completion) [MUST]	25	53	21	5	26		
18 Bachelor of Medical Laboratory Science (Completion) [Mulago]	40	113	60	21	81		
19 Bachelor of Medicine and Bachelor of Surgery	90	528	82	11	93	75	62
20 Bachelor of Nursing Science	36	14	32	18	50	11	10
21 Bachelor of Nursing Science (Completion) [MUST]	30	82	14	19	33		
22 Bachelor of Nursing Science (Completion) [Jinja]	55	128	18	40	58		
23 Bachelor of Pharmacy	66	159	74	21	95	52	38
24 Bachelor of Science in Pharmaceutical Sciences	54	62	36	13	49	11	8
25 Bachelor of Science in Physiotherapy	35	27	20	10	30	9	5
26 Bachelor of Science in Physiotherapy (Completion)	5	6	1		1		
Sub Total	511	1248	422	178	600	193	150
Faculty of Science							
27 Bachelor of Science with Education [Biology & Chemistry]	55	8	45	2	47	43	42
28 Bachelor of Science with Education [Chemistry & Mathematics]	30	6	5	2	7	2	2
29 Bachelor of Science with Education [Physics & Mathematics]	55	7	31		31	18	17
30 Diploma in Science Laboratory Technology	30	11					
31 Higher Education Access Certificate [Physics & Mathematics]	15	1					
32 Higher Education Access Certificate [Biology & Chemistry]	20	7					
33 Higher Education Access Certificate [Chemistry & Mathematics]	15	2					
Sub Total	220	42	81	4	85	63	61
Undergraduate Total	1470	1768	752	235	987	402	312
POSTGRADUATE PROGRAMMES							
Faculty of Applied Sciences and Technology							

34	Doctor of Philosophy in Biomedical Engineering	2	2	1		1	1	1
Faculty of Business and Management Sciences								
35	Master of Business Administration	30	70	28	20	48	21	5
36	Doctor of Philosophy in Business Administration	2	22	5	2	7	2	1
Sub Total		32	92	33	22	55	23	6
Faculty of Computing and Informatics								
37	Masters in Business Informatics		2			0		
38	Master of Science in Health Information Technology	5	24	13	1	14	6	2
39	Master of Science in Information Systems	10	27	15	3	18	8	3
40	Postgraduate Diploma in Business Informatics					0		
41	Postgraduate Diploma in Health Information Technology		1			0		
42	Postgraduate Diploma in Information Systems		1			0		
43	Doctor of Philosophy in Computing by Research	1	15	2	5	7	2	1
Sub Total		16	70	30	9	39	16	6
Faculty of Interdisciplinary Studies								
44	Master of Arts in Development Studies	5	2			0		
45	Master of Arts in Planning and Governance	5	1			0		
46	Master of Arts in Peace and Conflict Studies		2			0		
47	Postgraduate Diploma in Criminology		3			0		
48	Doctor of Philosophy in Development Studies	2	10	5	2	7	2	1
Sub Total		12	18	5	2	7	2	1
Faculty of Medicine								
49	Master of Medicine in Anaesthesiology and Critical Care	5	9	4	1	5	4	3
50	Master of Medicine in Community Practice and Family Medicine	1	3	1	1	2	1	1
51	Master of Medicine in Dermatology	5	35	3	4	7	2	1
52	Master of Medicine in Ear, Nose and Throat	5	33	2	2	4	3	
53	Master of Medicine in Emergency Medicine	8	13	6	1	7	5	3
54	Master of Medicine in General Surgery	10	71	15	1	16	1	5
							1	
55	Master of Medicine in Internal Medicine	8	31	12	3	15	6	5
56	Master of Medicine in Ophthalmology	5	24	5	2	7	4	4
57	Master of Medicine in Obstetrics/Gynaecology	15	98	19	6	25	1	11
							6	
58	Master of Medicine in Paediatrics & Child Health	6	40	7	17	24	1	6
							4	
59	Master of Medicine in Pathology	2	4	2	1	3	2	
60	Master of Medicine in Psychiatry	4	12	6	3	9	1	1
61	Master of Medicine in Radiology	5	11					
62	Master of Medical Laboratory Science	20	19	9	3	12	4	3
63	Master of Nursing Science in Community Midwifery and Reproductive Health		17	2	4	6	3	3
64	Master of Nursing Science in Critical Care Nursing	10	22	2	2	4	3	2
65	Master of Nursing Science in Mental Health Nursing		8	3	1	4	3	2

66	Master of Nursing Science in Paediatric Clinical Nursing	43	1	11	12	8	5
67	Master of Pharmacy in Clinical Pharmacy	6	11	4	1	5	3
68	Master of Science in Pharmaceutical Analysis	14	6	5	11	3	1
69	Master of Science in Pharmacognosy and Natural Medicine Science	5	1				
70	Master of Science in Anatomy	2	6	5	5	1	1
71	Master of Science in Biochemistry	4	10	5	1	6	1
72	Master of Science in Medical Microbiology	5	18	8	3	11	5
73	Master of Science in Pharmacology	4	7	5		5	5
74	Master of Science in Physiology	2	5	4	1	5	1
75	Master of Public Health	30	71	34	15	49	2
						2	15
76	Master of Public Health (Research Ethics)	6	3	1	4		
77	Doctor of Philosophy in Medicine	3	16	5	4	9	4
						4	4
Sub Total		170	658	178	94	272	1
						3	84
						5	
Faculty of Science							
78	Master of Education in Educational Administration and Planning	5	18	17	9	26	6
						3	
79	Master of Education in Educational Psychology	3	7	6	4	10	1
80	Master of Education in Curriculum, Instruction and Media Studies	3	9	2	4	6	1
81	Master of Science in Biology (Entomology, Pest and Vector Biology)	5	3				
82	Master of Science in Biology (Microbiology and Parasitology)	5	18	14	6	20	6
						2	2
83	Master of Science in Biology (Natural Resources, Ecology, Conservation and Management)	7	23	15	5	20	2
						1	
84	Master of Science in Chemistry	5	14	10	2	12	5
						2	
85	Master of Science in Mathematics	6	21	12	3	15	4
						3	
86	Master of Science in Physics	5	22	18	4	22	8
87	Doctor of Philosophy in Educational Administration and Planning	1	9	6	2	8	2
						1	
88	Doctor of Philosophy in Psychology	1	3	1	1	2	
89	Doctor of Philosophy in Curriculum and Media Studies	1	3	1	2	3	
90	Doctor of Philosophy in Biology	1	9	6	3	9	
91	Doctor of Philosophy in Chemistry	1					
92	Doctor of Philosophy in Mathematics	1	1				
93	Doctor of Philosophy in Physics	1	6	5	1	6	3
						1	1
Sub Total		51	166	113	46	159	3
						8	13
Postgraduate Total		283	1006	360	17	533	2
					3	1	111
						5	

Grand Total	1753	2774	111	40	152	6	423
			2	8	0	1	
						7	

3.7.6 Academic Policies

The following Examination Regulations for students were approved in December 2022 and to take effect in August 2023.

- Examination Management guidelines for staff
- Examination Irregularities
- Retention and Disposal of Examination Scripts
- Fees Policy

3.7.7 Smart Cards

The university uses the Academic Information Management Systems (AIMS). All the records of registered students have been captured but only a few have received the SMART CARDS due to financial constraints. There is also a challenge of maintenance of the ID printing equipment on a small budget.

3.7.8 Timetable

The teaching and end-of-semester time table were released a month before the scheduled activities. The challenge however was due to short semesters each 15 weeks as opposed to 17 weeks (due to COVID-19) mid-semester exams were temporarily removed so that the semester load can be covered.

One of the major challenges was the inadequate furniture especially noted during examination

periods. 40% of the furniture at the Town Campus is broken. It needs repair.

3.7.9 Examination Results

The Semester I and Semester II examinations results were published on time. Since the Senate sits three to four times a year, Faculties are allowed to publish provisional results pending Senate approval.

3.7.10 AIMS

The Academic Information Management System which was introduced in 2017 continues to be put to use. We are running on an old version, however. By July 2022, we were supposed to have a new version of AIMS but this has been delayed hence affecting a number of our academic processes.

3.7.11 Learning Management System (LMS)

When the government called for the opening of finalist students, lectures were Online using the Learning Management System (LMS). This system continued to be used even when the continuing students were called. It is the same system we encourage lecturers and students to continue using this academic year because it the way to go.

3.7.12 Graduation

The 29th graduation ceremony will be held on May 27, 2023. The number of graduates will be 1327 (Female 486 [36.6%]; Male 841 [63.4%]). Of those, 27 (Male 18[66.7%]; Female 9 [33.3%]) are to graduate with Doctors of Philosophy.

3.7.13 Convocation

Convocation activities continue to be held. The convocation has presented to Top Management prints for a new main gate at the town campus.

3.7.14 Marketing

MUST participated in the Higher Education Exhibition organized by National Council for Higher Education (NCHE). Out of over 50 participating Universities, MUST emerged as fifth best exhibitor in the category of Public and Private Chartered Universities. At MUST the AR office spearheaded the exhibition.

3.7.15 Quality Assurance Activities

The Quality Assurance Committee met four (4) times and reviewed curricula of the Faculty of Medicine and Faculty of Applied Sciences and Technology (See attached detailed list of accreditation). The major challenge continues to be funding for accreditation of programmes and lack of funds to train staff on curriculum development and review.

3.7.16 Affiliated Institutions

MUST continues to run its programmes at the following affiliated institutions.

- a) Uganda Institute of Allied Health and Management Sciences (UIAHMS)
- b) Jinja School of Nursing and Midwifery
- c) Butabika School of Psychiatric Nursing
- d) Uganda Technology and Management University (UTAMU)

3.7.18 Future Plans

- a) To procure a new vehicle.
- b) To procure brochures, leaflets/flyers and a prospectus with details of programmes offered at MUST.
- c) To digitalize paper records. To do this we shall need to acquire heavy Duty Scanner.
- d) To capture senate resolutions and disseminate this information
- e) To come up with student academic handbook detailing all the information a student needs from application, registration to alumni.

3.7.19 Accreditation Status of Programmes

According to the UOTIA 119A – Accreditation of Affiliated Institutions and their academic and professional programmes.

“For the avoidance of doubt, no person shall operate a University, other Degree Awarding Institution or a Tertiary Institution, without the prior accreditation of its academic and professional programmes by the National Council for Higher Education”

Table 20: Programmes Accreditation Status

	Name of Programme	Date of last accreditation as per NCHE records	Accreditation status as of May 2023	Date of Accreditation Expiry
	Faculty of Medicine			
1	Bachelor of Medicine and Bachelor of Surgery	December 19, 2016	Submitted to NCHE on January 14, 2022 awaiting re-accreditation	December 18, 2021
2	Bachelor of Nursing Science	December 13, 2019	Accredited December 13, 2019	December 12, 2024
3	Bachelor of Pharmacy	January 20, 2023	Accredited January 20, 2023	January 19, 2028
4	Bachelor of Science in Pharmaceutical Science	January 20, 2023	Accredited January 20, 2023	January 19, 2028
5	Bachelor of Science in Physiotherapy	November 30, 2018	Accredited November 30, 2018	November 29, 2023
6	Bachelor of Science in Physiotherapy (Completion)	November 30, 2018	Accredited November 30, 2018	November 29, 2023
7	Bachelor of Medical Laboratory Science (MLS)	January 20, 2023	Accredited January 20, 2023	January 19, 2028
8	Bachelor of Medical Laboratory Science (MLC)	January 20, 2023	Accredited January 20, 2023	January 19, 2028
9	Diploma in Community HIV/AIDS Care and Management	2013	Not yet re-accredited	2018 – Not admitted students to the programme

10	Bachelor of Nursing Science – Completion (MUST)	December 13, 2019	Accredited December 13, 2019	December 12, 2024
11	Bachelor of Nursing Science – Completion (JSNM)	December 13, 2019	Accredited December 13, 2019	December 12, 2024
12	Advanced Diploma in Child and Adolescent Mental Health	December 21, 2015	Submitted to NCHE on May 11, 2023, awaiting re-accreditation	December 20, 2020
13	Master of Medicine in Pediatrics and Child Health	December 19, 2016	Submitted to NCHE on April 13, 2022, awaiting re-accreditation	December 18, 2021
14	Diploma in Emergency Medicine for Emergency Care practitioners	December 19, 2016	Not yet re-accredited	December 18, 2021
15	Masters of Medicine in Internal Medicine	December 19, 2016	Submitted to NCHE on May 6, 2022, awaiting re-accreditation	December 18, 2021
16	Masters of Medicine in Obstetrics and Gynaecology	December 19, 2016	Submitted to NCHE on April 13, 2022, awaiting re-accreditation	December 18, 2021
17	Master of Medicine in General Surgery	December 19, 2016	Submitted to NCHE on May 6, 2022, awaiting re-accreditation	December 18, 2021
18	Master of Medicine in Anaesthesiology and Critical Care	December 19, 2016	Submitted to NCHE on May 6, 2022, awaiting re-accreditation	December 18, 2021

19	Master of Medicine in Community Practice and Family Medicine	December 19, 2016	Submitted to NCHE on January 14, 2022, awaiting re-accreditation	December 18, 2021
20	Master of Medicine Radiology	December 19, 2016	Not yet re-accredited	December 18, 2021
21	Master of Medicine in Otolaryngology	December 19, 2016	Submitted to NCHE on January 14, 2022, awaiting re-accreditation	December 18, 2021
22	Master of Medicine in Dermatology	December 19, 2016	Submitted to NCHE on April 13, 2022, awaiting re-accreditation	December 18, 2021
23	Master of Medicine in Pathology	December 19, 2016	Submitted to NCHE on April 13, 2022, awaiting re-accreditation	December 18, 2021
24	Master of Medicine in Plastic & Reconstructive Surgery	July 2011	Not yet re-accredited	July 2016 - Not admitted students to the programme
25	Master of Medicine in Ophthalmology	December 19, 2016	Submitted to NCHE on May 6, 2022, awaiting re-accreditation	December 18, 2021
26	Master of Medicine in Psychiatry	June 23, 2014	Submitted to NCHE on March 9, 2020, awaiting re-accreditation	June 22, 2019
27	Master of Public Health (MPH)	August 23, 2019	Accredited August 23, 2019	August 22, 2024

28	Master of Medical Laboratory Science	December 13, 2021	Accredited December 13, 2021	December 12, 2026
29	Master of Science in Anatomy	December 19, 2016	Submitted to NCHE on July 22, 2021, awaiting re-accreditation	December 18, 2021
30	Master of Science in Medical Microbiology	December 19, 2016	Submitted to NCHE on January 14, 2022, awaiting re-accreditation	December 18, 2021
31	Master of Science in Pharmacology	January 20, 2023	Accredited January 20, 2023	January 19, 2028
32	Master of Science in Biochemistry	December 19, 2016	Submitted to NCHE on January 14, 2022, awaiting re-accreditation	December 18, 2021
33	Master of Science in Physiology	December 19, 2016	Submitted to NCHE on April 13, 2022, awaiting re-accreditation	December 18, 2021
34	Master of Nursing Science	December 13, 2021	Accredited December 13, 2021	Accredited December 12, 2026
35	Master of Medicine in Emergency Medicine	December 19, 2016	Submitted to NCHE on May 6, 2022, awaiting re-accreditation	December 18, 2021
36	Master of Science in Pharmacognosy and Natural Medicine Science	August 27, 2018	Accredited August 27, 2018	August 26, 2023

37	Master of Pharmacy (Clinical Pharmacy)	August 27, 2018	Accredited August 27, 2018	August 26, 2023
38	Master of Science in Pharmaceutical Analysis	December 13, 2021	Accredited December 13, 2021	December 12, 2026
39	PhD (All Programmes)	March 26, 2010	Submitted to NCHE March 11, 2019, awaiting re-accreditation	
Accredited		16		
Submitted for re-accreditation		19		
Not accredited		4		
Faculty of Business and Management Science				
40	Bachelor of Business Administration	August 23, 2019	Accredited August 23, 2019	August 22, 2024
41	Bachelor of Science in Accounting & Finance	June 7, 2019	Accredited June 7, 2019	June 8, 2024
42	Master of Business Administration	August 23, 2019	Accredited August 23, 2019	August 22, 2024
43	Bachelor of Science in Procurement & Supply Chain Management	December 14, 2020	Accredited December 14, 2020	December 13, 2025
44	Bachelor of Science in Economics	February 20, 2018	Submitted to NCHE on May 11, 2023, awaiting re-accreditation	February 19, 2023
45	PhD in Business Administration	December 13, 2019	Accredited December 13, 2019	December 12, 2029

Accredited		5		
Submitted for re- accreditation		1		
Faculty of Interdisciplinary Studies				
46	Bachelor of Science in Gender & Applied Women Health	June 29, 2020	Accredited June 29, 2020	June 28, 2025
47	Bachelor of Science in Planning & Community Development	June 29, 2020	Accredited June 29, 2020	June 28, 2025
48	Bachelor of Science in Agriculture and Livelihoods	June 29, 2020	Accredited June 29, 2020	June 28, 2025
49	Post Graduate Diploma in Criminology	June 29, 2020	Accredited June 29, 2020	June 28, 2025
50	Post Graduate Diploma in Development Studies	June 24, 2011	Not yet re-accredited	June 23, 2016 (Not admitted students to the programme)
51	Master of Arts in Development Studies	August 23,2019	Accredited August 23, 2019	August 22, 2024
52	Master of Arts in Planning and Governance	August 23, 2019	Accredited August 23, 2019	August 22, 2024
53	Master of Arts in Peace and Conflict Studies	June 29, 2020	Accredited June 29, 2020	June 28, 2025
54	PhD in Development Studies	June 29, 2020	Accredited June 29, 2020	June 28, 2030
	Accredited	8		
	Not accredited	1		
Faculty of Computing and Informatics				

55	Bachelor of Science Computer Science	June 29, 2020	Accredited June 29, 2020	June 28, 2025
56	Bachelor of Information Technology	June 29, 2020	Accredited June 29, 2020	June 28, 2025
57	Master of Science in Information Systems	August 23, 2019	Accredited August 23, 2019	August 22, 2024
58	Master of Science in Health Information Systems	March 1, 2021	Accredited March 1, 2021	March 29, 2026
59	Bachelor of Science in Software Engineering	August 27, 2018	Accredited August 27, 2018	August 26, 2023
60	Master of Business Informatics	August 27, 2018	Accredited August 27, 2018	August 26, 2023
61	Postgraduate diploma in Business Informatics	August 27, 2018	Accredited August 27, 2018	August 26, 2023
62	Postgraduate diploma in Information Systems	August 27, 2018	Accredited August 27, 2018	August 26, 2023
63	Postgraduate diploma in Health Information Technology	August 27, 2018	Accredited August 27, 2018	August 26, 2023
64	PhD in Computing by Research	December 13, 2019	Accredited December 13, 2019	December 12, 2029
	Accredited	10		
Faculty of Applied Sciences & Technology				
65	Bachelor of Biomedical Engineering	January 20, 2023	Accredited January 20, 2023	January 19, 2028

66	Bachelor of Engineering in Electrical and Electronic Engineering	August 29, 2016	Submitted to NCHE on August 17, 2021, awaiting re-accreditation	August 28, 2021
67	Bachelor of Petroleum Engineering and Environmental Management	January 20, 2023	Accredited January 20, 2023	January 19, 2028
68	Bachelor of science in Computer Engineering	June 29, 2020	Accredited June 29, 2020	June 28, 2025
69	Bachelor of Science in Mechanical and Industrial Engineering	December 13, 2021	Accredited December 13, 2021	December 12, 2026
70	Bachelor of Science in Civil Engineering	December 13, 2021	Accredited December 13, 2021	December 12, 2026
71	Master of Science in Biomedical Engineering	January 20, 2023	Accredited January 20, 2023	January 19, 2028
72	PhD in Biomedical Engineering	December 13, 2021	Accredited December 13, 2021	December 12, 2031
	Accredited	7		
	Submitted for re-accreditation	1		
Faculty of Science				
73	Bachelor of Science with Education	June 1, 2021	Accredited June 1, 2021	May 31, 2026
74	Diploma in Science Laboratory Technology	December 14, 2020	Accredited December 14, 2020	December 13, 2025

75	Higher Education Certificate – Chemistry and Mathematics	June 29, 2020	Accredited June 29, 2020	June 28, 2025
76	Higher Education Certificate – Physics and Mathematics	June 29, 2020	Accredited June 29, 2020	June 28, 2025
77	Higher Education Certificate – Chemistry and Biology	June 29, 2020	Accredited June 29, 2020	June 28, 2025
78	Master of Education in Educational Psychology	June 1, 2021	Accredited June 1, 2021	May 31, 2026
79	Master of Education in Educational Administration and Planning	June 1, 2021	Accredited June 1, 2021	May 31, 2026
80	Master of Education in Curriculum Instruction and Media Studies	June 1, 2021	Accredited June 1, 2021	May 31, 2026
81	Master of Science in Biology (Natural Resources, Ecology, Conservation and Management)	June 1, 2021	Accredited June 1, 2021	May 31, 2026
82	Master of Science in Biology (Entomology, Pest and Vector Biology)	June 1, 2021	Accredited June 1, 2021	May 31, 2026
83	Master of Science in Biology (Microbiology and Parasitology)	June 1, 2021	Accredited June 1, 2021	May 31, 2026
84	Master of Science in Chemistry	June 1, 2021	Accredited June 1, 2021	May 31, 2026
85	Master of Science in Physics	June 1, 2021	Accredited June 1, 2021	May 31, 2026

86	Master of Science in Mathematics	June 1, 2021	Accredited June 1, 2021	May 31, 2026
87	PhD in Mathematics	June 1, 2021	Accredited June 1, 2021	May 31, 2031
88	PhD in Educational Administration and Planning	June 1, 2021	Accredited June 1, 2021	May 31, 2031
89	PhD in Psychology	June 1, 2021	Accredited June 1, 2021	May 31, 2031
90	PhD in Curriculum and Media Studies	June 1, 2021	Accredited June,1 2021	May 31, 2031
91	PhD in Biology	December 13, 2021	Accredited December 13, 2021	December 12, 2031
92	PhD in Chemistry	June 1, 2021	Accredited June 1, 2021	May 31, 2031
93	PhD in Physics	June 1, 2021	Accredited June 1, 2021	May 31, 2031
	Accredited	21		

Summary

1	No. of accredited programmes	67
2	No. of programmes submitted for re-accreditation	21
3	No. of programmes not accredited	5

3.7.21 Programmes not Re-accredited are not Admitting Students

Some are from affiliated institutions and others are phased out.

1	Diploma in Community HIV/AIDS Care and Management	2013	Not re-accredited	Students are not being admitted. The programme was offered in collaboration with Mildmay. MoU expired
2	Diploma in Emergency Medicine for Emergency Care practitioners	December 19, 2016	Not re-accredited	Students are not being admitted. The programme offered in collaboration with Masaka Regional Referral Hospital. The Department requested that programme be put on hold.
3	Master of Medicine Radiology	December 19, 2016	Not re-accredited	No admissions. Faculty is reviewing the programme
4	Master of Medicine in Plastic & Reconstructive Surgery	July 2011	Not re-accredited	Students are not being admitted. The programme offered in collaboration with CoRSu. MoU with CoRSu expired.
5	Post Graduate Diploma in Development Studies	June 24, 2011	Not re-accredited	Programme phased out.

3.7.20 Accreditation Status for Affiliated Institutions

Institution	Programme Offered	Status with NCHE
Uganda Institute of Allied Health & Management Sciences, Mulago	Bachelor of Medical Laboratory Science	All Institutions are accredited by NCHE but NCHE is yet to approve the MoUS between MUST and the affiliated Institutions
Jinja School of Nursing and Midwifery	Bachelor of Nursing Science	
Butabika School of Psychiatric Nursing	Advanced Diploma in child and adolescent mental health	
Uganda Technology and Management University	PhD programmes	
Masaka Regional Referral Hospital	Diploma in Emergency Medicine for Emergency Care practitioners	

3.8 Estates and Works Department

3.8.1 Infrastructure Development and Maintenance

For the Year just concluded, MUST has achieved some tangible outputs in the area of construction of new infrastructure and maintenance of existing ones due to inadequate funding.

3.8.2 Kihumuro Campus

3.8.2.1 Faculty of Computing and Informatics (FCI)

The University was able to complete phase 1 of the Proposed Faculty of Computing and Informatics at Kihumuro. After completion of the first phase of the proposed Faculty of Computing & Informatics at Kihumuro in order to provide adequate teaching space for both students and staff and to decongest the town campus where the Faculty is surviving through sharing space in other Faculties and Departments, the University has undertaken the second phase which commenced on November 26, 2020 worth 8.3bn UGX.

A deliberate effort has been put in place by the University to procure additional furniture to address the increase in enrolment and the wear and tear, but with much emphasis on furnishing the new Faculty of Applied Sciences and Technology teaching space. For this reason, 100 units of furniture are budgeted for every year.

3.8.2.2 Construction of a Bituminised Dual Carriage Access road

The University was able to construct to bitumen standard 0.120km of dual carriage entrance and exit roads. The road wearing coarse was finished with double bituminous surface treatment seal.

3.8.2.3 Renovation of Old infrastructure

The University was able to undertake the renovation of Rugazi Students' Hostel in Rubirizi District to completion and the works were handed over to the university in June 2020.

3.9 Greening Public Sector Procurement – MUST Experience

Uganda has put in place an elaborate system of institutions, laws and regulations to ensure the prudent use of public resources. Public sector procurement is at the centre of the way public money is spent and hence plays a pivotal role in a country's public financial management system. Its importance is derived from its role as a vehicle by which typically 55% of the budget implementation is managed in the country. Budgets get translated into goods and services in a large part through the workings of the public sector procurement systems.

In the same spirit, the University refocused its public procurement activities to ensure protection of the people and planet through purchase of goods and services that cause minimal adverse effects to the environment. The procurement of University vehicles specifically the University Bus has for example been in strict adherence

to Euro II emission standard which compelled car manufacturers to reduce the combined limit for unburnt hydrocarbons and oxides for both petrol and diesel vehicles. The contract for collection and disposal of garbage ensures the separation of garbage into categories like plastic, paper, glass and polythene to ensure responsible disposal of each category in their right place using the right methods. Ground maintenance contracts ensure protection of all existing tree species, replacement and planting of young ones in all open spaces under the contractors' care.

The University still relies on heavy usage of paper, which encourages the cutting of trees to manufacture paper and its product. However, the Institution is equally putting effort in procurement of ICT aided systems to encourage online learning hence reducing heavy usage of paper products.

3.10 Dean of Students Department

3.10.1 Introduction

The Dean of Students Department is responsible for the welfare of students. It acts as a linkage for all students' affairs and ensures the well-being of students for their entire stay at MUST. It oversees the university clinic, students' guild, students' associations, orients first years into the university environment, supports students with special needs when the need arises, provides counseling, handles sports activities, students' accommodation, acts as a mediator between administration and students, settles disputes among students with students, students with the community and students with staff; among others.

3.10.2 Disability and Special Needs Unit

What's on the Ground?

- a) Approved policy and guidelines (June 2019)
- b) A focal person in place
- c) Facilitation of UGX 200,000 is given to students with special needs on Government scholarship

- d) Addressing students needs as they come up in the DOS office through collaborations with other institutions and agencies
- e) Reasonable accommodation i.e. ramps are constructed.
- f) There is a budget under cross cutting issues
- g) Work plan available for execution
- h) Guild representative councilor for people living with disabilities
- i) PWDs representative on MUST council

3.10.3 Types of Disabilities

- a) Physical (paralyzed, amputees etc.)
- b) Sensory (vision impairment and hearing loss)
- c) Intellectual (learning difficulties)
- d) Mental health (emotional, mental illness, autism etc.)
- e) Developmental (spinal bifida)
- f) Non visible (diabetes, asthma, epilepsy)
- g) Those limited on how much they can do due to (morbidity, cancer, AIDS)

3.10.4 Disability Status at MUST

There are 29 registered students and 6 staff with disabilities as listed below:

	Name	Registration no	Type of disability	Gender
1.	Nabyama James	2020/PHA/006	Deformity of both limbs	M
2.	Abaasa Michael	2020/MBR/121	Low vision	M
3.	Namale Blessed Shadia	2020/MBR/122	Loss of one eye due to Tumors/Asthma	F
4.	Kigundu Joseph	2019/MBR/043	Blind in the right eye	M
5.	Ssenabulya Ukashar	2020/PHA/001	Physical wheel chair	M
6.	Mugasha Blaire Blandley	2019/BIT/069/PS	Physical disability(Scoliosis)	M
7.	Kanamugre Patricia	2019/BPD/021/PS	Locomotor Disability	F
8.	Akampurira Doreen	2019/BAF/176/PS	Muscular dystrophy	F
9.	Asiimwe Derrick	2019/BPSM/045/PS	Blindness	M
10.	Muhangi Kadiri	2019/BBA/066/PS	Blindness in one eye	M
11.	Ononge Shem	2017/BME/051/PS	Bipolar Disorder	M
12.	Bigilwa Alex	2020/BS/102	Locomotion	M
13.	Kwagala Keith Richard	2019/BME/043/PS	Broken left arm	M
14.	Kasoga Hallima	2019/BSAL/016/PS	Low hearing	F
15.	Edema Cosmas	2020/EEE/035/PS	Physical Disability	M
16.	Katerega Ibrahim	2018/BNS/030/PS	Dellusion, Bipolar,	M
17.	Amutuhair Treasure A.	2018/PHA/089/PS	Poly arthritis	F
18.	Nyesiga Ian	2019/PEM/080/PS	Low vision	M
19.	Baluku Martin	2019/MBR/006	Bipolar effective	M
20.	Ssempeera	2021/PHA/007	Vision impairment	M
21.	Bisaso Ismail	2021/MBR/121	Locomotion	M
22.	Kawooya Abdullah	2021/BNS/007	Albinism and Low vision	M
23.	Muhindo Edith	2021/PHA/097/PS	Locomotion Dwarfism and vision impairment.	F
24.	Mukisa Brian	2021/BS/054	Vision impairment	M
25.	Kaija Denis	2017/MBR/010	Bipolar Affective Disorder	M
26.	Nangobi Joyce	2020/BS/067	Short sightedness/vision	F
27.	Kakaire Shaffic	2020/EEE/043/PS	Double Vision	M
28.	Bakashaba Ruhanga Joel	2020/BPSM/045/PS	MSCHZEPHRONIA	M
29.	Bwambale Melvin	2020/PHA/030/PS	Mental illness	M
	Name of Staff	Department	Type of disability	Gender
1.	Stella Dusabe Byarugaba	Dean of Students	Locomotor	F
2.	Kakuru Charles	Estates and Works	Blind in one eye	M
3.	Andama Geoffrey	Physics	Paralysed and low vision	M
4.	Nsimire Maclean	Dean of Students	Locomotor	F
5.	Ntaro Moses	Community Health	Small left eye	M
6.	Ruth Nantongo	Microbiology	Partial hearing	F

3.10.5 Current Challenges

- a) Lack of awareness about the plight of PWDS
- b) (targeted, continuous and systematic awareness on the inclusion campaign and strategies)
- c) Poor profile-raising of PWDS excellence at MUST
- d) Failure to make use of innovative technologies and approaches in awareness raising campaign strategies and disseminating good practices.
- e) Lack of involvement of PWDS in planning and budgeting, implementation and monitoring issues concerned with disabilities (Insufficient use of PWDS potential)
- f) Lack of fully fledged office equipped and staffed for disability issues.
- g) Budget constraints to execute work plans in place

3.10.6 Implementation Gaps

- a) Lack of proper follow-up on policy guidelines into practice
- b) Lack of sufficient resources/suffer budget cuts
- c) Lack of skilled personnel
- d) Lack of appropriate learning aids for students
 - a) Poor accessibility to learning/working and accommodation facilities (not user-friendly)
 - b) Understaffing

3.10.7 Myth about Disabilities

- a) There aren't many people with disabilities, so its not really an issue
- b) Disability is a health issue
- c) Persons with disability are unable to meet performance standards thereby making them an employment risk
- d) Accessibility facilities that only benefits PWDS

3.10.8 Barriers based on Disability

- a) Inadequate uptake of policies Special Needs/PWDS
- b) Negative attitudes - people have low expectation on PWDS
- c) Lack of provision of services and problem with service delivery.
- d) Inadequate funding and resources allocated for implementing policies and plans are not enough
- e) Limited accessibility to some facilities especially the old structures.
- f) Lack of consultation and involvement in decision making in matters directly affecting their lives
- g) Lack of data and evidence on successful career stories
- h) Fears of degenerating illness and time off.
- i) Lack of information on job opportunity.
- j) Reluctance of individual to register as having a disability

- k) Inadequate technical/personal support

3.10.9 Strategies and objectives

- a) Expand the Disability and Special Needs office and provide further equipment.
- b) Set up money generating activities
- c) Recruit helpers / personal assistants on temporary terms
- d) Continuous sensitization to combat discrimination against PWDs
- e) Hold meetings and workshops with other institutions to exchange and share experiences and best practices linked to awareness rising.
- f) To equip the unit with PWDs information, materials and gadgets
- g) To adapt to creative use of Technology in favor of PWDs
- h) To collaborate with local and international organizations and agencies to improve the living standards of PWDs at MUST
- i) To train or recruit sign language interpreters.

3.10.10 Action needed

- a) There should be continuous sensitization to staff, students

and the community to create awareness of Special needs and PWDs issues to curb social intolerance and stigma directed at PWDs, starting with special needs Technical team, Top management and Dean of Students office staff and care givers

- b) To create a resource room for equipment and reading materials necessary for the PDWs.
- c) To create a Wellness centre for both students, staff and community in Kihumuro
- d) Activities for PWDs to include but not limited to sports, open day, international day of PWDs.
- e) Revision of facilitation given to special needs people from UGX 200,000 to UGX 500,000 and include private students also
- f) The Technical team to assess and recommend recruitment of necessary personnel required for assisting Special needs and PWDs on temporarily terms i.e. guides, care givers, helpers, interpreters' as need arises and to set their payments as the budget can allow.

3.10.11 Activities done

Period	Type of Activity	Out Put	Cost
From beginning of semester and still ongoing	Orientation	Printed advocacy material and distributed to freshers', registration of new members of staff and student online information.	Used DoS office stationery
January 26, 2022	Held a meeting with Disability and SN at MUST to know each other and to devise means of sensitization of the Policy	9 members attended and were given policy booklets and guiding principles. Minutes taken, refreshments served	UGX 10,000
February 1, 2022	Initiated a request to improve walkways from biochemistry lab to pharmacy. Pharmaceutical lab to gents flat	No work done yet	
February 1, 2022	Facilitation to gov't sponsored students	Paid facilitation allowance	UGX 1,600,000
09/02/2022	Visited Tukore invalids salvation stream Association (TISSA) as a way of networking with	Got contacts of the directors. TISSA Facilitated 5 students in Accenture training each UGX 60,000 They also organized a workshop for mentorship about job creation where our GRC for PWDS was facilitated with refreshments, lunch and transport at UGX 30,000 Certificates were awarded for the trainees.	UGX 630,000
18/02/2022	Visited Hope Inclusive Development Centre in Bubaare 11 Bwenshanku Bubaare sub county together with GRC for PWDS MUST.	Given the Director MUST PWDS policy booklet as a way of creating policy awareness to the community	Dean of Students provided a vehicle, fuel and the driver.

	We managed to mobilize support of UGX 100,000 and we are still mobilizing from well-wishers.		
17/05/2022	Attended a workshop on Basic skills in counseling at the University Inn organized by Counseling unit Dean of Students office.	Acquired skills on counseling for the benefit of my office	
24/05/2022	Applied for a wheel chair for Ukashur from Kyambogo University special needs faculty	To equip the department with a wheel chair for our special needs student	Donation
31/05/2022	Attended Stake holders exit meeting of inclusion works project by TISSA at Lake View	Shared experiences, net worked with organisation that work with pwds globally	Transport refund of UGX 30,000
June 3, 2022	Attended virtual African quality rating mechanism(AGRM) meeting arranged by Association of African Universities(AAU)	To get information on how to uplift our quality assurance at MUST	
9/06/2022	Attended a virtual launch of the establishment of the office of the AAU ambassador for higher education for west Africa organized by AAU		
	Initiated appointment of a council member from National Union of Disabilities in Uganda in November 2021 and is now recruited (Mr ambrose Murangira)	For better deliberations on council for the plight of people living with Disabilities	Appointed by US office.

21/06/2022	Had a meeting with National council of people living with Disability and staff from Dean of Students and people living with disabilities at MUST.	8 members attended and we were advised on sustainable strategies to boost pwds office. Recommended to us a member to appoint on Technical team at MUST of people living with disabilities that is Bogere Richard contact 0788447057 to replace The Late John Besiga.	Refreshment UGX 10,000 from Dean of Students office
22-24th 2022	Attended a retreat and council meeting at Ankole resort and Spa Ntungamo	Gained alot of information and learnt a lot for the institution to continue aligning activities with the institutions strategic vision, mission, and goals Bonding and extra curricular activities blessed the retreat	University Secretary's office funded all.
28/6/2022	Held a training for people living with disabilities at MUST	Deans, Administrators and Heads of departments, DoS department and AR Department were trained on how to handle and treat PWDs at MUST	UGX 3,500,000 from crosscutting issues was used
June 30, 2022	One of our students was sponsored by TISSA for a workshop in Imperial Royale	Connections and to advocate for an inclusive environment	Facilitation UGX 370,000
July 21-22 2022	Attended a council meeting for students welfare and disciplinary	Made resolutions for council approval	US office organised
July 28th 2022	Held a meeting with 11 PWDs and formed an association.	Getting together for a common goal to advocate for PWDS rights	UGX 15,000 for refreshments by Dean of Student's office.
July 29, 2022	Attended Council meeting	We made resolutions for council approval	

August 2022	Requested and followed up facilitation for PWDs	facilitation for 7 government sponsored students was paid to them	UGX 1,400,000
25/08/2022	Attended a C-PAC dissemination conference	Received information how to deal with youth challenges	Online attendance
5/09/2022	Attended a Disability convention online	PWDs were encouraged to front their skills and talents rather than their disability	Online attendance
22/09/2022	Two members of MUST disability association had an orientation on GBV and the safety of deaf women and girls at Lake view Hotel	Two members were sensitized to go and advocate for their fellow deaf members at MUST and the communities they live in	ADD funded transport of UGX 50,000 each lunch and refreshments
23/09/2022	Attended a meeting of council where advocacy for PWDs was done by ADD International	Council members were addressed and were advised to conduct research on disability issues	
27/09/2022	Attended NSSF annual general meeting	Gave feedback through the survey	
29/09/2022	Held a meeting with PWDs association members	Made articles of association and elected executive members	UGX 13,000 refreshments funded by dean of students
5/10/2022	We lost one of our members and one representative went for burial	Contributions and condolence message was sent to the bereaved family	Members of PWDs MUST contributed UGX 100,000. University transported mourners
11/10/2022	Had a meeting EOC officers when they were tracking GIC commitments	Gave them necessary documents	
3/11/2022	Had a meeting to review a PWDs proposal for funding	Agreed to work with OURS Ruharo and TISSA	

for community involvement.			
8/11/2022	Visited Kakika community development officer and LCI Chair person for medical cell in the process of registering MUST PWDs Association which is in its initial stages		DOS provided a vehicle and fuel
14/11/2022	Visited Ruharo mission hospital	Had a meeting to work together on a proposal to enhance betterment of PWDs in higher institutions of learning in Western Uganda	DoS provided a vehicle and a driver
18/11/2022	Got certificate of registration of MUST PWDs association as a community based organisation operating in Mbarara City Kamukuzi Ward	Recognition by the city division	DoS provided a car driver and fuel
3/12/2022	Celebrated international day for pwds on EYIT TV	Hosted Education Officer in charge of PWDs Mbarara district. Got 85 views as per today who was sensitizing and advocating for PWDs in higher institutions of learning.	DoS

Community engagements and council activities



Training of caregivers of PWDs



Different types of disabilities exist over the world



MOTOR



VISUAL



PSYCHOLOGICAL



HEARING



COGNITIVE



CHRONIC

Source: France, Agefiph, 2007.

4. Faculty of Medicine



4.1 Introduction

The year 2022, the Faculty has been characterized with individual and collective successes, pride and deliberative, planned work followed by continued efforts to face the enormous challenges brought about by COVID-19 pandemic.

4.2 Student and Faculty Leadership Development

MUST Faculty of Medicine held a Highly Successful Leadership Training for Heads of Departments, Committee Chairpersons and Vice Chairpersons.

The Faculty of Medicine hosted Professor Patrick Kyamanywa as a keynote speaker at the inaugural and historic leadership training workshop

for the faculty leadership held on July 20, 2022 at the University Inn. The training was organized for heads of departments and chairpersons and vice chairpersons of Faculty Committees. The leadership training was organized by the Faculty of Medicine after identifying a need for a tailored leadership training program to re-align all unit heads towards a collective vision of the faculty and the university as a whole.



Participants at the Faculty of Medicine Leadership Training for Heads of Departments and Chairpersons of Faculty Committees during the workshop held at the University Inn.

The Vice Chancellor of MUST, Professor Celestino Obua, presided over the opening ceremony of the one-day training event. In his extensive remarks, Prof. Obua emphasized that the University Top Management is committed to supporting the Faculty to develop and offer even better services in training, clinical care, research, innovations and community engagement. He noted the limited funds available to adequately cater for all the Faculty's needs. He called upon staff to remain patient and committed and to write and win more grants. He advised those writing grants to always include capital development (equipment) in their budgets so as to improve on the facilities available for the Faculty of Medicine.

The Executive Director Mbarara Regional Referral Hospital and the Hospital, Dr Celestine Barigye,

attended the opening ceremony online. In his remarks, he reiterated the need for continuous collaboration between the hospital and University in order to reinforce our synergies for quality patient care, training of future health workers and specialists, and innovative research to address current challenges. He further expressed the hospital's commitment to provide a conducive environment for clinical services, training and research. The Dean of the Faculty of Medicine, Dr Joseph Ngonzi gave a recap of the University's vision, mission, philosophy and core values. He emphasized that these are the very things that should be at the back of everyone's mind if we as a Faculty and University are to achieve our collective vision for the Medical school in particular and University at large.

On his part, the keynote speaker, Prof Kyamanywa, gave a compelling and thoughtful presentation titled, *“How do we practice inclusive leadership to utilize team strengths, cover up team weaknesses, realize team vision*

from individual visions and align with institutional vision?” The presentation was well received by the participants who requested for more similar leadership trainings in the future.



MUST VC, Prof. Celestino Obua Key Note Speaker, Prof. Patrick Kyamanywa The Dean Dr. Joseph Ngonzi

4.3 MUST Faculty of Medicine Leadership Meets Student Leaders

On July 14, 2022 the Dean and Deputy Dean met with student leaders in the Faculty of Medicine to understand the current needs of the students and to share ideas on how the faculty can improve service delivery in our training. The meeting was attended by class presidents of all the undergraduate programs in the

faculty (Medicine, Pharmacy, Nursing, Medical Laboratory Science, Physiotherapy and Pharmaceutical Sciences). In addition, the Class President of Critical Care Nursing, a Master’s program, was also in attendance. Also invited were the presidents of the respective program associations (MBR, PHA, PHS, BPS, MLS and BNS) and the representatives to the Students’ Guild.



Students' leaders and the Faculty of Medicine leadership after the meeting

Among the issues raised were: Need to report any students with special needs to the Faculty early enough for proper support; release of marks to students in time for nursing students (BNS 4, one pending course unit in BNS 3 and all BNC classes); the need to report any inconsistencies in marks (e.g. missing marks, unexpected marks, etc.) by the affected students for proper investigations and rectification; the need for more projectors and which are of good quality; the need for airtime (if available) from the faculty to coordinate the classes properly. The Faculty leadership commended the student leaders for the great work they are doing and reiterated their support to them. The faculty will endeavor to provide them with data/airtime whenever the budget allows. The doors to the Dean,

Deputy Dean and Administrator will remain open to any student leader who has an issue to report to the faculty. All leaders will get faculty recognition in form of a special certificate upon completion of their respective terms of office.

4.4 Top Management and University Council engagement with the Faculty

The Faculty of Medicine was privileged to host members of the MUST Top Management led by the Chairperson and Vice Chancellor, Professor Celestino Obua, who visited the Faculty for a tour of facilities and infrastructure for teaching, clinical care, research and community engagement. The visit took place on July 26, 2022 at the Town Campus. The inaugural visit to

the Faculty by Top Management was precipitated by the faculty's request and a report from the Uganda Medical and Dental Practitioners Council (UMDPC) following their visit to the Faculty on May 26, 2022. The UMDPC report had observed that there were no appropriate labs for physiology, microbiology and biochemistry, and recommended that the university should put these facilities in place within a period of 6 months from the date of the report. All the departments and facilities were visited. The tour concluded with a debriefing in the Pathology Laboratory.

The critical challenges identified included the following: Limited office space, limited teaching space, dilapidated offices with offices having mounds of

anthills, broken and falling doors to lavatories, broken sinks, poor maintenance of rooms, including missing bulbs, window glasses, torn curtains, falling off roof, leaking roof etc.

Some of the identified remedies suggested included: Continuous advocacy, lobbying and engagement of government for a new home for the faculty; demand for the Faculty's share of the indirect costs from grants/projects under the Grants Office; encourage grant writers to include capital developments in their budgets; be innovative and get the best out of what is available in the meantime; do some maintenance works and repairs to avoid possible imminent closure by the EA Medical Council when they visit in September, 2022.



4.5 University Council Tour FoM Facilities - August 5, 2022

This meeting followed the visit of Top Management to the Faculty of Medicine. The team visited different departments/offices in the Faculty of Medicine. The debriefing meeting took place in the Pathology laboratory and it included the Council members, Hospital Director

and his team and the Dean Faculty of Medicine and some staff from the Faculty. The Dean of Faculty of Medicine opened the discussion by welcoming the Chair of the University Council and his team, the Director MRRH and his team and fellow lecturers and other workers in the FOM. He informed the visitors that there was a recent inspection by the Uganda Medical and Dental

Practitioners Council (UMDPC) and they had scored the Faculty at 69.5% which is not good. This was due to the fact that the Faculty lacks laboratories for core courses like Physiology, Anatomy, Microbiology and Biochemistry. The University was given six months to work on those defects. The Faculty has no home after the existence for more than three decades and this has hindered the performance of staff who are passionate to teach and do clinical work. The issue of infrastructure has affected the performance. The staff are also not well motivated especially on promotion, not forgetting that there is understaffing in most departments.

The Chair of the University Council, Dr. Warren Naamara, thanked everyone that had aired their views, thanked both MUST and MRRH staff and reminded them of the inadequate funding from the government, that government doesn't have enough money perform all its needs and MUST is no exception. That the issue of promotion is well known by the council and it's not that any one doesn't want to promote staff but funds can't allow as of now.

However, people should be patient and continue filling their appraisal forms. Regarding the EAMDPC, it's unfortunate but considering the way things are, even if they don't recommend closure, they can easily blacklist our institution and this would affect our products within the region and even beyond.

4.6 FoM at the National Pathogen Economy Symposium

National Pathogen Economy Symposium: The Deputy Dean Faculty of Medicine, Dr. JonansTusiimire, participated in a two-day symposium on the National Pathogen Economy held under the theme: “*Structuring the R&D Ecosystem of the Pathogen Economy: Opportunities for National Socio-Economic Transformation*” on May 12-13, 2022 at Imperial Royale Hotel. The overall goal of the symposium was to conduct data-driven analysis of Uganda's Pathogen Economy towards addressing bottlenecks to industrialization.

Specifically, the symposium was intended to: review the current R&D system and structures; to identify strengths, gaps, threats, and opportunities relevant to industrialization of the Pathogen Economy value chain; to learn from R&D models that other countries are using for industrialization; to lay a foundation for the national R&D system that addresses identified gaps. During the symposium, Dr. JonansTusiimire represented MUST in a panel discussion as a key stakeholder in Uganda's industrial value chain particularly in the training of scientists and development of therapeutic agents. Academic institutions as research entities were clearly recognized as important players in the entire value chain of drug development to ensure quality of products.

The panel discussion focused on: “*Missed training opportunities for the Pathogen Economy: A call to action for higher institutions of learning*”. A number of recommendations were proposed, including: Talent identification and retention in higher education institutions; increased opportunities for specializations in training and research; mindset change with less pure negativity but more positive

criticisms to provide a more supportive environment for researchers; continuous funding to build institutional capacity for quality research; providing enough time for the researchers to develop robust and quality solutions rather than demanding quick results unjustifiably; and building research ecosystems for mentorship and mutual collaborations.



Delegates at the National Pathogen Economy Symposium held from May 12-13, 2022 at Imperial Royale Hotel. MUST was represented by Dr. JonansTusiimire (FoM), Mr Jimmy Angupale (PharmBiotrac), and Dr Clement AjayiOlusoji (PharmBiotrac)

The Imaginal Workshop

As a follow-up activity to the National Pathogen Economy symposium, the Deputy Dean was also invited by the Minister for Science, Technology and Innovations in the Office of the President (STI-OP) to participate in a 3-day imaginal forecasting workshop to design, engineer, and build a forecast for Uganda’s Pathogen Economy. This imaginal workshop was held from May 23 to 25, 2022 at Hotel Africana. The workshop was organized by STI-OP while technical support was from CASTLE. Prof. Thomas R. Rudmik, the founder of Master’s Academy and College, an award-winning K-12 school in Calgary,

Canada, and the Profound Learning Institute, and author of “Becoming Imaginal” was the main facilitator.



Some of the Participants at the Imaginal Forecasting Workshop of the National Pathogen Economy demonstrating to the Minister for STI-OP, Hon. Dr. Monica MuseneroMasanza (right), a mapping of the key components of an ideal national pathogen ecosystem. PSU was represented by the Vice President and Chair Education and Grants Committee, Dr. Jonans Tusiimire (next to the minister).

4.7 Seed Research Grants and Graduate Scholarships

The Faculty has continued to support young researchers and graduate students with seed grants and scholarships for Masters of Medicine and Masters of Nursing Science students. Here below are the beneficiaries:

Table 21: Research Groups for Seed Funding in January 2022

No	Team/Group	Group Leader	Title of Research	Score	Amount
1	HIVCan	YekosaniMit ala	Changing Spectrum and Trends of Cancer among HIV patients in South Western Uganda	17	6,982,500
2	ReSONID	Samuel Maling	Dental caries, depression and cognitive impairment in diabetes among patients attending diabetic clinic at Mbarara Regional Referral Hospital”	17	7,000,000
3	HEAD	Judith Owokuhaisa	Behavior and Psychological Symptoms and Dementia in South-Western Uganda:	16	7,000,000

			Prevalence, types, impact and Coping Mechanisms		
4	AI-DIA	Elias Kumbakumba	Improving Tuberculosis Diagnosis in Children less than 10 years using Artificial Intelligence Convolutional Neural Networks Technique	16	7,000,000
5	MUSTAMS	Hanifah Nantongo	Strengthening Prescribers' Capacity for Rational Antimicrobial Prescription and Usage at Lower Primary Care Facilities in Uganda	16	6,960,000
6	DRUG SAFETY	John Isiiko	Evaluation of Drug Use among Pregnant Women Visiting Antenatal Care Clinics in MRRH, South-Western Uganda	15	7,000,000
7	RICE	Moses Ntaro	Evaluation of the Cost Effectiveness of Student Facilitated versus Standard Practice Community Led Total Sanitation Intervention in Kabale District	15	7,000,000
8	CLINICAL RESIDENCY TRACER STUDY	Leevan Tibaijuka	Tracer Study of Obstetrics and Gynaeco logy Program Graduates from Mbarara University of Science and Technology	15	7,000,000
9	INFORM TEAM	Edwin Nuwagira	Outcomes of Severe COVID-19 and Associated Factors among In-Hospital Patients less than 50 years at MRRH	15	6,690,000

4.8 Awarding letters to MNS and MMED students

Seven (7) Master of Nursing Science (MNS) and six (6) Master of Medicine students received the First Mile Scholarships under the Faculty of Medicine on March 22, 2022:



The beneficiaries together with Global Health Collaborative and Medical School leadership

(1) First Mile Multidisciplinary Research Group Seed Grant Beneficiaries' Workshop

The Faculty has continued the mission of championing research in the Faculty of Medicine by supporting different researchers (both senior and junior level). This year, with Support from First Mile Program under the Global Health collaborative, we managed to support 4 multidisciplinary research groups and 2 young researchers. These researchers will carry out their research within a period of 6 months. The grants combined amount to 43,000 USD and will benefit a total 23 researchers.



Seed grant beneficiaries together with trainers after a workshop at Acacia Hotel

Multidisciplinary Researchers:

This is a 7000USD grant that has been awarded to 4 multi-disciplinary teams as follows:

Topic	Team Composition
Kidney disease screening and monitoring among older people 50 years and above living with Diabetes Mellitus and Hypertension attending Mbarara Regional Referral Hospital in south western Uganda	Dr. Muhindo Rose (Renal Physician and team leader), Ms. Owokuhaisa Judith (Nursing Department), Ms. Abaasa Catherine (Medical laboratory technologist), Abel Mwine (Nursing officer/Dialysis Nurse – MRRH), Dr. Adrian Kayanja (Physician)
Knowledge, attitudes, practices, and moderators of Competency Based Medical Education: A needs assessment and faculty development in CBME delivery at Mbarara University of Science and Technology.	Dr. Nyaiteera Victoria, Dr. Wilfred Arubaku, Mr Joseph Oloro, Dr. Rachel Alum Aguma, Assoc. Prof. Paul Alele, Dr. Collins Agaba
Improving Covid-19 Vaccination Uptake Through Targeted Community-Pharmacy Based Counseling in Mbarara City, Southwestern Uganda	Joshua Kiptoo (M. Pharm Clinical Pharmacy, Dept. of Pharmacy, Principal Investigator); John Isiiko (M. PharmClin. Pharm, Oncology Pharmacist – UCI-MRRH); Dr. Tadele Mekuriya Yadesa (PhD, Senior Lecturer of Clinical Pharmacy); Sr. Tumugumye Rhoda (Senior Nursing staff, MRRH); Prof. Paul E. Alele (PhD, HoD Dept. of Pharmacology); Prof. Edgar Mugema Mulogo (PhD, HoD Dept. of Community Health)
New born care knowledge and practices among mothers and care givers of new-born babies attending Mbarara Regional Referral Hospital	Dr. Dorah Nampijja, Kyoyagala Stella, Najjingo Elizabeth, Najjuma Josephine,

4.9 The Inaugural East African Medical Quiz and Sports Gala

A five (5) member team of medical students were supported to represent MUST to attend the inaugural East African medical quiz competition. The event took place from the July 21 to 24, 2022 in Kisumu City. The conference was hosted by the Medical Students Association of Kenya (MSAKE) under the theme, “*MEDICAL EDUCATION AS A TRANSLATIONAL TOOL IN REDUCING THE BURDEN OF NON-COMMUNICABLE DISEASES*” A total of 4 countries participated in the regional Quiz Competition that included; Uganda, Kenya, Tanzania and South Sudan. Mbarara University of Science and Technology was represented by 5 brilliant students:

Student name	Course	Designation
Tamale Elvis	MBR 5	Team Leader/ Nation Quiz team Coordinator
Kirya Tevin Walter	MBR 5	Team leader/ National Medical Quiz team
Mulungi Jonathan	MBR 5	Member
Ssenyonga Edgar Reagan	MBR 2	Member
Sekitoleko Joseph	MBR 4	Member/ Chess Team leader Uganda

This was a great success and we extend our sincere gratitude to the organizing committee and to all the NMOS that graced the event. The regional Quiz is an academic based interaction between medical students in East Africa and it was held concurrently with medical university football games and chess. The event started with a pre-quiz conference on emergency care for Major Obstetric Hemorrhage and Maternal resuscitation and also a simulation as interludes during the event on Emergency response to patients with cardiac arrest or trauma. The event was graced by Representative members from the Kenya Medical Association, the Uganda Medical Association (UMA), The Tanzanian Medical association and South Sudan and the

different University lecturers who moved along with the students. The event was officially opened by the Dean, Maseno University Faculty of Health Sciences represented by Dr. Mpagi Joseph (The Assistant Dean) and the Vice Chancellor represented by Dr. Lillian Nambassa (the Academic Registrar). The moderators of the quiz included; Dr. Lume Ivan (FUMSA Alumnus) and Dr. Muwanguzi Shadrack (Intern Doctor at Nsambya Hospital). The panelists of the quiz included; Dr. Dedan Okello (Teaching Assistant Pediatrics – Busitema University), Dr. Napyo Agnes (PhD Public Health), The Judge was MR. Malinga Raymond (Consultant Orthopedic Surgeon) and the chairperson of the quiz was Dr. Obakiro Samuel Baker (PhD Pharmacology).



MUST student representatives in Kisumu



Local award ceremony at MUST

4.10 Faculty of Medicine Grand Rounds

The Faculty continues to conduct grand rounds aimed at delivering knowledge and skills to students from the various departments within the Faculty and the University. The grand rounds take place every Tuesday afternoon in the course of the semester. They are attended by undergraduate and graduate students together with the lecturers in the departments.



Students and faculty in the Pharmacology Lecture Theatre (PLT) during one of the grand rounds in 2022

A) Urology Clinic launch at Mbarara Regional Referral Hospital (MRRH)



Background: The unit head, Doctor Mwesigwa Marvin is a general surgeon sub-specialized in urology. He is a lecturer at MUST. After completing his masters' degree in general surgery in 2016, he embarked on the mission to sub-specialize in Urology with the aim to teach, and treat urology patients and advance research in the area of urology. He

went for a master's in urology at Kilimanjaro Christian medical college from where he also did a fellowship in Urology with the college of surgeons of east central and southern Africa (COSECSA). This training was fully sponsored by Health and development aid abroad and Stitching Tilly. After completing his training, he returned to MUST and established the urology unit so as to achieve the above goals.

The Urology Unit was established in March 2021 and has continued to train both undergraduate and postgraduate students, operate patients (so far 245 patients), run urology outpatients' clinics, conduct research in different areas of pediatric urology, cancer, obstructive uropathy, etc. The unit is partnering with - Australia Health and

Development aid abroad Australia (HADA) and they have already supported the urology unit with 20000 USD (establishing and running the unit and equipment). Our future plans are to expand and have a

urology unit with adequate space, equipment, and human resource so that we can have a Urology institute of excellence capable of training urologists for the country, East Africa and the whole world.



*Dr. Marvin Mwesigwa Mutakooha
Dr. Celestine Barigye &
Prof. Nixon Kamukama
with clinical heads of
department*



4.11 Community Engagement through COBERS

The Faculty of Medicine continues to actively participate in one of the core pillars of the University which is community service. The students go out in multi-disciplinary groups and engage with the community throughout south-Western and Western Uganda. There are over 70 community placement sites where the undergraduate students go to.



*Dr. Gad Ruzaaza,
COBERS senior
coordinator, with
students in one of the
COBERS placement
sites*

5. Faculty of Science

5.1 Introduction

This report gives an synopsis of the faculty in terms of the current student and staff population, regular activities, resources available, challenges encountered, and suggestions for mitigation. The Faculty of Science was established in July 1995, with three departments, namely: Mathematics, Physics, and Educational Foundations and Psychology. In 1998 the departments

of Biology and Chemistry were started to complete the entire spectrum of basic sciences offered by the University.

Since its inception, the faculty has steadily expanded through the introduction of new programmes at pre-degree, degree, and post-graduate levels in response to the acute national demand for scientists, science teachers and laboratory technologists.



A Biology Student Observing a Specimen under a Microscope during a Practical lesson

5.1.1 University Vision alignment

In line with the University's Vision, the Faculty is purposed to be a centre of academic and professional excellence, innovations and research in science and technology.

5.1.2 University Mission alignment

In line with the University Mission, the Faculty trains quality professional science teachers and basic scientists, skilled in transfer and application of science and technology for inclusive development.

5.1.3 Faculty Objectives

- a) To train Science teachers in response to the acute shortage of science teachers countrywide
- b) To contribute to technical skills development at both National and international levels by stimulating interests in the study of science subjects
- c) To develop relevant human resource for re-awakening and sustaining local interest in science
- d) To contribute to knowledge through cutting edge research projects in basic sciences.

5.2.0 Academic Programmes

- a) PhD in fields of Biology, Chemistry, Physics, Mathematics and Education

- b) Masters of Science in Biology (Environment and Natural Resources)
- c) Master of Science in Biology (Microbiology and Parasitology)
- d) Master of Science (Chemistry)
- e) Master of Science (Mathematics)
- f) Master of Science (Physics)
- g) Master of Education in Educational Psychology
- h) Master of Education in Educational Administration and Planning
- i) Master of Education in Curriculum and Media Studies
- j) Bachelor of Science Education (BSc. Ed)
- k) Diploma in Science Laboratory Technology (SLT)
- l) Higher Education Access Programme (HEAP)(Certificate)

5.2.1 Regular Programmes/Activities

- a) Teaching at Post-graduate, undergraduate, and Pre-degree levels
- b) Supervision of projects for diploma, graduate and Post-graduate students
- c) Supervision of student-teachers in different schools while at School Practice in June to July
- d) Supervision of Students on Industrial Training
- e) Research and publications, mainly at group and personal levels
- f) Examining and assessing students through setting, administering and marking

course works and end of semester examinations

- g) Curriculum development and review
- h) Attending and facilitating seminars, workshops, and making presentations
- i) Academic staff continue to carry out dimensional research activities at local, national, regional and international levels, despite financial constraints.
- j) Various research studies are done in collaboration with the Institute of Tropical Forest Conservation.
- k) **School Practice:** As a mandatory requirement by the Ministry of Education and Sports, teacher trainees carry out school practice as one of the key ingredients to improve the quality of the teachers produced. This is part of the broader changes that are sweeping over teacher education

and training to meet the objectives of the 2019 National Teachers Policy. All science teacher trainees at MUST are required to undergo mandatory school practice to expose them to a real school environment before they graduate. A team of 45 lecturers are spread over 22 districts supervising 300 students on school practice.

- l) **Industrial Training** is premised to expose the students to a real work environment when they are still in training to enable them appreciate and pay attention to those areas they find important to the real work environment. This course basically involves placement at an institution for a period of 8 weeks and a final report being written by the student.



Diploma Students attending a Chemistry practical session during Industrial Training

5.3 Student Enrollment

The Faculty currently has a total of 510 (Female 108 [21.2%]; Male 402 [78.8%]) students as shown below:

Table 22: Faculty of Science Student Distribution

Category	Gender		Total
	Male	Female	
BSc I	107	21	128
BSc II	112	21	133
BSc III	126	25	151
Med	03	03	06
MSc	15	06	21
PhD	03	03	06
DLT	36	29	65
Sub-total	402	108	510



Biology Students conducting a practical session

5.4 Staffing

The faculty population stands at 45 (Female 15 [33.3%]; Male 30[66.7%]) full-time lecturers, twenty-two (22) part-time lecturers and six (6) support staff. The table below shows the details of all teaching staff by department.

Table 23: Faculty of Science Staffing

Education Foundations and Psychology Department				
Category	Gender		Total	Desired No
	Male	Female		
Professor	00	00	00	02
Associate Professor	01	00	01	03
Senior Lecturer	03	00	03	03
Lecturer	02	02	04	02
Assistant Lecturer	00	00	00	04
Teaching Assistant	00	00	00	03
Laboratory Technicians	00	00	00	00
Sub-total	06	02	08	17
Physics Department				
Category	Gender		Total	Desired No
	Male	Female		
Professor	00	00	00	05
Associate Professor	01	00	01	05
Lecturer	06	00	06	10
Assistant Lecture	02	01	03	08
Teaching Assistant	00	00	00	04
Laboratory Technicians	02	00	02	03
Sub-total	11	01	12	35
Biology Department				
Category	Gender		Total	Desired No
	Male	Female		
Professor	00	00	00	04
Associate Professor	01	01	02	06
Senior Lecturer	02	02	04	06
Lecturer	00	03	03	08
Assistant Lecturer	03	01	04	06
Teaching Assistant	00	00	00	04
Laboratory Technicians	01	00	01	02

Laboratory Assistants	00	01	01	02
Sub-total	07	09	14	36

Mathematics Department

Category	Gender		Total	Desired No
	Male	Female		
Professor	00	00	00	02
Associate Professor	00	00	00	04
Senior Lecturer	04	00	04	06
Lecturer(Full time)	00	03	03	08
Lecturer(Part-time)	00	00	00	04
Assistant Lecturer	02	00	02	06
Teaching Assistant	00	00	00	04
Laboratory Technicians	00	00	00	02
Sub-total	06	03	09	38

5.4 Collaborations

The Faculty has established new and maintained long-standing collaborations with a number of organizations to create synergy in research and teaching as avenues for quality output; a few are mentioned here below;

Table 24: Collaborations' profile

NO	Research Project	Project Team	Collaborators	Funder and time frame	Ongoing research	Status	Achievements/outputs	SDG addressed	NDPIII Alignment
1	PHARMB IOTRAC	Dr. Casim Tolo Umba (Director) Dr. Patrick Ogwang (PI)	Worchester Polytechnic Institute (WPI) Natural Chemotherapeutics Research Institute (NCRI) Regional University Forum (RUFORUM)	World Bank 2017 – 2022	3 PhD researches: a) Morphological and genetic diversity, phytochemical profiling and micropropagation of <i>dioscorea bulbifera</i> in Uganda an antifertility medicinal plant b) “Ecology, phytochemical variability and bioactivity of <i>Citropsis articulata</i> , a threatened medicinal plant: implication for ex-situ conservation in Uganda”	Being completed	3 PhDs A Biotechnology Laboratory	SDG 3 & 4	Program me 12: Human Capital Development

					c) Propagation and Growth Performance of Schkuhriapinnata L, for Optimal Phytochemical Contents and Antimalarial Activity in Uganda			
2	Action Towards Reducing Aquatic snail-borne Parasitic diseases (ATRAP)	Dr. CasimTol o Uмба (PI) Prof. Grace Kagoro Dr. Viola Nyakato	Dr. Tine Huyse Royal Museum of Central Africa (RMCA)	RMCA multinati onalprog ramme 2019 – 2023	3PhDs; d) “Dynamics of Snail Species and Interventions to Reduce associated Schistosoma and Fasciola Parasitic Infections: A Citizen Scientists’ approach in Western Uganda”. e) “Community engagement and schistosomiasis prevention: a sociological analysis of the citizen model among selected communities of Western Uganda” f) “Spatial-temporal modeling of the snail intermediate hosts of	ongoing	3PhDS 2MSc	SDG 3, 4 & 5

					Schistosoma parasites in Western Uganda”			
					2MScs			
					g) Assessing the burden of Fasciola and Schistosoma parasite infection among domestic and wild mammals in Kagadi and Ntoroko Districts, Western Uganda			
					h) “Understanding the gender factor in the spread and control of schistosomiasis in the spread of schistosomiasis: A case of Kagadi district.”			
3	Digital citizen science for community-based resilient environmental management	Prof. Grace Kagoro	Prof Matthieu Kervyn Vrije Universiteit Brussel Faculty of Sciences and Bio-Engineering Sciences	TEAM project and South Initiative 2019-2023 funded by	2PhDs i) The added value of citizen science to environmental hazard assessment and risk analysis: The case of the geo-observer network in south western Uganda	ongoing	2 PhDs 3 MSc Policy briefs for Disaster Management committees for	SDG 4 & 11

ent(D_SIRE)	Department of Geography	VLIRU OUS	<p>j) Knowledge Transfer for Adoption of Effective</p> <p>k) Disaster Risk Reduction Strategies and Improved Livelihoods: Evidence from Western Uganda</p> <p>3MScs;</p> <p>l) Occurrence and distribution of pests and diseases in farmer communities of Kisoro and Buhweju</p> <p>m) Modelling soil loss with the use of the Revised Universal Soil Loss Equation (RUSLE) in Kigezi Region Southwestern Uganda</p> <p>n) Access to information and adoption of agroforestry as a disaster risk reduction strategy among farming communities in the Rwenzori mountain slopes</p>	<p>Bushenyi, Buhweju, Kasese, Kabarole and Bundibugyo Districts and national level</p>
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4	Natural Hazards, Risks and Society in Africa: Developing Knowledge and Capacities (HARISS A)	Prof Grace Kagoro Dr. Ronald Twongyirwe	Dr. Olivier Dewitte (Royal Museum for central Africa).	RMCA - GDG multiannual program 2019 – 2023	1 PhD; o) "Natural hazards and their interactions under the lens of Citizen Science: a multi-hazard assessment for the South Western region of Uganda"	ongoing	1 PhD Policy briefs for Disaster Management committees at district for Kabale, Rubanda and Kisoro and national level	SDG 4 & 11
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5	Epidemiological survey for Schistosoma hybrids and praziquantel efficacy in children in Lango sub region, Uganda	Prof Grace Kagoro (PI) Mr. Rapheal Wangalwa Mr. Ben Lukubye	-	Grants Program me 2021 Royal Society of Tropical Medicine and Hygiene (RSTM H)	p) Efficacy of praziquantel against S. mansoni and S. haematobium in Lango sub region. q) Explain a possible cause of the observed parasite shift from S. haematobium to S. mansoni to inform mass drug administration in Uganda. r) Prevalence and intensity of hybrids among the children in Lango sub region, introgression and the direction of introgression in Schistosoma parasites in Lango sub region.	Ongoing	Publications Policy briefs	SDG 3 & 4
6	University as a Facilitator for Community Based Sustainable Solutions to	Prof. Grace Kagoro Sr. Dr. Jane Yatuha	Prof Matthieu Kervyn Vrije Universiteit Brussel Faculty of Sciences and Bio-Engineering Sciences	IUC Capacity building program me 2022-2034 funded by	MUST to have improved research expertise and facilities to develop and test climate-smart and sustainable land management practices. Citizen-based digital information systems are established and support multi-actor initiatives to	To start	6PhDs 12 MSc Soil physical chemical and food nutrient	SDG 1, 3, 4 & 5

	Demographic Challenge s in South Western Uganda (UCoBS) Sub project t 2: Mechanisms for Climate Change Adaptation for Sustainable Food Production	Dr. Justine Nakintu Mr. Raphael Wangalwa	Department of Geography Prof. RoelMerx, KU Leuven University Prof. HerveVanschu ren, KU Leuven University	VLIRU OUS	design climate smart agriculture and conservation practices for increased and sustainable food production of small holder households of the SW region of Uganda.		laboratory Electronic climate data Kiosks Soilfertility Algorithms	
7	DAAD in country/in region scholarship programme	Prof. Grace Kagoro	MUST	DAAD 2023-2025	To fund MSc Biology in Natural resources' ecology, management and conservation; Microbiology and parasitology	Concept accepted and full proposal submitted	MScs	SDG 4 & 17

5.5 Collaborations/ Partnerships

Partner	Year established	Area of Collaboration	Time frame	Outcomes	SDGs to be addressed
Prof. MatthieuKervyn Free University, Brussels	2019	Research	2019 - 2024	a) Environmental disaster risk maps b) Better reporting of environmental disasters and hazards c) GIS capacity building d) 3 PhDs aditteed in Belgium Universities e) 4 MSc to be at MUST	SDG 13 – Climate Action
Dr. Tine Hyuse	2019	Research	2019-2024 5 Years	a) Schistosomiasis risk maps b) PhD researchers and 5 Masters students affiliated to universities in DR Congo, Uganda and Belgium	SDG 3 – Health and well being
University of Kassel, Germany	2014	Research (RELOAD)	2014 -2019 5 YEARS Completed	a) 3 PhD (s) MSc (s) b) 10 publication as outlined above	SDG 4 – Quality Education
Justus Liebig University, Germany	2013	Research and Supervision	Ongoing	c) 2 PhD(s) and 3 MSc (s) so far d) Laboratory equipment donations	SDS 4 – Quality Education

- e) Laboratory facilities in Germany
- f) Summer school trainings

Table 25: Ongoing Research

No	Grant by:	Research project	Status	Out	SDG to be addressed	NPDIII Alignm ent
		Post-harvest handling in the pineapples' value chain: loss and strategies for increasing benefits	ongoing	a) PhD degree b) 2 Published papers c) Pineapple pulp fortified product	SDG 2 – Zero Hunger	Progra mme 12: Human Capital Develo pment
		Loss hot spots of the Beef value chain in Uganda	Ongoing	a) 2 Published papers	SDG 1 – No Poverty	
		On-farm milk handling practices and the quality of raw milk in Mbarara district, south western Uganda	Completed	a) MSc degree b) 2 Published papers c) An app to help farmers keep records d) Policy brief e) Farmers manual on milk handling	SDG -3 Good Health and Wellbeing	
		Value Chain Knowledge analysis and characterization of <i>Cucurbita maxima</i> Landraces for value addition avenues	Ongoing	f) MSc degree g) 2 published papers h) Scientific naming of Ugandan pumpkin landraces i) Documented pumpkin nutrient profiles for value addition avenues		

		Fortification starchy foods with folic acid from organic sources	Ongoing	<ul style="list-style-type: none"> a) MSc degree b) 2 published papers c) Food product to alleviate d) Neural tube defects in children 	
		Pineapple pulp as a dietary Fiber supplement	Ongoing	<ul style="list-style-type: none"> e) MSc degree f) 2 published papers g) Industrial dietary avenue for pineapple pulp processing 	
2	DAAD/ADB	The local pig breeds in South Western Uganda: Role in current production systems and prospects for conservation	Ongoing	<ul style="list-style-type: none"> h) PhD degree i) 2 Published papers j) Streamlined taxonomy of indigenous pig breed k) Policy brief on indigenous pig conservation 	SDG 1 – No Poverty
3	DAAD	Utilization, shelf life and nutrient content of genotypic varieties of Jack fruit (<i>Artocarpusheterophyllus</i>) in Uganda	Ongoing	<ul style="list-style-type: none"> l) PhD degree m) 2 Published papers n) Scientific Identification and classification of jack fruit o) Policy brief on Jackfruit utilization and conservation 	SDG 3 – Good Health and Wellbeing
4	ADB	Modeling Flea species distribution and evaluation of Indigenous methods of their control in Uganda	Ongoing	<ul style="list-style-type: none"> a) PhD degree b) 2 Published papers c) Policy brief on the indigenous flea control 	SDG 3 – Good Health and Wellbeing

5	SELF	Impact of climate change and climate variability on small scale farming in Mitooma District, South western Uganda	Ongoing	d) PhD degree e) 2 Published papers f) Policy brief	SDG 13 – Climate Action
6	ADB	Biological and Physicochemical composition of surface waters draining into River Rwizi Basin	Ongoing	g) PhD degree h) 2 Published papers i) Policy brief on pollution sources of River Rwizi and their mitigation	SDG 6 – Clean Water and Sanitation
7	ADB	Assessment of water quality and Macro-invertebrates' diversity and developing a Mutara Rangeland River Scoring System	Ongoing	j) MSc degree k) 2 Published papers l) A river scoring system to monitor water quality in Rwanda	SDG 6 Clean Water and Sanitation
8	SELF	The status quo of the shoe bill stork and its ecology of lake Bisinia-Opeta wetland system	Ongoing	m) MSc degree n) 1 Published paper o) Policy brief on conservation of the shoebill stork	SDG 6 – Clean Water and Sanitation
9	SELF	Variation of shelf life and nutrient in Tomato cultivars	Ongoing	a) MSc degree b) 1 Published papers c) Policy brief on the tomato handling and utilization best on shelf life	SDG 3 – Good Health and Wellbeing

10	DAAD	Testing capability and reliability of the Tanzanian river scoring system (TARISS) as a water scoring system for Uganda: Case study of River Mpanga	Complete	d) MSc degree e) 2 Published papers f) A river scoring system to monitor water quality in Uganda	SDG 6 – Clean Water and Sanitation
11		Impact of Savannah degradation on Mutara Rangelands, Rwanda	Complete	g) MSc degree h) 1Published paper	SDG 13 - Climate Action
12	Belgium Technical cooperation (BTC)	Livestock waste management in confined livestock feeding operations and bacterial pollution: a case study of Bugembe town council – Jinja district	Ongoing	i) MSc degree j) 1 Published papers k) Policy brief on the contamination by urban livestock waste and its management	SDG 1 - No Poverty
13		Estimating the above ground Biomas and carbon stocks in Bwindi Impenetrable National Park	Complete	a) MSc degree b) 1 Published papers c) Policy brief on rates of carbon sequestration by different tree species	SDG 13 – Climate Action

14	Self	A study on Anophelinemosquito larval abundance in distinct geographical and environmental settings in South Western Uganda- Kabale	Ongoing	d) MSc degree e) 1 Published papers f) Policy brief on wetland degradation and mosquito prevalence and control in Rukiga highlands	SDG 3 – Good Health and Wellbeing
15	ITFC	Re-assessment of vegetation regeneration in formerly encroached areas in Mgahinga gorilla National Park, South-western Uganda	Complete	a) MSc degree b) 1 Published paper c) Policy brief on extent of natural vegetation regeneration in Mgahinga NP	SDG 15 – Life on Land
16	BTC	Understanding Sweet potato Vine Vigour, Virus Degeneration and Cost Benefit Analysis Of Rapid Vs Dual Purpose Vine Multiplication In Rakai District	Ongoing	d) MSc degree e) 1 Published paper f) Policy brief on seed multiplication and sweet potato viruses	SDG 2 – Zero Hunger
17	MSI	The environmental history of lake Nabugabo: evidence from Phytoliths-based analysis	Ongoing	g) MSc degree h) 1 Published paper	SDG 14 – Life below water
18	DAAD	Carbon sequestration by selected plant categories and awareness to carbon market in Kyamuhunga, Bushenyi	Ongoing	i) MSc degree j) 1 Published papers k) Policy brief on fuel wood use, deforestation and carbon sequestration by	SDG 15 – Life on Land

		district, Uganda: implication for global warming		Kyamuhunga tea producers and processors	
20	MUST/UWA	Foraging patterns of mountain gorilla in relation to plant community structure, nutrient and phyto-chemical composition in Bwindi impenetrable national park	Ongoing	a) PhD degree b) 2 Published papers c) Scientific Identification of reason why Gorillas move out of the park d) Policy brief on Gorilla conservation as far as ranging e)	SDG 15 – Life on Land
21	Self	Distribution of the introduced Louisiana red swamp crayfish (<i>Procambarus clarkii</i> girard, 1852) in south western Uganda	Ongoing	f) MSc degree g) 1 Published papers h) Policy brief on invasive aquatic species- Cray fish i)	SDG 2 – Zero Hunger
22	Self	Assessment of habitat recovery in formerly encroached areas of Katsyoha-Kitomi forest reserve, south- western Uganda	Ongoing	j) MSc degree k) 1 Published papers l) Policy brief on degradation and restoration of Forest Reserves	SDG 15 – Life on Land
23	Self	Characterization and yield performance evaluation of wetland cocoyam varieties (<i>Colocassia esculenta</i>) under	Ongoing	a) MSc degree b) 2 Published papers c) Policy brief on breeding for climate variability	SDG 2 – Zero Hunger

		upland conditions of western Uganda			
24	Self	The integrity and fish diversity of selected lakes within Lake Mburo-Nakivale wetland system, Lake Victoria basin	Ongoing	d) MSc degree e) 1 Published paper f) Policy brief on Fish diversity and fishing intensity	SDG 2 – Zero Hunger
25	PHARMBIOT RAC	Agronomic bio-fortification and propagule conservation of selected efficacious anti-malarial medicinal plants.	Ongoing	g) PhD degree h) 2 Published papers i) Scientific Identification of propagation methods for traditional medicines against Malaria j) Increased active ingredient against plasmodium	SDG 3 – Good Health and Wellbeing
26	Self	Pesticidal properties of selected plant species on pests of brassica vegetables: a case study of Katanda sub-county, Rubirizi District	Ongoing	k) MSc degree l) 1 Published paper m) Policy brief on efficacy of plant extracts on eliminating pests	SDG 3 – Good Health and Wellbeing
27	Self	Pesticide use practices and pesticide residues in tomato fruits produced by small-scale tomato farmers of Biharwe sub-county, south western Uganda	Ongoing	a) MSc degree b) 1 Published papers c) Policy brief on seed multiplication and sweet potato viruses	SDG 3 – Good Health and Wellbeing

28	PHARMBIOT RAC	Unraveling the bionomics of selected medicinal plants in Uganda	Ongoing	d) PhD degree e) 2 Published papers f) Scientific Identification of propagation of difficult to grow medicinal plants g) Manual on propagation and planting of the same plants	SDG 3 – Good Health and Wellbeing
29	Self	Effectiveness of organic and inorganic nutrient sources towards maize productivity and profitability in Ihunga Sub county, Ntungamo district, Uganda	Ongoing	h) MSc degree i) 1 Published paper	SDG 1 – No Poverty
30	Self	Extremophile diversity as indicators of water quality in Kitagata and Ihimbo hot springs in south western Uganda	Ongoing	j) MSc degree k) 1 Published paper l) Policy brief on Hot spring conservation	SDG 6 – Clean Water and Sanitation
31	PHARMBIOT RAC	Anti-fertility medicinal plants located in Uganda and the role of biotechnology in enhancing the production of the secondary anti fertility metabolites	Ongoing	m) PhD degree n) 2 Published papers o) Scientific Identification of enhancing metabolites p) Make a product: Contraceptive	SDG 3 – Good Health and Wellbeing

5.6 Achievements within the academic year

- a) Training of trainers for Higher Education Access Programme (HEAP). The Higher Education Access Programme is aimed at enabling students, who have not attained sufficient grades at Senior Six (6) to enroll for a degree course after successfully undertaking the certificate course.
- b) It serves as an alternative route to access University Education by A-level students who did not attain the two principal passes as the current direct requirement for admission.

The program has attracted 80 students in total that is: Biology/Chemistry- 69 students, Mathematics/Physics -2 students, Chemistry/Maths – 9 students

- c) Accreditation of all reviewed PhD, Masters and Bachelors Curricula
- d) Conducted school practice
- e) Conducted Industrial training
- f) Produced 22 publications
- g) All staff trained and adopted the e-Learning Management System (LMS) for teaching and continuous assessment
- h) General staff development: 8 members of staff pursuing their PhD studies, three members completed their PhD (1 Female & 2 male)

- i) Total number of graduate students increased with a total of 38 students; 10 of which are PhD and 28 MSc.
- j) Various PhD and MSc on-going research projects of the 38 graduate students
- k) Teaching of GIS and Spatial analysis
- l) Research collaboration between Smithsonian Institute, USA, and MUST-Biology Department about Palaeology of Mountain Gorillas
- m) Land acquisition at Kihumuro for the set up for a biotechnology and Research centre for Biology Department

5.7 Current/ongoing activities

- a) Regular programmes and activities
- b) Teaching, assessment at Post-graduate, undergraduate, and Pre-degree
- c) Supervision of research projects for post-graduate students
- d) Supervision of student-teachers in different schools while at School Practice in June – July 4, 2022. Research and publication.
- e) Examining and assessing students through setting, administering and marking course work and end of semester examinations
- f) Curriculum review and development

- g) Attending seminars, workshops, and making presentations

5.8 Planned activities for 2023

- a) Building molecular Biology/Biotechnology as another area of specialization in the Department
- b) Continue the above research projects
- c) Staff training
- d) In house training and capacity building
- e) Review and roll out new programs Curriculum for BSLT, PGDE, Pedagogical Teaching Skills Training

5.9 Challenges and mitigations

- a) Community outreach programs more especially school practice has been affected due to delayed release of funds by government
- b) Inelasticity in budgetary allocations to School practice exercise is non-responsive to institutional natural growth. The high number of students requires a corresponding increase in budgetary allocation
- c) Facilitation of field activities i.e. School Practice, Industrial training and field visits
- d) Limited levels of Staff development - Much as eighteen staff in the faculty have opted for further study, they do not have full sponsorship.
- e) Unavailability of funds for research - Currently the budget includes a small seed fund for research though this has not covered all staff to facilitate research activities for the last several years.
- f) Shortage of laboratory equipments
- g) Limited projectors compared to the number of teaching staff
- h) Lack of security in and around the science block
- i) Peeling walls due to water leakages, Worse still, there has been no face lift to the building since 2004
- j) Inadequate funds to support innovative research at all levels and inadequate remuneration for research supervision and field study
- k) Inadequate funds to purchase instructional materials
- l) The teaching time table is issued late, and with a lot of clashes/challenges. By the time it is sorted the semester is in the third week.
- m) Inadequate number of Laboratory Technicians to help in practical courses
- n) Administration of Practical courses has been poor due to lack of specimen and laboratory equipment
- o) Stiff competition for proposal grants

- p) Understaffing limits writing of publications, creativity and innovation
- q) Lack of funding for field training activities
- r) Delays in procurement of teaching facilities like stationery, practical specimens, and reagents affect effective delivery of course content
- s) Lack of financial support to facilitate research publications
- t) Limited staff numbers affect both faculty growth and expansion

5.10 Quality Assurance mechanisms

The faculty has a quality assurance committee in charge of the above to ensure adherence to national guidelines. Key focal areas include

- a) Course content
- b) Examination
- c) Quality of staff: Competence
- d) Staff numbers: Staff-student ration
- e) Research: Supervision and output
- f) Quality of the teaching environment
- g) Availability and quality of Instructional material

5.11 Research: output, ongoing and publications

See table above

a) Current Student Enrollment

The Faculty currently has a total of 510 (Female 108 [21.2%]; Male 402 [78.8%]) students.

b) Academic Research

Interests:

- i) Absolute summing operation in krein space setting
- ii) Modelling in Epidemiology
- iii) Radiation Physics
- iv) Renewable Energy Research
- v) Girl Child Education
- vi) Gender Environmental research in Chemistry, Biology and Physics
- vii) Wildlife conservation
- viii) Climate change
- ix) Educational Planning and management
- x) Parasitology and Entomology
- xi) Indigenous knowledge
- xii) Space Science

c) Research

Staff in the faculty continues to carry out research activities at local, national, regional and international levels, despite financial constraints. Diverse research studies are done at the Institute of Tropical Forest Conservation.

d) International Research

Through the International Foundation for Science (IFS) and Millennium Science Initiative (MSI), the Department

of Biology completed a study investigating the effect of Climate Change on Lake Victoria water levels. The department also undertook another project in the above theme under the Organization for Social Science Research in Eastern and Southern Africa (OSSREA).

5.12 Planned Programmes:

- a) Bachelor of Science in Laboratory Technology
- b) Bachelor of Science in Petroleum Chemistry
- c) Bachelor of Science in Post-Harvest Technology
- d) Bachelor of Science in Statistics
- e) Bachelor of Science in Financial Mathematics
- f) MSc in Electronics
- g) Master of Education in Mathematics
- h) Computer Science Education
- i) Postgraduate Diploma in Education

5.13 Biology Department

5.13.1 Achievements within the academic year

5.13.2 Staff Capacity building

- a) Two members of staff from Biology Department obtained scholarships namely Tumussime Julius, funded under the ATRAP Project for a PhD and Mr. Godfrey Begumisa to be funded under RUFORUM for a PhD

- b) Two other PhD graduates who are not members of staff namely Collins InnoSebuwufu and Juliet Kyayesimira
- c) Students output

5.13.3 Projects

The Department won two grants last year:

- i) Digital Citizen Science for Community-based Resilient Environmental Management” (D-SIRE) worth € 279,917

Project summary: Previous projects highlighted the developmental challenges posed by rural population exposure to natural hazards associated to population pressure, fragile livelihoods and land scarcity. To document the evolution in time of these hazards, identify potential suitable strategies to reduce their impacts, and raise awareness among the affected communities several tools have been developed, especially the geo-observer network in the Rwenzori Mountains though still limited in terms of equipment, skills and geographical scope. This new project aims at going a step further by 1/ extending the geographical extent of the geo-observer network to South West Uganda; 2/ enhance the skills and knowledge of these geo-observers as environmental facilitators able to serve as interface between the communities and the scientists; 3/ develop teaching and research capabilities for geo-database management and analysis in the

partner universities; 4/ scientifically valorise the crowd-sourced database to improve spatio-temporal modelling of hazardous processes; 5/ develop and test new methods to initiate the implementation of resilient livelihood practices; 6/ favour multi-lateral interactions between rural communities, district authorities and scientists.

- ii) Action Towards Reducing Aquatic snail-borne Parasitic diseases (ATRAP) worth €1,000,000.

Project summary: The last decades, the control of schistosomiasis has focused on mass drug administration (MDA) among school-aged children. However, schistosomiasis continues to (re-)emerge and scientists agree that MDA alone does not suffice. Research demonstrated that a limited knowledge, risky water practices, poor sanitation and negative attitudes and beliefs about schistosomiasis increase the risk of infection. Therefore, a better understanding of risks together with improved health education and more active inclusion of local communities are essential to increase knowledge and induce behavioral change. In this project we want to develop a novel vector monitoring approach that can be executed by non-specialists, in order to reduce transmission of snail-borne diseases. Citizens will be actively involved in snail monitoring, but will also act as communicator to the wider

community, resulting in a multiplication effect. Apart from effective sensitization and education, this ‘*citizen science*’ approach will allow to significantly increasing the scale and resolution of snail monitoring, generating the much-anticipated ecological data to create reliable risk maps. Another important component is a thorough understanding of sociocultural factors that influence knowledge uptake and induce behavioral change.

5.13.4 Rolled on projects from the previous year

- a) Various PhD and MSc on-going research projects of the 38 graduate students
- b) Teaching of GIS and Spatial analysis
- c) Research collaboration between Smithsonian Institute, USA, and MUST-Biology Department about Palaecology of Mountain Gorillas
- d) Land acquisition at Kihumuro for the set up for a biotechnology and Research centre for Biology Department

5.13.5 Current/ongoing activities

- a) Research projects
- b) Teaching

5.13.6 Planned activities

- a) Building molecular Biology/Biotechnology as

- another area of specialization in the Department
- b) Experimental land acquisition at Kihumuro.
 - c) Continue the research projects below

5.13.7 Challenges

- Administration of Practical courses poor due to lack of specimen and laboratory equipment
- Timely finances to help acquire practicals specimens and reagents for practical. This money, even when requisitioned early enough, is released when semesters are ending hence students cannot do practicals as required.

- a) Lack of space for postgraduate teaching in the Faculty of Science
- b) Understaffing limits writing of publications, creativity and innovation due to lack of time
- c) Limited funding for field training activities
- d) No finances to facilitate research publications
- e) Lack of Staff to effectively teach some accredited courses that are not being taught and roll out those that are written but not accredited yet
- f) Persistent staff demotivation due to lack of promotion.

Despite the financial, structural and human resource challenges the Faculty has continued to work sustainably and deliver its mandate with minimal resources.



Biology Students conducting a practical



Physics Students conducting an experiment during a practical lesson



Physics Students conducting an experiment



A Group of BSc Students

6. Faculty of Computing and Informatics

6.1 The Faculty Strategic Objectives

- a) Increase the number of innovations in the Faculty of Computing and Informatics
- b) Promote community engagement in research and teaching
- c) Increase graduate employability

The Faculty of Computing and Informatics (FCI) continues to be responsible for teaching, research, community outreach and implementation as well as support of ICT services at MUST.

6.2 Students Enrolment

Course	Duration (Years)	Male	Female	Total enrolment (2022)
Computer Science	03	85	25	110
Information Technology	03	91	197	288
Software Engineering	04	128	40	168
PGD.IS	01	02	01	03
Master of Science in Health Information Technology	02	5	4	9
Master of Science in Information Systems	02	12	9	23
Master of Science in Business Informatics	02	2	2	4
Doctor of Philosophy	03	11	5	16
TOTAL				621

6.3 Academic Programmes

The academic programmes at the faculty include:

6.3.1 Postgraduate Programs

The postgraduate programs have attracted a number of students from both Uganda and outside. All this is because the staff are committed in mentoring the postgraduate students.

The Faculty is currently running the following postgraduate programmes:

- a) Doctor of Philosophy (PhD) in Computing by research (3 years)
- b) Master of Science in Information Systems (MSIS) - (2 years)
- c) Master of Science in Health Information Technology (MHIT) - 2 years)

- d) Master of Business Informatics (MBI) - (2 years)
- e) Postgraduate Diploma MIS, PG.HIT; PGD.BI @ 1 year

6.3.2 Undergraduate Programs

- a) Bachelor of Science Computer Science (BCS) - 3 years
- b) Bachelor of Information Technology (BIT) - 3 years
- c) Bachelor of Science in Software Engineering (BSE) - 4 years
- d) Certificate Short courses – 2 to 6 months' duration

6.4 Teaching and Learning

Second Semester 2021/2022 academic year started on July 4, 2022 and ended October 22, 2022. Teaching and learning was smoothly done despite the financial constraints that were experienced.

6.4.1 Quality Assurance (Q.A) Mechanisms

On September 28, 2022, the Faculty of Computing and Informatics carried out an examination moderation exercise in preparation for the end of semester two 2021 – 2022 examinations. The exercise was carried out under the QA activity to ensure that examinations set by lecturers were up to standard and of the quality expected. The facilitators were members coming from each of the three departments. The exercise took three days and the facilitators were provided a transport refund for

the exams they were able to scrutinize and moderate.

The Faculty is grateful for the continued commitment to ensure quality services are given to the students and staff of this great University. The exercise was carried out successfully and the facilitation funds were paid direct to the moderators' account numbers. We look forward to having such activities in the faculty for the betterment of the University.

6.4.2 Examination Moderation

The aim of this exercise is to ensure that quality examinations are set. This exercise was successfully done and harmonized in accordance with QA requirements. An academic staff set their exam and submitted to another staff as per scheduled arrangement to check the quality element before the exam was made ready to be administered to students.

6.4.3 Examinations

The academic staff set exams for end of Semester 2, academic year 2021/2022, marked the examination scripts and submitted results for approval by Faculty Examiners Board which was done. Examinations were concluded well. There were few incidences of the students who missed exams due to fees, sickness and another got an accident.

Thereafter the results were presented to Sub-committee of Senate and consequently Senate for approved.

6.5 Short courses undertaken

6.5.1 Applied Curriculum in Technology for East Africa (ACTEA) – trainings

Under this project a number of students and staff benefited from the training about different skills of handling some equipment. The grant attracted a hi-tech automation lab with world standard equipment installed in the electronics lab in Kihumuro FAST Laboratories. Below is one of the equipment that the university benefited from ACTEA.



6.5.2 Milima Cyber Academy training

The training aimed at enabling each participant (MUST staff & bankers in South Western Uganda) to understand and defend against a wide variety of modern IT attacks. This was a training for five days. There is a plan to establish a collaboration with Milima Cyber Academy so that whenever there is training staff freely attend.

6.5.3 Udemy training

MUST-UCoBS-IUC University Partnership subproject 6 is also

supporting the faculty to train in various short courses in the line of computing through the Udemy online academic platform.

Udemy is an online learning and teaching marketplace with over 204000 courses and 54 million students. Staff members who enrolled learn identified short courses under programming, marketing, data science and more courses as per the field of interest.) Beneficiaries from FCI were Richard Ntwari, Aggrey Obbo and Francis Kamuganga.

Aggrey Obbo had enrolled for Data Science, Data Warehousing and

Electronics. As at 31 December 2022 he had trained 30%, 10% and 10% respectively. Mr. Ntwari was undertaking two courses namely SPSS Masterclass and UX design. In SPSS class, he is learning quantitative statistics analysis using SPSS software. In UX design, he is learning about user interface designs. Mr. Francis Kamuganga is undertaking Statistics for Data Science and Business analysis; Fundamentals of remote sensing; and Python full stack development.

Faculty of Computing and Informatics still has a limited span of regions where students can do their industrial training for the 8 weeks. This continues to be mainly attributed to the limited funds for supervisors to supervise as well as limited ICT/Computing Based companies/organizations in the country at large. Training and supervision were carried out in two main regions Western Region and Central Region.

The office of the Industrial training coordinator together with the administration of the Faculty of Computing and Informatics annually defines these regions. The reason for defining these regions is to limit students from going to places that are hard to reach and also outside the country. This limitation is still attributed to the fact that funds would not be available to facilitate lecturers outside the country and to supervise students in those far and hard to reach places from the university.

Students reported to their training placement areas/companies on October 17, 2022 and supervision was done twice by the supervisors (first visit was from November 12 - 18, 2022 and the second visit was from December 8, 2022 and ended on the December 14, 2022). The industrial training ended on December 16, 2022.

Notably, until now this is still a big challenge since there are big companies that would be very helpful to our students and yet they are far to reach and others are in the neighbouring countries like Kenya, Congo, Burundi, Rwanda South Sudan and Tanzania. This has also been a challenge to our international students who would like to train from better ICT/computing companies in their countries.

6.6 Other planned Post and Undergraduate programs

Curricula for the following programs are underway to completion:

- a) Diploma in Computer Science - 2 years
- b) Diploma in Information Technology - 2 years
- c) Bachelor's degree in Media Computing - 3 years
- d) Bachelor's degree in Forensics Science - 3 years
- e) Masters & Bachelor's degree in Data Science - 3 years

It is notable that the above will be resumed as and when MUST Council

removes the ban on developing new programs.

6.7 Review of existing Programs

Bachelor of Information Technology and Bachelor of Computer Science which had been reviewed were approved by National Council for Higher Education, and are now running smoothly.

6.8 Faculty Departments

The Faculty currently has three departments and two units. These are:

- a) Department of Information Technology
- b) Department of Computer Science
- c) Department of Software and Informatics Engineering
- d) Computing Services Unit
- e) Software Incubation and Innovations Unit

6.8.1 Department of Information Technology

The department offers an undergraduate degree in Information Technology taught on full time basis and graduate degree programs as well as Postgraduate Diploma programs taught on weekends at the town campus. During Semester two, teaching and examinations were successfully done. Students sat exams, they were assessed and results submitted accordingly.

Final year students presented their final year research projects and submitted them for assessment. The department has 2 PhD staff, and 6 PhD students. Two of them have already collected data, while one has recently defended and passed. The other 2 students are defending their research work in January 2023. The other one has submitted to REC for approval. This will strengthen research and innovation in the department.

6.8.2 Department of Software and Informatics Engineering

This department was formerly Computer Engineering. When the latter was transferred to FAST the Faculty deemed it right to change the name to suite the new program of Software Engineering, as well as leaving the department open for other newly planned programs.

FCI currently has Software Engineering students whose numbers are increasing steadily - from 12 students in 3rd year, 54 in 2nd year to 95 students in first year.

The department staff are currently engaging with the other academic staff involved in teaching the different subjects of Software Engineering to develop new programs. The programs currently being discussed include:

- a) BEng Software and Electronic Systems Engineering

- b) Bachelor of Science in Systems Engineering
- c) Bachelor of Science in Embedded Software Engineering

The department has 2 PhD staff, and 2 PhD students. It is hoped that one PhD student and one master student will complete their studies early 2023. In the department, research was carried out and some publications made in the tier publication.

6.8.3 Department of Computer Science

The Department of Computer Science aspires to be the university's greatest computing and technology centre that is recognized nationally and internationally for excellence in teaching and research approach. The department offers both undergraduate and graduate degree programs in Computer Science. The undergraduate programs are taught full-time at the town campus, and postgraduate programs taught on weekends.

Departmental Achievements:

- a. Submitted over 5 papers for publications in the international journals and conferences
- b. Supported selected academic staff to attend an International course in GIS for global health – KIT Royal Tropical Institute, Amsterdam, Netherlands.

- c. First ever PhD female academic staff Dr. Deborah Natumanya received her PhD in computing.
- d. The Department continues to receive Government funds (Loan Scheme - Higher Education Students Financing Board) through which a number of students in year one will be sponsored.

6.8.3.1 MUST-UCoBS-IUC University Linkage with the FCI

Under the MUST-UCoBS-IUC University Partnership, Project 6 has planned to equip interested Faculty of Computing and Informatics and Faculty of Applied Sciences staff members and Postgraduate students with skills in data analytics, diagnostic analytics and predictive analytics through a short training. This is in line with the subproject thematic areas of data management, Data Analytics, Artificial Intelligence (AI) and Machine Learning (ML).

The short training is to be conducted by one of the project 6 partners; Prof. Dr. Koen Vanhoof a leader of the Business informatics research group from the Gewoon Hoogleraar Beleids informatica, Universiteit Hasselt - Campus Diepenbeek, in Belgium. This physical short training is not only to provide skills on Data, Diagnostics, and Predictive Analytics but also to support the department of computer science in kick starting the Data science curriculum design as well as a

research seminar for Masters and PhD students in the Data Science Research Area. The short training is planned to run from January 30, 2023 until February 3, 2023 at the UCoBS PSU building in the town campus.

The sub project is also supporting Faculty of Computing and Informatics staff to train in variety of short courses in line with computing through the Udeemy online academic platform (as stated under short courses above). Udeemy is an online learning and teaching marketplace with over 204000 courses and 54 million students. Staff members will learn programming, marketing, data science and more courses as per the field of interest. Beneficiaries are Richard Ntwari, Aggrey Obbo and Francis Kamuganga.

Final year students in the department successfully defended their final year research projects and the best students participated in FCI Exhibition awards. The department has 4 PhD staff and, 9 PhD students. Seven of these are soon defending their work, while two are collecting data. This will strengthen research and innovation in the department.

Departmental Future Plans

The academic staff in the department still engage with the rest of the staff in the faculty to develop new programs. Among the programs currently being discussed are:

- a) BSc Data Science
- b) Bachelor of Science in Media Computing
- c) MSc Data Science
- d) MSc Information Security and Cyber Forensics

6.8.4 Computing Services Unit

The Computing Services Unit is mandated to maintain and manage all ICT infrastructure and services to enable teaching, learning, research, communication, collaboration and community engagement at Mbarara University of Science and Technology. The unit also provides continuous training and support to staff and students on the use of ICT.

In March 2022, Computing Services staff did not out source expertise to put right the vandalized equipment in Science block, but had to repair the networking device themselves as indicated below:



Computer Technicians at work

6.8.4.1 MUSTCyber School- MasterCard Foundation eLearning Initiative

A presentation about the project was made. Some of the few highlights from the presentation included:

- a) A 5-year MoU was signed with Cyberschool Technology Solutions.
- b) The project is meant to boost university capacity of employability of students. That staff would also benefit. A baseline survey with students and selected administrative staff was done as well as formulation of

MUST Project Steering Committee.

- c) At university level students can benefit in self-employment or get jobs.

The planned project has objectives that would guide them which are:

- a) To support Higher Education Institutions to successfully implement eLearning – thus increasing resilience against COVID-19.
- b) To empower learners with entrepreneurship and work readiness skills to match the needs.

The intervention areas were also presented. It was reported among the interventions:

- a) that there would be training of instructors in digital pedagogy and instructional design, etc;
- b) increase access to affordable internet;
- c) that devices such as laptops would be sold at UGX120,000 to be paid within one year in installments by students.

Staff were encouraged to fill a baseline survey which had been designed, so that the activity could be done soon.

6.8.5 Software Incubation and Innovations Unit

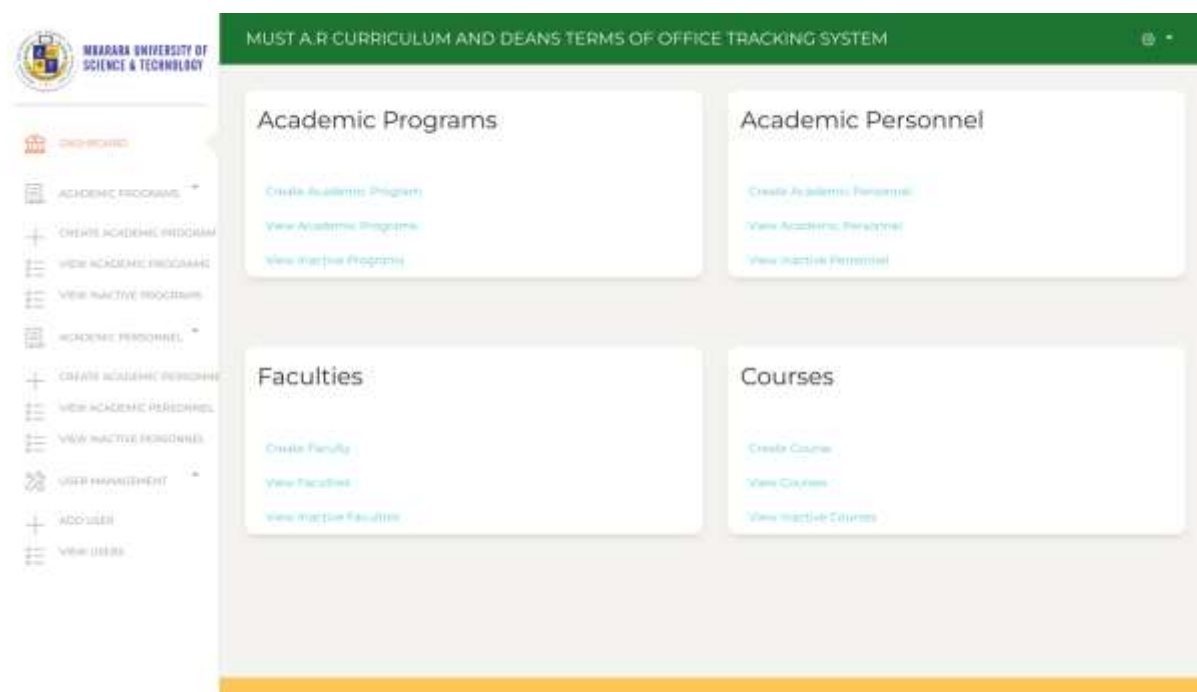
The unit continues to mentor students on how to initiate a number of innovations. Staff also engage in

innovations and incubation. A number of activities of on-going research innovations and partnerships include:

6.8.6 MUST-Curriculum Tracking System

The Software Incubation and Innovations Unit completed the development of a web-based system to track curriculum and terms of office for deans. The Academic Registrar team has started using this system and the Software Incubation and Innovations Unit will continue to provide technical support to maintain the system.

The system is now available at: <http://artracker.must.ac.ug/>



Screenshot of MUST- Curriculum Tracking system

The components of the system include:

- a) Tracking curriculum
- b) Tracking terms of office for deans, deputy deans and administrators
- c) Notifying academic registrar's department by email on programs that are expiring

Notifying academic registrar department by email on program curricula that are projects, whereby the best projects are showcased and the best of the best presenters are given awards. The 8th FCI Awards ceremony was held from the University Library at Kihumuro Main Campus, Mbarara. This was to showcase how innovation and

6.10 Google Developer Student Club

GDSC MUST is an innovative academic club aimed at helping students improve their hands on skills. This has enabled the students gain self-confidence because of frequent interactions with numerous students and people already working in the field of technology.

6.10.1 Innovation Track

Second Data Science for Health Discovery and Innovation in Africa (DS-I-Africa) Consortium meeting from October 29 to November 3 2022, in Cape Town, South Africa. Two FCI staff members, Dr. Fred Kaggwa and Mr. Rogers Mwavu attended the 2nd Data Science for Health Discovery and Innovation in

technology can lead to Socio-economic Empowerment and Transformation.

However, due to financial constraints, it was not possible for FCI to hold the exhibitions alone. The faculty combined with Faculty of Applied Sciences and Technology (FAST) and the event was successful.

The event took place two days after the students had presented their final year research projects. Many innovative projects were good but the best ones were identified to be showcased.

A number of winning teams after the judges' assessment were given plaques. All participating groups were given certificates.

Africa (DS-I-Africa). This was the first in-person Consortium meeting from October 29 to November 3rd 2022, in Cape Town, South Africa. The event attracted over 300 scientists and stakeholders from across Africa and internationally to exchange ideas and showcase their work in data science and health.

Dr. Kaggwa presented on behalf of MUST data science research hub (MUDSReH) on 1st November 2022, on a theme of cross-border data sharing to harness data science for health in Africa. This theme was moderated by Dr Brad Newsome, the programme officer (NIH/FIC). Fred talked about the systems that drive data sharing, and he gave an extended talk about Physionet which is retrospectively collected medical data that has the opportunity to improve patient care

through knowledge discovery and algorithm development. It was concluded that broad reuse of medical data is desirable for the

greatest public good, but data sharing must be done in a manner which protects patient privacy.



Dr. Kaggwa giving his presentation

Mr Rogers Mwavu emerged as a Runners up to DS-I Africa project: MUDSRH) andHouriiyahTegally (DS-I Africa project: INFORM Africa) Congratulations to Mr. Mwavu.



Mr. Mwavu during his presentation

Mr. Mwavu was also selected to be part of the African Bio-Imaging Consortium (ABIC) which was founded as a catalyst to empower and grow life science research in Africa by addressing needs for training, education, and accessibility of microscopy technologies. As a community-driven and community-guided initiative, ABIC seeks to expand the role microscopy plays in biomedical research on the continent — helping embrace imaging approaches in solving research questions of importance to the African continent. As a centralized hub, the ABIC network provides an opportunity for African biologists, microscopists, and data scientists to foster new partnerships and form a unified voice of the community.



Mr. Mwavu and team attentively listening to a presentation

6.11 Participation in Hackathon

Students participated in Hackathon, from where their challenges, skills have been improved. They have also been able to embrace teamwork which acted as a breakthrough for the students to always work as a team even after the GDSC sessions at MUST. An example of hands on is as indicated hereunder:



6.11.1 Developer Student Clubs Lead

Developer Student Clubs (DSC) are community groups for students from any academic background in their undergraduate or graduate term. By joining a DSC, students build their professional and personal network, get access to Google developer resources, and work together to build solutions for local problems in a peer-to-peer learning environment.

The Faculty is encouraging more students to undertake a number of training sessions, given opportunity, to be able to cultivate the ICT talent ecosystem to thrive. The student representative for MUST Academy with Huawei Uganda got a training as part of preparations for the Regional Finals.

6.12 Research Output

The trend of research at the Faculty is changing as more senior members of staff acquire higher qualifications and more expertise. This is greatly boosting the research capacity.

6.13 Publications Grants and Conferences

a) Peer reviewed journal publications and their Cite

Staff published a number of journal papers which include the following:

- i) Katusiime, J., Tumuhimbise, W., Rwambuka Mugenyi, G., Kobutungi, P., Mugaba, A., Zender, R., Pinkwart, N. and Musiimenta, A., 2022. The role of mobile health technologies in promoting COVID-19 prevention: **A narrative review of intervention effectiveness and adoption.** *Digital Health*, 8, p.20552076221131146.
- ii) Musiimenta, A., Tumuhimbise, W., Atukunda, E.C., Mugaba, A.T., Asasira, J., Katusiime, J., Zender, R., Pinkwart, N., Mugenyi, G.R. and Haberer, J.E., 2022. **A mobile health app may improve maternal and child health knowledge and practices among rural women with limited education in Uganda: a pilot randomized controlled trial.** *JAMIA open*, 5(4), p.ooac081.
- iii) Tumuhimbise, W., Atwine, D., Kaggwa, F. and Musiimenta, A., 2022. **Enhancing tuberculosis care in southwestern Uganda: Facilitators and barriers to utilizing mobile health technologies.** *Global Implementation Research and Applications*, pp.1-11.
- iv) Musiimenta A, Tumuhimbise W, Atukunda EC, Ayebaza S, Kobutungi P, Mugaba AT, Asasira J, Mugenyi GR, Katusiime J, Zender R, Pinkwart N, Haberer JE. (2022). **Challenges in accessing maternal and child health services during COVID-19 and the potential role of social networking technologies.** *Digital Health*, DOI: 10.1177/20552076221086769
- v) Natumanya, D. and Nabaasa, E. 2022. **Lecturers Perceptions on Usage and Security of Examination modes of Assessment used in Universities. A case study of Mbarara and Bishop Stuart Universities in Uganda.** *International Journal of Information Technology, Communications and Convergence* (2022).

vi) Link:

<https://www.inderscience.com/info/ingeneral/forthcoming.php?jcode=ijitcc>

- vii) Natumanya, D. and Nabaasa, E. (2022) “**An Electronic Examinations Framework with Electronic Free Handwriting**”, *Indonesian Journal of Innovation and Applied Sciences (IJIAS)*, 2(2), pp. 88-92. doi: 10.47540/ijias.v2i2.512.

b) The Grant won in the last quarter of 2022

Project title: A Novel Community-based Mobile Health Intervention to Support Motherhood among Vulnerable Adolescents and Young Mothers in Uganda

Funder: The Germany Ministry of Education and Research

Duration: 2022-Oct.2023.

The research team included:

- i) PD Dr. Stefanie Theuring, Institute of Tropical Medicine and International Health, Charité- Universitätsmedizin Berlin, Germany
- ii) Dr. Angella Musiimenta, Faculty of Computing and Informatics, MUST, Uganda
- iii) Dr. Wilson Tumuhimbise, Faculty of Computing and Informatics, MUST, Uganda.
- iv) Prof. John Rubaihayo, School of Health Science, Mountains of the Moon University, Fort Portal, Uganda
- v) Rebecca Nuwematsiko, School of Public Health, Makerere University, Uganda.

c) The conferences attended in the last quarter of 2022

Attended the WAITRO Summit 2022 from Nov 24 to 26, 2022 in Cape Town, South Africa. WAITRO is a short form for the World Association of Industrial and Technology Research Organizations. Inspired by the Sustainable Development Goal 17 “Partnerships for the Goals”, the WAITRO Summit is a global event that provides a space for networking, learning and knowledge exchange.

Growth and Development of the Faculty

FCI continues to grow. The faculty is slated to unveil its new building in Kihumuro main campus.

Both academic and administrative staff did commendable work aimed at enhancing students’ progress.

6.14 Other Achievements

6.14.1 Completion of PhDs

Three PhD students successfully completed their research study in Computing:

- a) **Dr. Deborah Natumanya** completed her PhD Program. Her topic was *A Framework and Algorithms for an Electronic Examination Process with free Hand Writing.*
- b) **Dr. Andrew Lukyamuzi** completed his PhD program. His study topic was *Application of Machine Learning in Tracking Food Insecurity in Low Twitting Communities.*
- c) **Dr. Wilson Tumuhimbise** completed his PhD Program. His topic was *A Mobile Health Framework for Public Private Mix in Tuberculosis Care and Prevention in South Western Uganda.*

6.14.2 Women in Natural Science (WiNS) Fellowship

Dr. Deborah Natumanya attended the WiNS programme which was scheduled for six weeks from November 1, 2022 to December 11, 2022. During the period she participated in a grant proposal writing which was aimed at coming up with a computing intervention that would enable mothers on low resources to improve their postpartum self-care with the aim of reducing maternal mortality rates in developing countries. She also attended the WiNS conference where she was able to share findings from her on-going research.

6.14.3 FCI Staff member awarded the Microsoft Research Fellowship

Tezira Wanyana, a PhD candidate in the Adaptive and Cognitive Systems (ACS) Laboratory at the University

of Cape Town and also an assistant lecturer in the department of Computer Science, Faculty of Computing and Informatics at Mbarara University of Science and Technology was recently awarded the Microsoft Research Fellowship. 36 eligible PhD students from universities globally, who are pursuing research that is aligned with the Microsoft areas of focus were awarded this prestigious fellowship and Tezira is one of them. Tezira's interests lie in intelligent systems architectures. Her current research focuses on combining data driven and knowledge driven AI techniques in an architecture for designing intelligent agents for knowledge discovery and evolution (KDE) in different domains. The KDE architecture is applicable in dynamic physical sensor-based systems which acquire continuous observations that may contain new patterns which are worth following

up. Machine learning is applied in perception and pattern detection while Bayesian networks and ontologies are used in theory construction to explain the situations detected in the patterns. Click the link below for more information about the award and for the official announcement; <https://www.microsoft.com/en-us/research/academic-program/phd-fellowship>

6.13.4 Work Load Analysis

Work load analysis was done and communicated to the academic staff ready for the start of Semester II of 2021/2022 academic year. Staff were able to analyze it and share comments before a final document was submitted.

- i. The current staff pursuing PhD Programmes include:

	Name	Expected Year of completion
1	Mr. Richard Ntwari	2023
2	Mr. Aggrey Obbo	2022
3	Ms. Ruth Nyakato	2022
4	Mr. David Bamutura	2023
5	Mr. AdonesRukundo	2023
6	Mr. Martin Ngobye	2023
7	Mr. Francis Kamuganga	2023
8	Ms. Moreen Kabarungi	2023
9	Mr. Rogers Mwavu	2023
10	Mr. Yonasi Safari	2024
11	Mr. Richard Kimera	2024
12	Ms. Josephine Ayebare	2024

6.13.5 Supervision Tool

The tool was developed and presented during the Faculty Examiners Board meeting. It was agreed that the tool be used during Semester 2, 2021/2022 academic year. This was agreed by the Heads of Department. The Quality Assurance coordinator was requested to also follow up the progress when implementation starts.

6.13.6 Staff Development

A number of staff were enthusiastic in furthering their studies to gain more knowledge and skills.

6.13.7 Current Collaborations and Partnership

Over time the Faculty has initiated a number of collaborations/partnerships aimed at developing more skills to both students and staff. In February 2022, Representatives from Milima Academy visited the Faculty and trained some staff in Cyber Security and Cyber Defence.

It is worth noting that Milima Cyber Academy has partnered with

MUST to deliver a subsidized training program for IT professionals, Cyber-security professionals and technology enthusiasts to acquire professional skills and certification in Cyber-security. Some of the running collaborations/partnerships include:

6.14 Visitors

The faculty hosted some visitors during the period July to December 2022. These include:

S/N	Name	Address	Purpose of the visit
1	Prof. Stephen Kimani Director, ICT	Jomo Kenyatta University of Agric. & Techn. (JKUAT) P O Box 62000 Nairobi Kenya	Collaborative meeting within the Africa-ai- Japan Project
2	Prof. Robert Kinyua DVC	Prof. Robert Kinyua DVC, JKUAT	Collaborative meeting within the Africa-ai- Japan Project
3	Prof. Daniel W Sile Dean	Food, Agric. & Technology JKUAT	Consultative meeting
4	Dr. Shohei Aoki	JKUAT.JICA Africa-ai- Japan	
5	Mai Toda	Africa-ai-Japan	JICA Project Collaborative meeting
6	Dr. Andrew Okello	Somali International University	Introduce SIU Occasional Students to study

6.15 Partnerships with MUST

The university signed an MoU with Somali International University (SIU). Selected Somali students continue to complete their undergraduate programs in Computer Science. Three Somali students were admitted to complete their 3rd year of Bachelor of Computer Science at MUST in 2022.

6.16 Future Plans

a) Computer Science Department

- i) Write and Start postgraduate programs in Cyber security and Forensics Sciences.
- ii) Recruit more qualified academic staff to boost the department in terms of grant writing and publications
- iii) Develop a research agenda for the department
- iv) Establish MUST-ICT consultancy to provide specialized services to MUST and other organizations, to boost the income of the department
- v) Develop curricula for both Bachelors and Masters in Data Science.

b) Software and Informatics Engineering Department

- i) The department is housing BSc Software Engineering program
- ii) The department will continue engaging into research grant writing and also look for more possible collaborators like Google and Microsoft.
- iii) The Department will continue to publish in reviewed journals.
- iv) The department plans to maintain the established collaborations and establish even more others.

The department staff is currently engaging with the rest of the staff in the faculty involved in teaching

the different courses of Software Engineering to develop new programs. Among the programs currently being discussed are:

- (a) BEng Software and Electronic Systems Engineering
- (b) Bachelor of Science in Systems Engineering
- (c) Bachelor of Science in Embedded Software Engineering

c) Information Technology Department

- i) Write and Start programs in Computer Graphics and Applied Information Technologies for Agriculture, Construction, Home and Office Management etc.
- ii) Promote and Recruit more qualified academic staff to boost the department in terms of grant writing and publications
- iii) Develop a research agenda for the department
- iv) Work hand-in-hand with the rest of the Faculty, establish MUST-ICT consultancy to provide specialised services to MUST and other organisations, to boost the income of the department.

6.17 Mitigation Measures

- a) The Faculty suggests that in order to achieve and continue to use online platforms,

university management should invest heavily in and improve infrastructure. They should increase internet bandwidth and also plan to buy a new generator.

- b) The faculty tries to improvise much as it compromises some activities.
- c) It is hoped that once the faculty building is completed

both teaching and office space would be solved with an assumption that it will be furnished.

6.18 Conclusion

The Faculty continues to work hard to ensure that there is knowledge enhancement and development for both students and staff for the growth of the University.

7. Faculty of Business and Management Sciences

7.1 Background Information

The Faculty of Business and Management Sciences was initially established in March 2013 as an Institute of Management Sciences (IMS) which later became Faculty of Business and Management Sciences (FoBMS) whose mandate is to serve as a Centre of excellence in business management and professional development in Uganda and the region i.e, Rwanda, Tanzania, Burundi, Kenya and South Sudan.

The FoBMS seeks to meet Uganda's needs, as a gateway institution both within the East African region and globally. It serves as a hub for local and global talent, business research, business-university partnerships, global leadership, local entrepreneurship and innovation. The distinctiveness of FoBMS is its focus on meeting the management needs of local, public and private organizations within the dynamics global economy. Building on MUST's core mandate of training, research and outreach programmes, the Faculty of Business and Management Sciences strives to be a complete global management hub, educating the world as well as innovating for the world through training and research. The FoBMS core themes center on interdisciplinary clusters in management, globalization, innovation, agribusiness, food security and entrepreneurship, with

focus on specific sectors and issues salient for Africa in particular.

Goal: To produce graduates and conduct high quality research and innovations in Business and Management Sciences.

7.2 Strategic Objectives

In order to achieve the desired goals, the Faculty of Business and Management Sciences will require a sustainable implementation of a range of the following strategic Objectives:

- a) To offer quality training, knowledge and skills transfer in Business and Management Sciences in line with the labour needs of the country
- b) To produce graduates with relevant skills in Business and Management Sciences
- c) To establish a center for academic and professionalism, high quality research and innovations in Business and Management Sciences
- d) To enhance the quality and quantity of research and innovation output in Business and Management Sciences
- e) To enhance knowledge, transfer partnerships among the University, community and the industry
- f) To create an environment that nurtures confidence among the

- Faculty graduates through career guidance and internship programs
- g) To offer tailor-made Business and Management training courses to private and public Institutions.

7.3 Student Numbers in Various Programmes

Faculty of Business and Management Sciences is among the Faculties at MUST that enroll students in big numbers as illustrated in table 1 below;

Table 26: Student Numbers

S/ N	Programme	No of Students per Programme		
		Male	Female	Total
01	Bachelor of Business Administration (BBA)	124	110	234
02	Bachelor of Science in Accounting and Finance (BSAF)	180	149	329
03	Bachelor of Science in Purchase and supply Chain Management (BPSCM)	165	180	345
04	Bachelor of Science in Economics	20	19	39
05	Masters of Business Administration (MBA) 2 Years	38	26	64
06	Doctor of Philosophy (PhD) 3 Years	12	08	20
		539	492	
	Total number of students enrolled in 2022			1031

Source: FoBMS 2022 Reports

7.4 FoBMS Staff Status

7.4.1 Categories of staff

The Faculty has the following categories of staff:

Table 27: Staff Numbers

	Staff Numbers				
Staff Levels	Male	Female	Total	Staff Required	Staffing gap
Professors	-	-	00	02	02
Associate Professors	-	-	00	06	06
Senior Lecturers	02	-	02	08	06
Lecturers	14	03	17	20	03
Assistant Lecturers	02	01	03	07	04

Teaching Assistant	00	01	01	05	04
Part-time Teaching staff	02	06	08	09	01
Non-Teaching Staff	01	05	06	08	02
Total	20	18	38	65	27

7.4.2 Academic Staff Pursuing PhD Programme

Scholar	Gender	Expected completion date
a) Mr. Kamusaala Babi David – MUST	M	2026
b) Mr. Atwiine Daniel Wanito – MUST	M	2026
c) Mr. Mujuni Perez – MUST (Submitted for external examination)	M	2023
d) Mr. Bwireh Geoffrey- University of Nairobi	M	2025
e) Mr. Nsengiyunva John Bosco – University of Nairobi	M	2024
f) Mr. Kahangane Geoffrey – MUST	M	2026
g) Mr. Agume Anthony- University of Nairobi	M	2024
h) Mr. Arthur Nuwagaba – University of Nairobi	M	2023
i) Ms Naster Tumwebembeire - MUST	F	2025
j) Mr. Alex Twinomuhwezi - MUST	M	2025

7.4.3 Academic Staff Position

FoBMS is still under staffed by 42%, the percentage increases to 54%. This short fall has been there for some time which may lead to deteriorating service delivery if not curbed. The solution should be to promote academic staff overdue and also recruit more permanent staff

7.4.4 PhD holders

Out of 31 academic staff, the faculty has seven PhD holders namely

- a) Dr. Nsambu Kijjambu
Frederick - Male
- b) Dr. Ahimbisibwe Frank -
Male
- c) Dr. Tumuhimbiseh Manasseh
- Male
- d) Dr. Bakashaba Rennie - Male
- e) Dr. Sarah Nabachwa - Female
- f) Dr. John Kule Muhunga
Baguma - Male
- g) Dr. Wilbroad Aryatwijuka -
Male

This makes a 29.2% of the total full time academic staff available.

7.5. Teaching and Learning

7.5.1 Teaching and Learning Infrastructure

The Faculty is having a home with mainly three levels; Level one and

7.5.4 Postgraduate Programmes

- a) Masters of Business
Administration (MBA -2years),
with specializations in
Accounting and Finance,

two are lecture rooms and the third level for offices for both academic and non-academic staff.

7.5.2 Departments

The Faculty has four Departments;

- a) Department of Accounting and
Finance
- b) Department of Human Resource
Management
- c) Department of Procurement and
Marketing
- d) Department of Economics and
Entrepreneurship

7.5.3 Undergraduate Programmes (3 Years)

The Faculty offers the following undergraduate programmes:

- a) Bachelor of Business
Administration (BBA) with
specializations in Accounting,
Banking and Finance, Human
Resource Management,
Procurement and Marketing
- b) Bachelor of Science in
Accounting and Finance (BSAF)
- c) Bachelor of Science in
Procurement and Supplies Chain
Management (BPSCM)
- d) Bachelor of Science in
Economics

- Procurement, Human Resource
Management and Marketing
- b) Doctor of Philosophy (PhD) by
research (3 years)

7.5.5 Other undergraduate Planned Programme

Curriculum for the Bachelor of Science in Human Resource, a 3-year is under development.

7.5.6 Curricula Recently Re-Accredited by NCHE

National Council for Higher Education recently re-Accredited the following Programmes for the next five years and they are under implementation

- a) Bachelor of Science in Accounting and Finance (BSAF) (3 Years)
- b) Bachelor of Business Administration (BBA) with specializations in Accounting, Banking and Finance, Human Resource Management, Procurement and Marketing (3 Years)
- c) Masters of Business Administration (MBA), with specializations in Accounting and Finance, Procurement, Human Resource Management and Marketing (2 years)
- d) Doctor of Philosophy (PhD) (3 years)

7.5.7 Curriculum submitted to NCHE for re-accreditation

The Department of Marketing and Procurement through Academic Registrar has already submitted Curriculum for Bachelor of Science in Procurement and Supplies Chain

Management (BPSCM) 3 Years for re-accreditation.

7.5.8 Research Thematic Areas

Business and Management studies
Economics studies
Leadership and Governance
Human resource
Health financing
Finance and Accounting

7.5.9 Core Research Activities

The core curricular areas of the Faculty of Business and Management Sciences include Accounting & Finance, Business, Entrepreneurship, Marketing, Economics, Procurement, and Management Accounting and Organizational behavior.

Globalization — Specific areas of current and future research include: global financial flows and markets; globally networked firms; global and regional production networks; global climate change, global social and environmental movements; regional development; government regulation and policy; global non-governmental organizations; cross cultural interactions and transformations.

7.5.10 Community Engagement

To enable students to transform theories and concepts learnt in class into practice, the Faculty has Internship and Community Outreaches embedded in the curricula.

7.5.9 Resources Available to support Teaching

The Faculty has the following resources to ease learning and Teaching Environment:

- a) Faculty Resource Centre equipped with a good number of computers connected to internet (about 60 computers).
- b) A well-established University Library, one Mini-library and one Book Bank are always available with enough reading materials.
- c) Enough Lecture Rooms are available within the Faculty.
- d) Teaching aids and instructional materials like 06 projectors, whiteboards, and laptops for some staff members; among others.

7.6 Quality Assurance Mechanisms

In line with National Council for High Education (NCHE) guidelines, Faculty of Business and Management Sciences has adhered to most of the Quality Assurance Mechanisms to assess the Quality of programmes and courses, Quality of academic staff, Quality of teaching and learning experience, Quality in student assessment, Internal moderation, Quality in support services, Quality of resources and facilities, Quality of research and Quality programme review process. These include;

- a) Research Policy and Post graduate hand book documents
- b) Curriculum for each programme and policies regarding admission and retention of students.
- c) Examination regulations handbooks for both students and staff to guide on learning, teaching, assessment, student support, marking and examinations, plagiarism, cheating, instructions to examiners.
 - i) Faculty policy documents and codes of practice on curricula, equal opportunities etc.
 - ii) The Faculty has Quality Assurance committee to review Curriculum and programmes offered after every five years.
 - iii) The Faculty also conducts needs Assessment by consulting relevant stakeholders and other relevant parties on the programme/courses under review.

7.7 Research Output

Our researchers are at the leading edge of innovation where by more than 40 staff and postgraduate students are involved in fundamental and academic research. Also, Business incubation clinic (BIC), which acts as a collection point for ideas in the University from students, alumni and staff with viable business ideas to be nurtured, has greatly encouraged the development of entrepreneurs and supported business start-ups in Faculty. The Faculty also provides the knowledge,

environment and inspiration to all staff and students through experiential programmes, events and workshops. We also offer a Master of Business Administration for people wanting to develop the capabilities to effectively manage Businesses and capture value from innovation and research. The Faculty was also involved in research in the year 2022 where both postgraduate students and staff made more publications in international peer reviewed journals, google scholars and won Research Seed Grants.

7.8 Growth and Development of the Faculty

- a) The Faculty recorded an increase in access to higher education through introducing relevant programmes applicable to community development which has led to increase in student enrolment in academic year 2019/2020.
- b) The FoBMS is also glad to benefit from the collaboration between MUST and Hochschule-Mainz University of Applied Sciences in Germany on student/staff exchange where one of our MBA students got scholarship on student/staff exchange to study from Germany for about 4 months.
- c) The Faculty has registered tremendous increase in number

of staff with appropriate qualifications.

- d) There have been developments of relevant/demand driven academic programmes like Internship and community outreach programmes
- e) Number of students' enrollment increased by 15% in academic year 2019/2020 as new programmes were introduced to supplement revenue.
- f) Availability of appropriate learning Resources for students.
- g) The Faculty has been able to secure some scholarships like ADB to support our PhD students especially in Research
- h) The Faculty has been able to sign some MoUs with industry and other Institutions of higher learning.
- i) There has been an increase in number of postgraduate students' enrollment every year by 40%.

7.9 Collaborations/ Partnership

The Faculty has been able to collaborate with individuals and organizations in research related to Business and outside Business field. To solve current global challenges, interdisciplinary research approach becomes crucial. Currently, the Faculty has the following collaborations as it is illustrated in the table below:

Table 28: Collaboration/Partnership

Partner	Year established	Area of collaboration	Outcome	SDG addressed	NDPIII Alignment
Hochschule-Mainz University of applied sciences Germany	2018	a) Student/Staff exchange b) Research c) Community Engagements d) PhD Student enrollment	a) Students exchange and staff mobility b) Staff trained in quantitative methods e.g SPSS, Strata c) Three Post graduate students will be given scholarships to study every year.	SDG 4 - Quality Education; 17 –Partnerships for the goals	Programme 12: Human Capital Development
Uganda Technological and Management University (UTAMU), ACCA	2013 Renewed in 2020	PhD student enrollment	About 17 PhD students have graduated	SDG 4 - Quality Education; 17 –Partnerships for the goals	
		Accreditation of Accounting Courses	a) Course covered in Bachelor of Science in Accounting and Finance have been exempted b) Best Accounting students have been given Awards at least	SDG 4 - Quality Education; 17 –Partnerships for the goals	

Insurance Training College Institute of Banking and Financial Services University of Virginia Darden Business School			every year on graduation		
		Expert Engagement MoU Renewed	a) Academic outreach b) Professional skills gained	SDG 4 - Quality Education; 17 –Partnerships for the goals	
		Expert Engagement	c) Academic outreach d) Professional skills gained	SDG 4 - Quality Education; 17 –Partnerships for the goals	
		a) Research b) Community Engagements	Rural women were trained to make businesses	SDG 4 - Quality Education; 17 –Partnerships for the goals	
		a) Research b) Community Engagements	Rural People were trained to start up some small businesses	SDG 4 - Quality Education; 17 –Partnerships for the goals	

7.10 Innovation

With support from African Development Bank, through Private Sector Foundation Uganda, the Faculty established a Business Incubation Clinic (BIC), which acts as a collection point for ideas in the university from students, alumni and staff who may have viable business ideas to be nurtured. During the year the Faculty achieved the following;

- a) Enabled students to be job creators through BIC.
- b) Involvement industry and Community outreach in line with the University Mission.
- c) Offered specializations within certain fields of study.
- d) Conducted multidisciplinary trainings.

7.11 Future Plans

The Faculty has the following future plans

- a) To enhance partnerships and collaborations for improved services through resource mobilization and staff exchange.

- b) To develop new infrastructure like a big computer laboratory and internet for appropriate student facilities.
- c) To enhance learning management systems
- d) To increase funding for research and innovation through writing research grants, lobbying for government to increase funds for staff capacity development and also introduce short courses and new programmes to increase our revenues.
- e) To enforce pedagogical training for Academic staff
- f) To start up short courses that can generate more funds.
- g) To complete the review of the Faculty Strategic Plan
- h) To embark on creating more Academic Programmes for its expansion
- i) To put in place policies at the Faculty level i.e Faculty Research Policy/guide for both Undergraduate and post graduate students.

8. Faculty of Interdisciplinary Studies

8.1 Background

The Faculty of Interdisciplinary Studies promotes the interface between science, technology, innovation and community by undertaking interdisciplinary approaches to training and research. Undertaking interdisciplinary training improves the capacity of MUST to transfer science, technology and innovation for community development.

The Faculty mandate is to offer a crosscutting service course in Development Studies that is richly embedded in political economy to all undergraduate students in their first and second year. This year alone, the Faculty interfaced with about 2685 undergraduate students taking the political economy classes. All

academic programs offered in the Faculty are in line with the

National Development Plan and mainstream community based education training philosophy and approaches. The curricula are relevant and offer transferable skills through practical courses such as the Community Twinning Project for all undergraduate students in the Faculty and the Farm Attachment Training for the students undertaking training in agricultural livelihoods. The Faculty also oversees the University Farm which currently has about 99 heads of cattle in Rukindo. This farm is used for training and research purposes.

Goal

Produce graduates and conduct interdisciplinary research geared towards innovative interventions that address multifaceted societal needs.



8.2 Departments

The Faculty is strategically organized in the following departments of which some departments host academic programs and Courses:

- Department of Planning and Governance,
- Department of Human Development and Relational Sciences,
- Department of Environment and Livelihoods Support Systems,
- Department of Community Engagement and Service Learning,

8.3 Academic Programs

The Faculty has the following programs and courses offered:

- DVS/Service Course to the entire university (1st & 2nd year students),
- Bachelor of Science in Planning and Community Development,
- Bachelor of Science in Gender and Applied Women Health,
- Bachelor of Science in Agriculture and Livelihoods,
- Post Graduate Diploma in Criminology,
- Masters of Arts in Developments Studies,
- Masters of Arts in Conflict Analysis and Inclusive Development,
- Masters of Arts in Governance and Planning,
- PhD in Development Studies.

8.3.1 Student Enrolment

Undergraduate Enrollment					
Programme	Year Of Study	Females	Males	Special Needs	Total
Bachelor of Science in Planning and Community Development	BPCD I	21	13	Nil	34
	II	14	11	Nil	25
	III	15	15	Nil	30
Bachelor of Science in Gender and Women Health	BGWH I	14	01	Nil	15
	II	12	02	Nil	14
	III	14	02	Nil	16
Bachelor of Science in Agriculture and Livelihoods	BSAL I	12	35	Nil	47
	II	8	21	Nil	29
	III	10	10	Nil	20
	IV	09	14	Nil	25
Total		129	124	Nil	255

Post Graduate Enrollment					
Masters in Development Studies Masters in Conflict Analysis and Inclusive Development Masters in Governance and Planning Post Graduate Diploma in Criminology PhD Total Grand Total	MADS I	00	01	Nil	01
	MADS II	02	04	Nil	06
	MCAID I				Nil
	MCAID II				09
	MALGP 1	01	01		02
	MALGP 1I	01	01		02
	PGD.C 1				Nil
		19	24	Nil	43
		34	50	Nil	87
		168	174		345

8.4 Staff and Leadership Status

The leadership at the faculty is as follows:

- Dean- Dr. Rogers Bariyo
- Deputy Dean- Dr. Cleophas Karooma-Kansiime
- HoD- Planning and Governance: Prof. Roberts K. Muriisa
- HoD- Environment Livelihood and Support Systems: Dr. Ronald Twongyirwe
- HoD- Human Development and Relational Science: Dr. Clementia Neema Murembe
- Coordinator- Graduate Studies: Dr. Tom Ogwang,
- Coordinator- Service Course (Development Studies). Dr. Specioza Twinamasiko
- Faculty Administrator: Ms. Betty Namusoke Okumu

Table 29: Staff members and their respective departments

Department	Members of Staff	Gender	Highest qualification	TITLE
Planning & Governance	Prof. Roberts K Muriisa	M	PhD	Professor (HOD)
	Dr. Cleophas Karooma	F	PhD	Senior Lecturer (Deputy Dean)
	Dr. Rogers Bariyo	M	PhD	Senior Lecturer (Dean)

Human Development and Relational Sciences	Dr. Frank Ahimbisibwe	M	PhD	Senior Lecturer
	Dr. Tom Ogwang	M	PhD	Lecturer
	Mr. William Serufusa	M	MA	Lecturer
	Dr. Neema C. Murembe	F	PhD	Senior Lecturer (HOD)
	Dr. Viola N Nyakato	F	PhD	Senior Lecturer
	Dr. Nakazibwe Primrose	F	PhD	Lecturer
	Dr. Elizabeth Kemigisha	F	PhD	Lecturer
	Mrs. Wendo Mlahagwa Olema	F	MA	Senior Lecturer
	Ms. Jackline Tumuhairwe	F	BSc (Nursing)	Assistant Lecturer
	Mr. Valence Ngabo	M	MSc(QE)	Assistant Lecturer
Department of Environment & Livelihoods Support Systems	Dr. Specioza Twinamasiko	F	PhD	Assistant Lecturer
	Dr. Ronald Twongyirwe	M	PhD	Senior Lecturer (HoD)
	Dr. Charles Muchunguzi	M	PhD	Senior Lecturer
	Dr. Medard Twinamatsiko	M	PhD	Lecturer
	Dr. Prudence Kemigisha	F	PhD	Lecturer
	Mr. Odongo Hannington	M	MSC (Planning & Development)	Lecturer
	Ms. Barbara R Naggayi	F	MSc(Environmental Science)	Lecturer

Department of Community Engagement and Service Learning	Mr. Abel Arinaitwe Byarugaba	M	PhD. (Crop science)	Assistant Lecturer
	Mr. Peregrino Tumusingize	M	MSc (Animal Science)	Assistant Lecturer
	Mr. Elias Oyesiga	M	MSc. (Crop protection)	Assistant Lecturer
	Dr. Allan Kumakech	M	PhD	Part time Lecturer
	Ms. Tumuhimbise Immaculate	F	MA (DS)	Lecturer
	Mr. Ivan Jjooga	M	MSc (wild life health and Manageme nt)	Farm Manager/ Part time Lecturer
	Dr Catherine Tamale Ndagire	F	PhD (Applied Human Nutrition)	Part time Lecturer
	Dr. Specioza Twinamasiko	F	PhD	Asst. Lecturer
	Mr. Justus Asasira	M	MA	Part-time Lecturer

Summary of Academic Staff

S/No	Title	Female	Male	Total	Gaps to be filled
1	Professor	Nil	01	01	02
2	Associate professor	Nil	Nil	Nil	02
3	Senior lecturer	04	04	08	04
4	Lecturer	05	04	09	03
5	Assistant lecturer	02	04	06	04
6	Part-time lecturers	01	04	05	00
	Total	12	16	28	15

8.4. 1 Staff Undertaking Further Training

S/N	Name	Training level	Institution
1	Tumuhairwe Jackline	MPH	MUST
2	Wendo Olema Mlahagwa	PhD	MUST
3	Hannington J. Odongo	PhD	MUST
4	Sserufusa William	PhD	MUST
5	Tumuhimbise Immaculate	PhD	MUST
6	Elias Oyesiga	PhD	Cranfield University-UK

8.4.2 Research Priority areas per Department

a) Planning and Governance, Human Development and Relational Sciences, Community Engagement and Service Learning

- i) Governance
- ii) Planning
- iii) Public Sector Reforms
- iv) Service Delivery
- v) Conflict Studies
- vi) Human Resource Management
- vii) Teenage and Adolescent Reproductive health
- viii) Gender
- ix) Indigenous Studies
- x) HIV/AIDS
- xi) Natural Resources Management
- xii) Land Governance and Development
- xiii) Migration and Migrant's security; Refugees, IDPS, return, and development displacements
- xiv) Enhancing institutional efficiency and service delivery
- xv) Commercialization of agriculture with a pro-poor growth and value addition agenda
- xvi) Political Economy of Africa
- xvii) Political Economy of Uganda
- xviii) International Political Economy
- xix) Citizenry
- xx) Professionalism
- xxi) Globalization
- xxii) Entrepreneurship
- xxiii) Human Rights,
- xxiv) Socio cultural practices,
- xxv) Family relations and sexual and gender based violence.

b) Environment and Livelihoods Support Systems

i) Food Science

- Food processing and product development
- Food systems analysis
- Food and nutrition security

ii) Soil Science, Environmental Science and Management and Environmental Engineering

- Soil and water conservation
- Soil fertility and plant nutrition
- Rangeland ecology and management (livestock production and management systems, antimicrobial resistance)
- Waste management
- Water quality and treatment
- Climate Change (adaptation, resilience, mitigation co-benefits)
- Governance and Sustainable Cities (urban ecology)
- Natural resource governance and management (benefit sharing, human-wildlife conflict, indigenous people, integrated conservation, natural resource curse debates, extractive industries – oil and gold)
- Land use and land cover change (e.g. urban sprawl, deforestation, wetland erosion) and relationship with environmental degradation

iii) Crop Science

- Crop pest and disease surveillance and management
- Plant breeding (for management of plant diseases)
- Annual and perennial crops agronomy
- Value addition and market studies
- Aflatoxin detection and management in crop value chain, animal products and feeds
- Pesticide toxicity studies

iv) Extension, Farm management and Livelihoods

- Smallholder Vulnerability and Resilience
- Governance and Farmer Resilience
- Extension Service Models and Governance
- Multi-Stakeholder Platform, Farmer Values and Needs
- Risk and Farm Planning

- Urban farming (prospects and challenges for the urban poor livelihoods)

v) Animal science, production and marketing

- Livestock production systems and environmental interactions
- Livestock products handling, marketing and consumption studies
- Animal nutrition and feed technologies
- Livestock farm management decision-making processes and sustainability
- Animal breeding and reproductive efficiency management
- Animal disease investigation and management

8.5 Non Academic Staff

Non-Teaching Staff	Members of Staff	Highest Qualification	Title
	Ms. Betty Namusoke Okumu	BSES	Faculty Administrator
	Ms Catherine Nafula	BBA	Finance Officer
	Mr. Frank Mutungi	Certificate (Accountancy)	Clerical officer
	Ms. Twikirize Winfred	PGD(DPAM)	Personal Secretary II
	Mr. John W. Kagaba	MMS	I/C Resource Centre
	Mr. Alex Kiiza Karemire	BBA	Driver
	Ms. Edrida Kabonesa		Messenger

Summary of Non Academic Staff

S/NO	Title	Female	Male	Total	Gaps to be filled
1	Administrative staff	02	02	04	00
2	Office attendant	01	Nil	01	01
3	Lab attendant	00	01	01	01
4	Driver	00	01	01	01
	Total	03	03	06	03

8.6 Quality Assurance Mechanism

The Faculty implements a number of quality assurance mechanism as follows:

- a) The Faculty ensures that all examinations papers are

moderated by the respective departments before they are administered,

- b) The Faculty conducts regular meetings such as academic meetings, departmental

meetings and management meetings which are held with heads of departments and coordinators for different academic activities,

- c) At the end of every academic year, the Faculty engages external examiners who are appointed by the Academic Registrar,
- d) Class attendance lists are emphasized in the Faculty,
- e) All post graduate dissertations are externally examined and students are required to defend their thesis/dissertations during the viva voce examination,
- f) The Faculty examination processes follow the University Examination Regulations,
- g) Every semester, the Faculty conducts a workload analysis for every lecturer to ensure there is equity and fair distribution of tasks carried out in the semester and all the year around,
- h) The Faculty promotes the interface between science, technology, innovation and community by undertaking interdisciplinary approaches and this raises the capacity of MUST to transfer science, technology and innovation for community development.

8.7 Growth and Development

The Faculty is experiencing a growing research and grant profile. Members of academic staff have attracted prestigious grants and

collaborations from a wide range of local and international academic institutions. Specifically, we recognize the continued support of VLIR-UOS under its support for partnerships between Universities and University Colleges in Flanders (Belgium). In addition, staff are increasingly engaged in academic writing which has resulted in a number of peer reviewed publications.

8.7.1 University Farm

Since 2014, the Faculty of Interdisciplinary Studies took over the management of the University farm as a teaching facility (field laboratory) for students offering Bachelor of Science in Agricultural Livelihoods and Farm production of which in 2020 was revised and reaccredited by NCHE as Bachelor of Science in Agriculture and Livelihoods. The farm is set to enable students acquire skills in the scientific fields of Animal science (health and production), Crop science, Soil science, Agricultural Engineering/mechanization, Farm enterprise Development and innovations management, Environmental related science (climate smart Agriculture and resilience) as well as Food science. With the support of Partners such as SNV and OWC/NAADS, the Faculty intends to transform this farm a Modern Dairy Farm for teaching and research. The University farm operations are under direct supervision of the Department of

Environment and Livelihoods Support Systems assisted by the FIS-Dean's appointed Farm committee in making major strategic and tactical decisions. The farm has two sections currently of Animal and Crop section, all headed by the Farm Manager. The Farm Manager is technically backstopped by the Animal scientist and Crop Scientists (Lecturers) at FIS, who are also members of the Farm committee. The Farm has made achievements in both sections in regard to teaching, research and commercial orientation, namely;

8.7.1.1 Crop Section

Agricultural training, demonstration and research is a very important component in answering complex and interrelated production and productivity questions faced by majority of farmers in Uganda. In recognition of this need, the Department of Environment and livelihood support systems, has an integrated training component that looks at producing practical oriented agricultural professionals to address farmers' challenges. For the period

of 2018-2020, the students of BSAL participated in production of various crops with focus on annual crops cabbage, tomatoes, egg plants, green pepper as parts of hands on learning at the farm. The learning was conducted as a student project in which the students would go to the farm every week with facilitators for guidance on various agronomic operations and crop disease diagnostics (pathology) to ensure improved productivity. The Crop section at mile-6 (Kihumuro farm site) established a standing mini green house for production of horticultural crops in a controlled environment. The crop sites enabled year 4 students of 2018/2020 and 2019/2020 to conduct their Experimental Research designs as part of their research projects and many participating students in the growing of crops learnt the recording of events and Agribusiness in form of crop market price establishment and marketing their harvests. The Pictures below highlight some of the activities under the crop production and agronomic skills.



8.7.1.2 Animal Section

The University farm has been keeping Boran cattle breed mainly with small fraction of Ankole cattle until from July 2019 when Artificial insemination was introduced to upgrade part of the herd towards dairy production.



The Animal section exists at Rukindo farm site where the total herd size is 99 heads of cattle, both dairy crossbreeds (F1-A. I products) at Rukindo farm site. The Rukindo farm site was developed in 2019 after clearing the bush, fencing, chasing way encroachers, cattle crush and kraal construction, farm house partitioning and purchase of uni-pot, 30 boran cattle (cows and heifers) were shifted there in February 2020 purposely to upgrade to dairy. In the same vein, the remaining herd in Kihumuro farm site with kraal and farm house near Administration block was shifted to Rukindo Farm site to pave way for new building constructions and compound beautifications. This followed the construction of semi-permanent structures for staff housing and kraal. The pictures below highlight some of the achievements indicated above.

Plate 1: Artificial insemination service products:



Pasture demonstration plots establishment

Pasture demonstration plots were previously established at mile-6 and later at Rukindo farm site. These plots were established by students guided by the lecturer and Farm manager and the pasture species include Sugar Napier, Braceriaomulato, Chlorisgayana, Lablab and Centrocema. These were harvested and Napier used in silage making demonstration to students at Rukindo farm site and currently the Napier plot exists at Rukindo. Plates below highlighting these activities.

Plate 2: The Napier grass established by students at Kihumuro farm site and later harvested for planting at Rukindo and for silage making practical sessions



Student learning

Since February 2017 when the pioneer BSAL class started learning a course of Farm Animal production and management in their 2nd, semester, students have been accessing the University farm for practical learning sessions with Animal science lectures for hands-on in Livestock management practices including castration, dehorning, hoof trimming, ear tagging, restraint and casting of animals. Also, hands-on in Animal health and disease diagnostics, treatment of animals, Acaricide mixing and dipping of animals, Animal nutrition and Animal breeding including heat detection, artificial insemination procedure and pregnancy diagnosis have been conducted. Pictures highlighting these activities where students were involved are as below;

Plate 3: Practical demonstration for students in casting animals and castration



Plate 4: A student practically learning the procedure of inseminating a cow.



The students of BSAL organized an agricultural exhibition and the Guest of Honour was the Minister of Agriculture, Animal Industry and Fisheries, Honourable Frank Tumwebaze. During his speech, the Minister pledged, on behalf of his Ministry, to donate a tractor to the Faculty to aid in the ploughing of the land for agriculture purposes for the students.

In addition, he also promised that his ministry would assist in the setting of an agricultural laboratory for the students by providing some needed equipment. He left it to the University to come up with a write-up which it would present to the Ministry for the processes to begin.

8.8 Collaboration /Partnership

The Faculty has collaborations with the following universities, Institutions and Organizations who are supporting research and training:

- a) University of Virginia - PhD supervision and study abroad program
- b) University of Reading – research, capacity building partnership and study abroad program
- c) University of Ghent – PhD training and Capacity Building
- d) University of Oldenburg – PhD training and Research
- e) Free University of Brussels – Research and joint supervision
- f) University of Santiago – study abroad program
- g) Lund University – SRH training
- h) University of Cambridge, research partnership

- i) KU Leuven, PhD training and Research
- j) Gulu University – PhD training and Research
- k) Makerere University – Research Partnership
- l) Uganda Martyrs University – Research Partnership
- m) University of Wisconsin River Falls- Collaborative Graduate Supervision
- n) Perdue University- Research Partnership
- o) Operation Wealth Creation (OWC) NAADS – Research and Students Placement

The Faculty is spearheading the University collaboration with National Agriculture Research Organization (NARO). This collaboration has been very instrumental in supporting the teaching of the Bachelor of Science in Agricultural Livelihoods and Farm Production. At Mbazardi, agriculture students of MUST visit the laboratories for their practical sessions.

European Master in Migration and Intercultural Relations (EMMIR) a programme implemented within a consortium of seven universities from Africa and Europe with funding from the European Union Education, Audiovisual and Culture Executive Agency (EACEA)

The Faculty also implements an adolescent reproductive health education outreach program in 34 primary schools in Mbarara District in partnership with University Ghent, Free University of Brussels and Uganda Martyrs University.

6.9 Research Grants

SN	Grant Name	Partnering Institution(s)	Funding Agencies	Principal Investigator	Co-IPs	Amount	Period
1	Understanding the Marginalized Indigenous Batwa People of South-Western Uganda	MUST Makerere University - RAN University of Perdue	USAID – LASER PULSE	Dr. Viola N Nyakato	Dr. Rogers Bariyo Assoc. Prof. Robert BitarihoDr. Gad RuzaazaOdon goHannington Dr. Elizabeth Kemigisha	USD 208.000	2020 to 2021
2	Provision of Technical Research Support to the Regional Development Steering Committee in the Southwestern Region of Uganda	USAID Uganda Mission SW-Uganda Regional Development Steering Committee	USAID through EGPAF	Dr. Viola N Nyakato	Dr. Rogers Bariyo Dr. Gad RuzaazaOdon goHannington	USD 89.196	2020 to 2022
3	East African Regional Network of Excellence in Dairy Training	A consortium of partners including AERES, icra, Wageningen,Fe	Nuffic - Orange Knowledge Programme (OKP)	Mr. OdongoHannington	Mr. Tumusingize Peregrino Dr. Ronald Twongyirwe	Grant Value for MUST 34,000 Euros	Uganda (2020 - 2021)

	(EARNED) Project	deral TVET Institute (FTVETI), Ethiopia, Eldoret National Polytechnic (ENP), Department of Applied Sciences, Kenya and Mbarara University of Science and Technology (MUST), Department of Environment and Livelihood Support Systems.					
4	Linking sustainable bio- organic farming techniques to youth	MUST MBAZARDI	Public Sector Foundation Uganda (PSFU)	Prof. Nixon Kamukama	Mr. Elias Oyesigye	100,000 USD	Novem ber 2020 to

	employability and product value addition in Uganda (i-SOFT)				Dr. Medard Twina matsiko Dr. John Bosco Nkurungu Dr. Halid Kilunda Mr. Robert Muzira		April 2021
5	Proximal and remote sensing of soil quality for supporting farmers' crop agriculture	Makerere University	Government of Uganda through the Makerere University Research Innovation Fund (RIF)	Dr. Allan Komakech	Dr. Ronald Twongyirwe Dr. Joshua Wanyama	UGX 220,000,000	October 2020 – October 2021

8.10 Student-community Twinning Project

The Faculty runs a Student-Community Twinning Project (STP), a weekly programme where students engage with communities in Mbarara City to

develop and pilot community based development projects such as soap making, rabbit and pig rearing, mushroom growing, apiary and backyard farming,



However, because of the covid-19 pandemic which terrorized the whole world the program did not take place.

8.11 Future Plans

The following are some of the future plans:

- a) Complete the Faculty Strategic Plan,
- b) Continue to attract funding for both research and staff development,
- c) Recruit core staff for Bachelor of Science in Agriculture and Livelihoods,
- d) Solicit for funding for the proposed Agricultural Livelihoods Skilling Centre,
- e) Upgrade the University Farm as a teaching and research structure of the Faculty
- f) Attract more students to the post and undergraduate programmes through marketing and reaching out to schools
- g) Roll out tutorials for DVS (Development Studies Service Course)
- h) Roll out the following proposed academic programmes:
 - i) Post Graduate Diploma in Parenting and Family Relations
 - ii) Postgraduate Diploma in Project Planning and Management
 - iii) Postgraduate Diploma in Livelihoods and Agricultural Innovations.

- iv) Bachelor of Science in Biodiversity Conservation & Tourism Development
- v) Master of Arts in Project Planning and Management
- vi) Master of Science in Livelihoods and Agricultural Innovations.
- vii) Master of Science in Social and Reproductive Health Research

9. Faculty of Applied Science and Technology



9.1 Introduction

The overall vision of the Faculty *is to be a center of excellence in the provision of quality training and promote research in applied and multi-disciplinary Science and Technology with a focus on community development.* The fields of Applied Science, Engineering, and Technology are key to the attainment of Uganda's national goals of social and economic development and 'Vision 2040'.

The Faculty of Applied Sciences and Technology (FAST) strategic and implementation plan was conceived in 1998 by the then Vice Chancellor professor F.I.B. Kayanja, documented by Mr. Stephen J. Palmer a visiting engineer and approved by the university council. The overall vision of the FAST is "To be a center of excellence in teaching and research in applied and multi-disciplinary studies

in the areas of applied science and technology". The fields of applied sciences, engineering and technology are key to the attainment of the Uganda's national goals of social and economic development. FAST pioneered the relocation of the university to Kihumuro campus located 7km along Mbarara-Bushenyi highway from Mbarara City Campus. In line with MUST Mission and Objectives, FAST was established with the following departments currently running undergraduate programmes in each department and a doctoral programme in department of Biomedical Sciences and Engineering:

- a) Department of Electrical and Electronic Engineering
- b) Department of Biomedical Sciences and Engineering

- c) Department of Energy,
Mineral and Petroleum Studies
- d) Department of Civil and
Building Services Engineering
- e) Department of Mechanical and
Industrial Engineering

The achievements and impacts of FAST have been remarkable, aligned with Sustainable Development Goals (SDGs) and Uganda's National Development Plan III (NDPIII). FAST has made noteworthy progress in 2022/2023 FY. The achievements are presented in the table below under selected themes with a deliberate bearing on the promotion of sustainable development in Uganda through a domesticated integration of the SDGs and how they locally fuse with the NDPIII. By focusing on key areas, FAST has achieved the following:

9.2 Educational Programs/ Curriculum

FAST launched two new bachelor's programs in the 2022/2023 academic year. These include mechanical and industrial engineering, and Civil and building services engineering. The faculty was also able to get the Masters program in Biomedical engineering

Science week: The Faculty successfully held its first science week in which several projects and innovations were presented and showcased.

Start-Ups: Empowerment, Campus Sustainability, Awareness and Advocacy, Entrepreneurship and Start-ups, Student Projects and Competitions, FAST therefore reports as follows:

approved and students have been admitted to start in 2023/2023 academic year.

9.3 Research and Innovation

In 2022/2023 academic year, FAST has won two research grants from the Center for Innovations and Technology Transfer (CITT). Additionally, members of the Faculty also won two more grants from the first mile project and CAMTech. Students from the Faculty under the Petroleum engineering society participated in a competition in Ghana in which they emerged second. Two more students were also sponsored by the Bill and Melinda Gates foundation to attend and present their research on the MRI project.

9.4 Partnerships

The Faculty has signed MOUs and working documents with 3 institutions in the 2022/2023 academic year.

9.5 Community Engagement

The faculty was able to place over 200 students into the community to undertake internships at various institutions, organizations and companies.

9.6 Performance Matrix

Please find below the matrix highlighting FAST's key achievements for the year 2022/2023 FY:

Key Achievements	Description	Numbers	SDG addressed	NDPIII Alignment
Educational Programs/ Curriculum Integration:	a) New programs started. b) New curricular accredited c) New curricular developed and submitted to Quality Assurance	2 1 2	SDG 4	Programme 12: Human Capital Development
Research and Innovation:	a) Grants won by Faculty members/students b) Awards won by faculty members /students	4 3	SDG 3	
Partnerships	a) MOUs signed b) Research partnerships with local institutions/organizations c) Research partnerships with international institutions	3 7	SDG 2	
Community Engagement /Empowerment	a) Science fairs organized by Faculty b) Students attached to community for internships c) Trainings targeting community members	1 220 1	SDG 1	
Campus Sustainability	a) Tree planting and environmental protection initiatives carried out by the Faculty b) Promote Energy conservation at the Faculty (Initiatives/activities)	50 trees planted Energy audit carried out, report written		
Awareness and Advocacy	a) Webinars and seminars organized by student bodies b) Staff workshops and trainings	4 2 organized		
Entrepreneurship and Start-ups	a) Companies registered by staff/students b) Prototypes with commercial potential demonstrated	3 6		
Student Projects and Competitions	Support student-led projects and competitions that address specific SDGs, allowing them to gain hands-on experience in creating sustainable solutions. a) MUES (Mbarara University Engineering Society) seminar to host the General Manager of Uganda Refinery Holding	180 students attended. (Female		

	<p>Company Ltd- Eng. Dr. Michael Nkambo Mugerwa for talk about opportunities in Uganda's oil and gas sector.</p> <p>b) MUES (Mbarara University Engineering Society) hosted the president of Uganda Institution of Professional Engineers- Eng. Andrew Muhwezi to give a career talk about how Engineering students can prepare to transition into the Professional/ Corporate world.</p> <p>c) MUES organized an outreach to the UMEME Mbarara North Power Substation for students doing Bachelor of Electrical and Electronic Engineering to learn from a more practical perspective about the substation and its role in power distribution.</p> <p>d) MUES together with IEEE EMBs- MUST Chapter (Institute of Electrical and Electronic Engineers Engineering in Medicine and Biology Society) organized an outreach to Mbarara Regional Referral Hospital for Engineering students to visit the hospital, interact with medical equipment and learn from the senior personnel about engineering and its role in healthcare.</p> <p>e) MUES organized a Sports Gala for students at the faculty to compete in football, netball, volleyball, badminton, chess, scrabble, play station among others. The competition was inter-year with the fourth-year students emerging overall winners.</p> <p>f) MUES organized the first ever Engineering students' dinner, an evening in which the achievements of the Society and the faculty were celebrated. The guest of honour was the DVC Prof. Kamukama Nixon.</p>	<p>32%; Male 68%)</p> <p>210 students attended</p> <p>80 students attended</p> <p>50 students attended</p> <p>200 students participated</p>		
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- a) **SDGs Linkage:** FAST's projects directly contribute to the United Nations' Sustainable Development Goals, promoting education, healthcare, food security, and poverty eradication.
- b) **NDPIII Linkage:** FAST's initiatives are well-aligned with Uganda's National Development Plan III, supporting key objectives related to economic transformation, job creation, and social welfare.

10. Institute of Tropical Forest Conservation

10.1 Introduction

The Tropical Forest Conservation (ITFC) is a lead Ugandan research institution working primarily for biodiversity conservation and sustainable management of natural resources in and around the protected areas of the Albertine Rift ecoregion – an area with significant concentration of globally unique biodiversity in Africa. The institute was established in 1991 as a semi-autonomous unit of MUST. ITFC's mission is to lead in the implementation and support of conservation-oriented research, monitoring and training to strengthen the protection and management of Albertine Rift montane rainforests and biodiversity.

ITFC is located miles away from MUST main campus, at the eastern edge of Bwindi Impenetrable National Park (BINP) in Ruhija Town Council of Rubanda District, SW Uganda. The rationale for the formation of ITFC under MUST was the need for a permanent research station in the “Afromontane” rainforest which is considered the rarest and most important vegetation type for biodiversity conservation in Africa but is little studied. The montane forests are all small islands surrounded by some of the highest rural human population densities in Africa. The ability of isolated islands of forest to survive in the long-term, when

surrounded by dense human populations, is unknown. Having a long-term presence in such an ecosystem has an advantage in that it allows data collection overtime so that a long-term database is established. Long-term data sets are what make established field research stations very valuable places. The institute's core function is to initiate and implement a range of research and monitoring projects and programmes aimed at addressing major conservation threats and challenges. ITFC also provides research opportunities and supervision to graduate students, researchers and conservationists/practitioners. In addition, the institute offers technical support and guidance to Uganda Wildlife Authority, the National Forestry Authority and other conservation agencies in the region to ensure that research results and recommendations are translated into management decisions and actions. Lastly, ITFC serves as a base to visiting researchers from Uganda and beyond.

ITFC's conservation and research activities, achievements and challenges in 2021/2022 are highlighted in this section.

10.2 Research projects

10.2.1 Field research

ITFC staff conducted four field research projects:

- a) An assessment of the impacts of Bwindi Mgahinga Conservation Trust (BMCT) and Uganda Wildlife Authority (UWA) community livelihood projects in the mitigation of poaching and other illegal activities within Bwindi Impenetrable National Park, SW Uganda. Fieldwork was completed in January 2021, **a technical report submitted to BMCT in May 2021**
 - b) An assessment of the status of biodiversity of Echuya Central Forest Reserve four years following bamboo forest understory clearance by National Forestry Authority, SW Uganda. Fieldwork was completed in November 2021, **a technical report submitted to Nature Uganda in April 2022.**
 - c) An assessment of the current status of biodiversity in Kasyoha-Kitomi Central Forest Reserve, SW Uganda. Fieldwork was completed in January 2022, **a technical report submitted to Nature Uganda in June 2022.**
 - d) Using occupancy models of globally endemic and threatened bird species for priority conservation planning of Bwindi Impenetrable National Park, Uganda. **Field work begun in December 2022 and is still ongoing**
-
- Albertine Rift Mountains Endemic Bird Area. Submitted to British Ecological Society, September 2021. **Status - unsuccessful**
 - b) Using occupancy models of endemic and threatened bird species in priority conservation planning of Bwindi Impenetrable National Park, Uganda. Submitted to British Ecological Society, March 2021. **Status – unsuccessful**
 - c) Using occupancy models of globally threatened bird species to prioritise conservation planning of Bwindi Impenetrable National Park, Uganda. Submitted to Foundation Segre Conservation Action Fund, August 2021. **Status – unsuccessful.**
 - d) Camera traps assessment of arboreal mammal species diversity and occupancy in an Afromontane rainforest. Submitted to Uganda Wildlife Authority, May 2022. **Status – unsuccessful**
 - e) Using occupancy models of endemic and threatened bird species in priority conservation planning of Bwindi Impenetrable National Park, Uganda. Submitted to Uganda Wildlife Authority, May 2022. **Status – successful**
 - f) Life skills: An assessment of the impact of diversified teaching on the uptake and retention of the indigenous Batwa children in Uganda’s education system. Submitted to Spencer Foundation, January 2021; **Status - unsuccessful**

10.2.2 Research Proposals

ITFC staff wrote several proposals during the year which were submitted to various donors.

- a) Effects of road proximity on rainforest bird communities in the

- g) An assessment of the status of biodiversity in Echuya Central Forest Reserve four years following bamboo forest understory clearance by NFA, SW Uganda. Submitted to Nature Uganda, September 2021; **Status - successful**
- h) An assessment of the status of biodiversity in Kasyoha-Kitomi Central Forest Reserve, W Uganda. Submitted to Nature Uganda, November 2021; **Status - successful**
- i) Assessment of the status of birds as indicator species of Outstanding Universal Values (OUVs) of Bwindi Impenetrable National Park World Heritage Site. Submitted to African Heritage Fund, August 2021; **Status – unsuccessful**
- j) New strategies for a better protected areas management in SW Uganda: what are the synergies and trade-offs? Submitted to Science for Nature and People Partnerships (SNAPP), January 2021; **Status – unsuccessful**
- k) Establishment of the Bwindi Tree Network in local community households around Bwindi Impenetrable National Park, SW Uganda. Submitted to Mondberge, Germany, July 2021. **Status – unsuccessful**
- l) Identifying the drivers of African mammal functional diversity, Proposal written in collaboration with Rice University, USA in February 2022 and submitted to National Science Foundation-NSF (USA) in April 2022. **Status – unsuccessful**
- m) Innovation for Sustainability and Societal Relevance Partnerships (INSSPIRE) in evidence-based higher Education on food systems and climate change. Proposal written in collaboration with Vrije Universiteit, Amsterdam (VU) – Netherlands, Makerere University, Maseno University, and South Eastern Kenya University and submitted to Erasmus-Edu-2022-CBHE - Strand 2. EU Grants in collaboration in April 2022. **Status – successful** (EUR 992,658)
- n) Valuing Tropical Mountain Forests to enhance their conservation. Proposal written in collaboration with York University, UK, January 2022. Submitted to National Science Foundation-NSF (USA), April 2022. **Status – response awaited**
- o) Human-elephant conflict mitigation and coexistence at Bwindi Impenetrable National Park, SW Uganda. Submitted to Elephant Foundation, August 2022. The project passed the pre-proposal stage and was among the few selected to submit full proposal for 2023 Conservation Grant funding from the International Elephant Foundation. **Status – response awaited.**
- p) Transdisciplinary approaches for improved forest conservation in Uganda. Submitted to Rufford Small Grant Foundation, UK,

September 2022. **Status – response awaited**

Worth noting is that the rejected proposals had very positive reviews from donor reviewers. This means that

they were extremely good but were narrowly pipped at the post due to limited donor resources. We shall resubmit the proposals to other potential funding opportunities.

10.2.3 Publications

ITFC staff submitted several scholarly papers to peer-reviewed international journals that were published, are in press or under review:

a) Published:

- Bitariho R**, Akampurira E, Mugerwa B. (2022). Long-term funding of community projects has mitigated illegal activities within a premier African protected area, Bwindi Impenetrable National Park. Conservation Science and Practice 12761. <https://doi.org/10.1111/csp2.12761>
- Fromentin JM, Emery MR, Donaldson J,**Bitariho R**,.....et al. (2022). IPBES Sustainable Use of Wild Species Assessment—Chapter 1. Setting the Scene. Zenodo. <https://doi.org/10.5281/ZENODO.6425672>
- Vargas AV, Sheil D, Semper-Pascual A, **Bitariho R**,et al. (2022). Consistent daily activity patterns across tropical forest mammal communities. Nature doi.org/10.1038/s41467-022-34825-1
- Salerno J, Bailey K, Diem J, Konecky B, Bridges R, Namusisi S, **Bitariho R**, Palace M and Hartter J (2022). Smallholder knowledge of local climate conditions predicts positive on-farm outcomes. American Meteorological Society Journal. DOI: 10.1175/WCAS-D-21-0131.1
- Wright E, Eckardt W, Refisch J, **Bitariho R**, Grueter CC, Ganas-Swaray J, Stoinski TS, Robbins M. (2022). Higher maximum temperature increases the frequency of water drinking in mountain gorillas (*Gorilla beringei beringei*) Frontiers in Conservation Science 3. doi: 10.3389/fcosc.2022.738820
- Gatti R, Reich PB, Gamarra JGP,**Bitariho R**, et al. (2022). The number of tree species on Earth. PNAS Journal. Vol. 119 No. 6 <https://doi.org/10.1073/pnas.2115329119>
- Chen C, Brodie J, Kays R,**Bitariho R**,..... et al. (2022). Global camera trap synthesis highlights the importance of protected areas in maintaining mammal taxonomic and functional diversity. Conservation Letters 15(18) DOI: 10.1111/conl.12865
- Liang L, Gamarra JGP, Picard N,**Bitariho R**, et al. (2021) Evidence of co-limitation in global forest diversity gradients. Nature Ecology and Evolution 6(10): 1-15

- Cuni-Sanchez A, Sullivan M, Platts P,**Bitariho R**,et al. (2021)High aboveground carbon stock of African tropical montane forests. *Nature* 596:536–542
- Bailey K, Salerno J, Newton P, **Bitariho R**, Namusisi S, **Tinkasimire R**, Hartter J (2021)Woodlot management and livelihoods in a tropical conservation landscape. *AMBIO*<https://doi.org/10.1007/s13280-020-01484-9>
- Blundo C, Carilla J, Grau R, **Bitariho R**.....et al. (2021) Taking the pulse of Earth's tropical forests using networks of highly distributed plots. *Biological Conservation*<https://doi.org/10.1016/j.biocon.2020.108849>

b) In press:

- Ancrenaz M, **Bitariho R** and Sugnaseelan S. Tourism, Research and Ape Health (Chapter 3). In: *State of the Apes: Health and Ape Conservation*, Cambridge, UK: Cambridge University Press.
- Bugabo SG, **Bitariho R** and Twinamatsiko M. Can recognition and respect of forest resource rights save Echuya Central Forest Reserve? A precursor for appropriate collaborative forest management. *International Forestry Review Journal*
- Cuni-Sanchez A, **Twinomuhangi I**, Aneseyee AA, Mwangi B, Olaka L, **Bitariho R**, Soromessa T, Castro B, and Zafra-Calvo N. Everyday adaptation practices by coffee farmers in three mountain regions in Africa. *ES-2022-13622*

Under review:

- Babaasa D**, Finn JT, Schweik CM, Fuller TK and Sheil D. Predictive mapping of tree species assemblages in an African montane rainforest. *Biodiversity and Conservation*. <https://doi.org/10.21203/rs.3.rs-2>
- Babaasa D**, **Bitariho R** and Byaruhanga A. Effects of human disturbance on bird community of Kasyoha-Kitomi Central Forest Reserve, W. Uganda. *Ostrich: journal of African Ornithology*
- Bitariho R**, **Babaasa D**, and Byaruhanga A. Impacts of anthropogenic perturbations on the floristic composition and diversity of Echuya Central Forest Reserve, S. W Uganda. *African Journal of Ecology*
- MaH, Crowther TW, Mo L,**Bitariho R**,et al. The functional biogeography of tree leaf form and habit at a global scale. *Conservation Letters*
- Declan LM, Simon CL, Maynard DS,**Bitariho R**, et al. Commonness in tropical forest tree communities. *Conservation Letters*
- Vallejo-Vargas AF, Sheil D, Semper-Pascual A,**Bitariho R**,et al. Consistent daily activity patterns across tropical forest mammal communities. *Nature Communications*
- Delavaux CS, Crowther TW, Zohner CM, **Bitariho R**,et al. Ecological and anthropogenic drivers of non-native tree invasions at a global scale. *Science*

- Hordijk I, Maynard DS, Hart SP,**Bitariho R**, et al. Evenness mediates the global relationship between forest productivity and richness. *Journal of Ecology*
- Mo L, Zohner CM, Maynard DS, **Bitariho R**, et al. A ground-sourced evaluation of global forest carbon potential. *Science*
- Semper-Pascual A, Sheil D, Beaudrot L,**Bitariho R**, et al. Stressors from inside and outside tropical protected forests alter occurrence dynamics of mammals. *PNAS Journal*
- Hsieh C, Gorczynski D, Tonos J,**Bitariho R**, et al. Anthropogenic impacts alter wildlife response to edges within protected tropical forests worldwide. *Nature Ecology and Evolution*
- Zou Y, Zohner CM, Averil C,**Bitariho R**, et al. The evidence and global extent of evergreen vs. deciduous forests as alternative stable states. *Science*
- Reuter K, Eppley T, Sefczek T, **Bitariho R**, et al. Field stations yield high return on investment for conservation in a time of crises. *Nature* 2022-09-14950
- In addition, Robert Bitariho, was a Review Editor Chapter 1 for the IPBES assessment on the sustainable use of wild species *IPBES Press* (3rd July 2019 to June 2022). ITFC publications increase MUST's visibility locally, nationally, regionally and internationally

10.2.4 Research Equipment

ITFC received the last batch of equipment from the 3C project (NICHE-GLR-264-CF13226)

“Enhancing capacity in natural resource management and conflict resolution for stability and inclusive growth in the Greater Virunga Landscape” – a corroborative research project between ITFC, Greater Virunga Transboundary Cooperation (GVTC) and Vrije University (VU), Netherlands. The equipment included 5 voice recorders, 3 laptops and 5 handheld tablets. The total cost of scientific equipment and a vehicle received by ITFC under this project since 2017 totals EUR 60,782,30

10.2.5 Graduate Student Support and Supervision

ITFC continued to support two graduate students from a grant from Netherlands Initiative for Capacity development in Higher Education (NICHE) - the 3C project (NICHE-GLR-264-CF13226) *“Enhancing capacity in natural resource management and conflict resolution for stability and inclusive growth in the Greater Virunga Landscape”*:

Isaac Twinomuhangi, graduated with an MA (Local Governance and Planning) from MUST in April 2021

Emmanuel Akampurira, is in the final year as a PhD student natural resource conflict analysis, at Ghent University,

Belgium. He was expected to graduate in June 2021.

The following students are under academic (co-) supervision of ITFC staff:

Dr. Dennis Babaasa

- a) Mr Emmanuel Akampurira, PhD student, University of Ghent, Belgium
- b) Gilbert Tayebwa, MSc student, Environment and Natural Resources, Kabale University

In addition, Dr. Dennis Babaasa was regularly consulted by Julius Asiimwe and Shadrack Muruthi (MSc students Dept of Biology, MUST) on their research proposals and/or reports. Dennis serves as an external examiner in the Department of Environment and Natural Resources, Kabale University, since his appointment in 2018.

Assoc. Prof. Robert Bitariho

- a) Daniel Ndizihiwe, PhD student, Faculty of Science (FoS), MUST
- b) Stephen Bugabo Gumisiriza, PhD student, Faculty of Interdisciplinary Studies (FIS), MUST
- c) Robert Bagenda, PhD student, Faculty of Interdisciplinary Studies (FIS), MUST
- d) Robert Baluku, PhD student, Faculty of Interdisciplinary Studies (FIS), MUST
- e) Raymond Kato, MSc student, College of Agricultural and Environmental Sciences,

Makerere University.
Completed in May 2022

In addition, Robert was an examiner for the following:

- a) Humprey Kato, MSc candidate, Faculty of Science (FoS), MUST
- b) Imelda Latworo, MSc candidate, Makerere University
- c) Sharon Kagwisa Kamuganga, MSc candidate, Makerere University
- d) Robert Makaru, MSc candidate, MUST
- e) Rachel Nalule, MSc candidate, Makerere University
- f) Jennifer Turyatamba Tumushabe, PhD candidate, MUST
- g) Shadrack Murithi Njagi MSc candidate, MUST

10.3 Visiting Researchers

The following visiting researchers and graduate students, did their research field work in Bwindi and were hosted at ITFC:

- a) Ms Rebecca Junod, a PhD student, Max Planck Institute of Evolutionary Anthropology (MPI), Germany, carried out fieldwork on feeding ecology, social behavior and population dynamics of mountain gorillas, June to August 2021
- b) Dr Aida Cuni Sanchez from the Department of Environment and Geography, University of York, UK, re-measuring tree characteristics in the 6 permanent plots of BINP and Mgahinga National Parks (MGNP). She is monitoring and analyzing the long-

term forest dynamics of BINP and MGNP, July to September 2021.

- c) Ms Charlotte Grund, PhD student, University of St Andrews, UK, studied the gestural communication of Bwindi mountain gorillas, July to August 2021
- d) Dr Martha Robbins from the Max Planck Institute of Evolutionary Anthropology (MPI), Germany, resumed fieldwork in July 2021 on her long-term programme mountain gorilla population dynamics, socio-ecology and impacts of tourism on gorilla behavior.
- e) Mr. Badru Mugerwa PhD student, Leibniz Institute for Zoo and Wildlife research, Canada did field research on acoustic biodiversity and illegal activities assessment around Ruhija, October to December 2021
- f) Ms Bianca Zolletto, Wageningen University, Netherlands, did her field research on the influence of lightning strikes on tropical forests

of equatorial Africa, July to August 2022

- g) Dr Cervina Barbora, Institute of Vertebrate Biology, Czech Academy of Sciences, ITFC field staff assisted her collect chimpanzee dung samples from BINP, October to November 2022. She is studying interspecies parasite transmission among wildlife species.

We expect more researchers and graduate students to resume their field research projects and be hosted at ITFC as COVID-19 global pandemic wanes.

- a) Twelve African Golden Cat Conservation Alliance (AGCCA) researchers and conservationists held a 2-day workshop at ITFC in mid-December 2021. AGCCA is a group of researchers and conservationists working on the little known rainforest carnivore, the African golden cat in ten countries across Africa

10.4 Outreach

10.4.1 Herbarium and Ethnobotany garden

The herbarium hosts 3,251 plant specimens representing 1,321 species and 156 families. Majority of the collections are from the two Afromontane forests of Bwindi Impenetrable and Mgahinga Gorilla National Parks, our primary targets in SW Uganda. No new plant specimens were added to the herbarium in 2021/22 as a few field trips were made

to the forests and the trips made were in sites where specimen collections were done before.

In the ethnobotany garden, 14,915 seedlings belonging to 22 indigenous plant species were potted in 2021. A total of 2,212 seedlings, belonging to 10 species were sold, with 2,077 and 135 seedlings being purchased by institutions/organisations and individuals, respectively. Fourteen seedlings, belonging to 2 species, were donated to UWA Bwindi management for distribution to the local

communities. The seedling sales were very low, greatly affected by the COVID-19 global pandemic as few individuals and organisations/institutions planted or distributed seedlings among the local communities. As a result, some of the potted seedlings of fast-growing species were overgrown. Also, COVID-19 affected the collection of seeds and seedlings from the park because of the total country-wide lockdown and lack of funds to conduct seeds and seedlings collections.

In 2022, 23,558 seedlings belonging to 20 indigenous plant species were potted. Sales totaled 4,593 seedlings, of which 2,159 and 2,434 seedlings were purchased by organisations/institutions and individuals, respectively. In addition, 329 seedlings were donated to UWA. Seedling sales increased two-fold in 2022 as the communities are slowly resuming tree growing as the COVID-19 pandemic wanes.

10.5 Meetings and Workshops

Several meetings and workshops were attended physically and virtually by ITFC staff. Assoc Prof Bitariho attended – university council meetings and those of its committees (Legal, Rules and Privileges, Student Welfare and Disiplinary, and Finance) Dr Dennis Babaasa attended meetings of senate, and Quality Assurance Committee. Both Dennis and Robert attended the MUST Research Dissemination Conference and meetings convened by conservation partners in region including Greater

Virunga Transboundary Cooperation Secretariat (GVTC), International Gorilla Conservation Programme (IGCP), Bwindi Mgahinga Conservation Trust (BMCT), Nature Uganda (NU) and Bwindi Mgahinga Conservation Area (BMCA). The meetings and workshops are too many to be individually reported here.

10.6 Staff and Administration

There were changes in staff in 2021. Dr Dennis Babaasa was appointed Acting Director by VC MUST with effect from July 15, 2021. He replaced Assoc Prof Robert Bitariho, who successfully completed his two-term contract as the Director. Also, Mr Alex Atuheire was appointed in January 2021 as the Finance and Administrative Officer/Senior Accounts Assistant, replacing Mr Desi Tibamanya who left ITFC/MUST service after clocking the retirement age. The current staffing of ITFC is as follows:

- a) Dr. Dennis Babaasa, Ag.
Director
- b) Assoc. Prof Robert Bitariho,
Research Professor
- c) Mr Alex Atuheire, Finance and
Administration Officer/Senior
Accounts Assistant
- d) Mr. Robert Mujuni, Junior
Research Officer – Social
Science
- e) Mr Isaac Twinomuhangi,
Junior Research Officer, Social
Science
- f) Ms Clemensia Akankwasa,
Senior Administrative
Assistant/Personal Secretary II

- g) Mr Robert Barigyira, Senior Herbarium Technician
- h) Ms Florence Tukamushaba, Secretary/Receptionist/Librarian/Stores clerk

In addition, there is a team of 15 field assistants, camp keepers and security guards.

Only five members - Director, Research Professor, Finance and Administration Officer/Senior Accounts Assistant, Senior Administrative Assistant/Personal Secretary II and Senior Herbarium Technician - are employees of MUST. The rest are contractual staff whose contracts with ITFC depend on extant field research projects at a time. There is still a big gap in staffing, particularly research positions (those with Masters and PhD degrees), that need to be filled to make ITFC more productive.

10.7 Finance

10.7.1 Income and expenditure

As of December 2022, the balance on ITFC account was UGX 581,253,230.

A summary of the income and expenditure for July 2020 to December 2021 period are shown in the table below. The funds indicated as carried forward from the previous year (2021) are disbursements of donor funds which do not coincide with MUST/GoU financial year timelines. Also, majority of our research projects have lifespans of more than one year. It should be noted that the donor funds are conditional grants to run specified research activities according to workplans agreed, therefore do not technically qualify to be called 'financial income' to ITFC. For example, funds from Max Planck Institute, Germany, are specifically for monitoring the behavior and ecology of mountain gorillas in Bwindi. Funds from MUST were used for maintenance of facilities and infrastructure, vehicle running costs, casual labour salaries/wages (night guards and campkeepers), hand sanitizers, and office running costs. MUST internal auditors audit ITFC book of accounts on a quarterly basis every year.

Income/Grants Source	Amount (UGX)	Expenses Item	Amount (UGX)
Max Planck Institute, Germany	132,053,129	Staff costs	244,207,113
MUST	95,000,000	Travel costs	1,967,000
Trainings and workshops	2,866,000	Office costs	7,154,400
Accommodation charges	2,907,053	Bank charges	3,672,799
Sales of plant seedlings	2,640,900	Station costs	33,641,700
Miscellaneous	9,985,885	Field programmes	18,836,300
Grant funds carried forward from FY 2021	634,275,587	Vehicle maintenance and running costs	25,343,757
TOTAL	879,728,564		334,823,069

10.7.2 Income generating activities

Part of the 24.6 ha of land purchased adjacent BINP in Buhoma, Kanungu District in 1993 by ITFC, now hosts two income generating projects. The funds generated are remitted directly to MUST:

- a) The Buhoma Community Campsite and Lodge rents a part of the land and established a tourist camp site. MUST has a MoU with the campsite owners since 2016 to pay an annual ground rent of UGX 10 million.
- b) MUST acquired a grant of UGX 2 billion from the Africa Development Bank (AfDB) in 2016 to establish a tourist camp on part of the land. Currently, the tourist camp is run by Kambuga Forest Cottages (KFC) under a PPP arrangement with MUST. KFC annually remits UGX 14 million.

The remaining undeveloped land has the potential to be utilized for other Income Generating Activities (IGA).

10.8 Facilities and Infrastructure

ITFC has 2 office blocks, 6 accommodation houses, and 1 conservation education centre all located on the UWA land (Bwindi Impenetrable National Park), at Ruhija, Rubanda District. MUST has MoU with UWA allowing ITFC to put develop its infrastructure and operate in the National Park (Bwindi). Under the rural electrification programme, GoU is extending electricity grid to Ruhija. In 2022, we made a complete electric installation in the office blocks and one residential house (the student dormitory). Because of limited resources, the electric installation in the rest of the buildings was partial - one bulb and one socket in the living room. We depend on solar electric system which is expensive to install

and maintain and is inefficient since Ruhija area gets effective sunshine for a few hours each day because of constant cloud cover.

ITFC has 6 vehicles, (one new Toyota Hilux pickup 2019 model, four Toyota LandCruisers hard body 2009, 2004, 1999 and 1997 models and one Toyota Pickup Hilux 1999 model). Apart from the Toyota Hilux 2019 model and one of the Toyota Land Cruisers (2009 model); the rest of the vehicles are very old making ITFC incur high maintenance costs. However, they are still required for field trips because of their capacity to carry more people, heavy luggage and maneuver the rough roads and steep terrain of our work area.

10.9. Challenges

10.9.1 Lightning strikes

There were two lightning strikes at ITFC in July 2021 in a space of two weeks. The first one struck two staff residential houses in the early hours of the night, while the second one struck the office blocks and one residential house in the afternoon. In both cases, three solar electric inverters were damaged beyond repair. Also, four solar security lights were completely destroyed. Fortunately, no life was lost but some staff members got electric shocks and some personal equipment was slightly damaged. As a mitigation measure, all buildings currently occupied by staff as office and residence were installed with lightning conductors. Where a building is large, two conductors were installed. Only one building – the Conservation

Education Centre - remains without a lightning conductor. We were also advised by the technicians to disconnect the solar electric systems whenever it threatens to rain or is raining as the solar electric system is capable of conducting static electricity from lightning even when it's switched off and there is a lightning conductor on the building.

10.9.2 Financial sustainability

As reported in the previous annual reports, there is a steady decline in funds received by ITFC for research. This is mainly due to much of the donor support being short-term and uncertain, vulnerable to changing donor priorities and/or global economic situation. Also, most of the current donor support is for the implementation of specific projects, rather than as un-earmarked 'core' or 'programme' support as the case was before. This has an effect of skewing the institute's research programmes away from the identified conservation and management priorities towards potentially less important, and sometimes transient, donor priorities. In the short-term, we are trying to liaise with scientists in the global north who are more experienced dealing with the donor agencies to improve our rate of project proposal success. There is need to secure the institute's long-term financial sustainability, diversifying and institutionalising its financial base, and reducing its reliance upon uncertain short-term donor financing.

10.9.3 Impact of COVID-19 global pandemic

As earlier mentioned in this report, COVID-19 global pandemic had a very negative impact on ITFC's conservation and research activities. Visiting researchers from the global north that were being hosted by ITFC left for their respective countries shortly before a total lockdown was declared over the whole of Uganda in March 2020. Majority have not returned to Bwindi to resume their

research activities. Even the few that have returned stay for a few months due to the restrictions imposed on them by their home country governments. Our in-park research activities resumed in 2021. These include collection of seeds and seedlings for the tree nursery in the ethnobotany garden. Greatly impacted is the availability of potential funding opportunities for our research activities as most of the traditional funding agencies now have limited or no resources.

11 The Maternal Newborn and Child Health Institute



11.1 Executive Summary

The Maternal Newborn and Child has continued to implement a number of projects in 2022 in the districts of Bushenyi, Rubirizi, Ntungamo, Mbarara, Buhweju and Rubirizi. The institute has continued to work with different partners to implement various community interventions and Research programs.

11.2 Sexual Reproductive Health and Rights Initiative

Healthy Adolescents and Young People (HAY!) supports district-led

activities and multi-level capacity building to strengthen adolescent/youth-friendly services in southwest Uganda. Through comprehensive sexual and reproductive health and rights (SRHR) programming, HAY! promotes dignified care at health facilities and supports young people in making informed and confident decisions about their health in a safe and respectful environment. HAY!

11.3 MicroResearch Programme

The MicroResearch program continued to be active with activities of

MicroResearch hub such as mentorship and coaching of researchers in regional sites of Malawi, Rwanda, Kenya, Tanzania and other institutions in Uganda including MildMay and Nsambya sites. In particular, the IMNCH mobilized for the online International MR Forum which brought together all MR members around the globe.

11.4 Special Needs

Special needs program supports children with special attention to adolescents and children born to young girls. Support is in form of health information, mobilizing community support, transport to access medical care, linking patients to health facilities, providing supplementary food and sometimes paying off their medical bills and school fees where necessary.

11.5 Staffing

Name	Gender	Title	Status
Prof. Jerome Kabakyenga	Male	Director	Full time
MS. Teddy Kyomuhangi	Female	HAY! Project Manager	Contract, project based
Ms. Asasira Shina	Female	HAY! Accounts Assistant	Contract, project based
Ms. Kyokushaba Clare	Female	HAY! Assistant Project Manager	Contract, project based
Mr. Mutatina Robens	Male	HAY! Community Health Officer	Contract, project based
Ms. Tushabe Irene	Female	Office Assistant	Contract, project based
Justine Nabbowa	Female	HAY! Community Health Officer	Contract, project based
Jane Kasande	Female	HAY! Community Health Officer	Contract, project based
Nasulu Samula	Male	HAY! Senior Driver	Contract, project based
Lydia Mbabazi	Female	HAY! Project Administrator	Contract, project based
Immaculate Ninsiima	Female	HAY! Monitoring and Evaluation Coordinator	Contract, project based
Christopher Ampurira	Male	HAY! Driver	Contract, project based
Mercy Muhwezi	Female	HAY! Project Finance Officer	Contract, project based
Leonard Mugabe	Male	HAY! Community Health Officer	Contract, project based

11.6 Research output

MicroResearch Program: (<http://www.microresearch.ca>)

11.6.1 Virtual training



Virtual MR Participants 2022

The 14th MicroResearch (MR) training program for the Maternal, Newborn and Child Health Institute (IMNCH) site at Mbarara University of Science and Technology (MUST) in Mbarara, Uganda was held virtually from April 25 to May 5 2022. Due to COVID-19 this was held virtually. 31 participants attended. Facilitators **Noni MacDonald**, Professor of Pediatrics, Faculty of Medicine Dalhousie University Halifax, **Scholastic Ashaba**, Senior lecturer Psychiatry, Faculty of Medicine, MUST, **Francis Oriokot**, Senior Consultant, Paediatrics at MRR, **Katusiime Beatrice**, nurse at MBRR, **Tumuhimbise Manasseh**, Lecturer, Dept. Accounting and Finance, faculty of Management Science, MUST, Abasa Catherine, Laboratory Science, MUST and **Teddy Kyomuhangi**, Program Manager HCU, MNCHI. Prof. Charles Tushabomwe-Kazooba, the DVC F&A MUST was a guest speaker at the training.

Workshop team composition included participants from Gulu Regional Referral Hospital in Gulu, Makerere University Business School in Kampala, Kabale University in Kabale, Kampala International University site in Ishaka in Bushenyi District, and MUST and Mbarara Regional Referral Hospital in Mbarara

11.6.2 MicroResearch International Forum

IMNCH worked with other MR partners to organize an international forum between June 6-7, 2022 aimed at coming up with a strategic direction for the MR program. This brought together different institution representatives and donors from Canada, Uganda, Rwanda, Tanzania, Kenya, and Malawi among others.

“The whole world, we really need to find a way to decolonize research. It shouldn’t be anchored elsewhere in the research questions and so forth. Meaningful questions should come from the scientists that live in these diverse environments”

a statement by Dr. John Phuka from Malawi

Below is a photo of one of the engagements during the forum



The MR fraternity, donors such as IDRC and Academic Without Borders, University representatives from different countries attended. MUST was represented by Prof. Charles Tushabomwe-Kazooba, DVC F&A.

11.6.3 Active Micro Research Projects in 2022

No.	Lead	Funder	Title/Topic	Status
1	Dr. Claire Kesande (F) (Psychiatry, MUST)	MNCHI, MUST	Psychological distress among pregnant adolescents and youth living with HIV in south western Uganda	Published https://doi.org/10.1080/13548506.2022.2050270
2	Abaasa Catherine (F) (MUST)	Micro Research, Canada	KT perspectives on factors underlying the persistent malnutrition of Children aged 0-59 months in southwestern Uganda children aged 0-59 months in Buhweju district	Planning for data collection
3	Ayebare David (M) (Micro Research, MNCHI)	Micro Research, Canada	Factors influencing cervical cancer screening in Sheema District	Responding to reviewers comments , journal of cancer investigations

5	Ester Beebwa (F) (MUST)	Micro Research, Canada	KT on the role of community health nursing in identifying the health needs of women and children under five years in Katete cell- Mbarara Municipality, Uganda	Received approval from MR Canada, submitted to MUST REC
6	Dr. Anthony Makhoba (M)	Micro Research Canada	modelling BCG birth does vaccination program for improved HEP B control in Uganda	Manuscript was rejected by BMC. Working on comment such that it can be submitted to another journal
7	Caroline Natuhwera (F)	Micro Research Canada	Menstrual Issues: Exploring knowledge, experiences and challenges in handling menstruation among adolescents with disabilities, a qualitative study	Manuscript was Submitted to Sexual & Reproductive Healthcare journal and was rejected. working on comments and submit to another journal
8	Dr. Nduhukire Timothy (M)	Micro Research Canada	Childhood obesity: Prevalence and associated factors among primary school going children in Mbarara Municipality	Received REC approval
10	Ivan Mugisha (M)	Micro Research Canada	Factors affecting the uptake of malaria prevention strategies among pregnant women in Birere sub-county, Isingiro district: Implications for effectiveness of malaria control.	Submitted to BMC public Health and no feedback yet
11	Ivan Mugisha (M)	Micro Research Canada	Social and Psychological impact of the COVID-19 pandemic in selected communities in Mbarara municipality south western Uganda’.	Waiting for feedback from BMC psychiatry
12	Ayebare David (M)	Micro Research Canada	“Determinants of Intimate Partner Violence Disclosure among Pregnant Women in Forcibly	At data analysis

13			Displaced Settlements during Covid -19 Pandemic in Kasese District”	Done with quantitative data collection
	Agatha Nshabahurira (F)	Micro Research Canada	What are the factors affecting uptake of DPT3 among children of 16 weeks-12 months of age at Rugazi HC IV Rubirizi District?	Report writing
14	Elizabeth Kemigisha (F)	Micro Research Canada	Voices of young adolescents in schools regarding the COVID 19 pandemic and prevention measures: A qualitative study in South Western Uganda using a mail box technique	Manuscript was submitted
19	Keneth Iceland Kasozi (M)	Micro Research Canada	What is the Impact of COVID-19 amongst pregnant women seeking antenatal care in SW Uganda	Responded to reviewers comments
20	Katusiime Beatrice (F)	Micro Research Canada	Prevalence and influencing factors of self medication character among lactating mothers in Mbarara district	Data analysis stagnated
21	Mutatina Robens (M)	Micro Research Canada	What are the psycho –social challenges of caregiver of children with disabilities at Ruharo Hospital In Mbarara District?	Data collection complete , analysis and report writing
22	Beatrice Akello (F)/ Dr. Tumuhimbise Manasseh (M)	Micro Research Canada	Barriers to complementary feeding among children below 2 years in Gwerisubcountysoroti district	Manuscript available , team Identifying journals for submission
23	Peter Nuwagira (M)	IMNCH	What are the self medication (traditional) practices by mothers, and their effectiveness, in the management of colic in children ages 0-4 months?	Data collection staganted
24	Najjingo Elizabeth (F)	Micro Research Canada	Factors That Influence False Tooth Extraction Among Children Below Two Years In Isingiro District:	data collection and transcription.

25				Now starting on analysis.
	Kanyesigye Hamson (M)	Micro Research Canada	assessment of intrapartum referrals and use of mobile phone technology to improve maternal-fetal outcomes in South Western Uganda	Submitted one manuscript to BMC that is under review, Second Manuscript to Journal of risk management and healthy policy which is also under review.
	Justus Asasira (M)	Micro Research Canada	Caregiver experiences for children (6 months-14 years) with Cerebral Palsy attending Ruharo Mission Hospital in Mbarara	Preparing to submit to MUST REC. Just waiting for proof of payment from the site and submit
	Komwangi Derrick (M)	Micro Research Canada	Factors influencing ART adherence levels among adolescents from Sheema attending boarding secondary school	Preparing to submit to MUST REC
28	Kyoyagalla Stella (F)	Micro Research Canada	What factors are associated with early discharge of preterm babies attending MRRH and HICH?	The team revamped our work on the proposal after a long break from COVID, worked on corrections and resubmitted to microresearch Canada. Got approved and now the team is working on

				submissions to REC
29	Kemigisha Elizabeth (F)	Micro Research Canada	Evaluation of a short menstrual hygiene training among adolescent girls in Nakivale refugee settlement'	Responding to MUST REC reviewers comments
30	Caroline Natuhwera (F)	Micro Research Canada	KT on Menstrual Issues: Exploring knowledge, experiences and challenges in handling menstruation among adolescents with disabilities, a qualitative study	Responding to MUST REC reviewers comments
31	Evas Nimusiima (F)	Micro Research Canada	Male involvement in Menstruation and Menstrual Health and Hygiene in Southwestern Uganda	Data analysis
32	Keneth Iceland Kasozi (M)	Micro Research Canada	What is the Impact of COVID-19 amongst pregnant women seeking antenatal care in SW Uganda	Worked on reviewers comments
33	Bives Mtume (M)	Micro Research Canada	What are the factors influencing relapse among patients with severe mental disorders at KIU-TH mental and psychiatry ward?	Responded to MUST REC reviewers comments
34	Stella Kyoyagalla (M)	Micro Research Canada	Factors associated with early discharge of pre-term babies in Southwestern Uganda: A qualitative study	Submitted to MUST REC
35	Abaatyo Joan (F)	Micro Research Canada	Psychological distress and its associated factors among health workers in South Western Uganda following the Ebola virus disease outbreak'	Provisional approval

11.7 Publications, Abstracts and Academic Conference Presentations

Organization & date	Publication Title	Description	Project support provided	Release/follow up
Paediatrics and Child Health- May 3rd, 2022	Dramatic effects of COVID-19 public health measures and	Online Journal article publication	Financial support from the Government of Canada	

Save The Mothers East Africa Reproductive Maternal Newborn Child and Adolescent Health (RMNCAH) conference- May 6, 2022 Canadian Conference on Global Health- Nov 21, 2022	mass reverse migration on youth sexual and reproductive health in rural Uganda		provided through Global Affairs Canada	
	Digital Storytelling Screening: Enabling the voiceless to share their own Adolescent and Young People Experiences Globally	Physical Oral presentation by RobensMutatina	HAY! Logo included, funder and partners mentioned	Reach: approx 130 (50 online and 80 physical) participants
	The application of Digital Story Telling in Global Health Research and Action.	E -presentation by DST team		Reach: approx 100 participants

11.8 Outreach Activities

11.8.1 Special Needs Program

For over 20 years, the Institute of Maternal Newborn and Child health through Healthy Child Uganda has supported children with health needs who are identified during community activities.

The support given to these children range from information, connecting them to area VHTs who mobilize local support, connecting them to health facilities for care or paying transport and sometimes medical bills. This program has been

made possible by a long-standing collaboration between Mbarara Regional Referral Hospital's department of pediatrics and child health, which handles many of the cases by providing care, and the Canadian Pediatric Society (CPS), which provides resource.

During the reporting period, this program benefited nine new clients (5 females and 4 Males) with supplementary feeds, surgery, psychotherapy and paying of their medical bills. Also, the program has continued to support old clients

enrolled on the program with continuous follow up.

11.8.2 Digital Story Telling (DST)

IMNCH has continued to venture in the DST methodology by creating and using Digital Stories for health programing engagements at local, national and international levels.

Under the Healthy Adolescents and Young People (HAY!) initiative, we have had an opportunity of using Digital stories during orientations and trainings of Health Workers, District leaders and Community Health Workers (VHTs) and these have been instrumental in raising awareness about sexual and reproductive Health challenges among young people.

Research. During this reporting period, IMNCH in partnership with University of Calgary Canada and funding from the Canadian Partnership for Women and Children's Health (CanWaCH) is undertaking a one-year study *“Digital Story Telling for Global Health Research and Action”* that is aimed at exploring the Ugandan experience of using Digital Story Telling since 2018. Findings from this study will be used to prepare an evidence-based, practice-informed, Global Health focused DST package consisting of guidelines, recommendations, and innovation, which can be adapted into tools and training materials for sharing with others in Canada and beyond.

Showcasing. We have had opportunities to demonstrate the

applicability of Digital Story Telling methodology in health promotion and research (Knowledge Translation) at various local and international conferences, such as the Save The Mothers conference at Uganda Christian University, the International Clinical MicroResearch forum, and the Canadian Conference for Global Health. These engagements have resulted in requests for DST training from organizations/MicroResearch sites in Rwanda, Kenya, Tanzania, Malawi, and Burundi, and this points to our desire of becoming an African DST hub.

Research. IMNCH in collaboration with Canadian counterparts has been able to publish a research paper titled *“Let all know: insights from a digital storytelling facilitator training in Uganda”*. This Participatory Action Research (PAR) study assessed the modification of DST methodology, and identified the future potential of DST in Uganda and other East African settings (Yan et al., 2021).

Publication link: YAN, T., LANG, M., KYOMUHANGI, T., NAGGAYI, B., KABAKYENGA, J., WILLIAM, W., ASHABA, S., NEEMA, C. M., TUMUHIMBISE, M. & MUTATINA, R. J. G. H. A. 2021. *Let all know: insights from a digital storytelling facilitator training in Uganda*. 14, 1933786.

The DST which was funded by Wellcome Trust, UK ended in April 2021. The activities under this project have been incorporated into the HAY! Initiative.

11.9 Scaling up Mama Toto for Sexual Reproductive Health

Members of Digital Story Telling facilitators from both Uganda and Canada responded to a call for proposals issued by Canadian Collaborative for Global Health. The call was focused on co-creating potential solutions to the underlying barriers to effective data progress in areas of global health, human rights, and gender equality.

Rubirizi district health workers were oriented in January 2022. This brought this activity to a successful completion as Bushenyi district had been covered in 2021. A total of 276 (163F) health workers and support staff from both districts were oriented. This one- day- per- Cluster orientation of HF workers, aimed at creating awareness about the HAY! Initiative amongst these key players in Adolescent and Young People Sexual, Reproductive Health and Rights (AYSRHR). These sessions were co-facilitated by both HCU team and District Health Teams Health Unit Management Committees (HUMC) trainings were also completed for both districts, having begun in 2021. 251 (98F) participants were engaged during these HUMC trainings. These HUMC trainings were a good opportunity for members to interface with the District Health Team since they do not frequently get this kind of platform. Some HUMC members had been in service for 2 years but reported to have never undergone this training and did not clearly know their roles.

This training further introduced HUMC members to the HAY! initiative and their role as HUMC in prioritizing adolescent health interventions tailored to address existing adolescent health challenges and needs.

Community Health Officers (CHO) conducted follow up on HUMC workplans that were made by various HUMC members during their training. Some of action points on the workplans that were being followed up included;

Designing and installing sign posts at the health facility and in surrounding trading centers.

Community sensitisation and awareness drives which were included in workplans by all health facilities have since been carried out through churches and mosques, community dialogues, burials, parties, health unit outreaches, local council meetings, at health facilities, among others platforms.

Creation of Adolescent and Young People (AY) friendly spaces at various health facilities.

A total of 27 radio talk shows were held in 2022. These covered various themes including positive parenting, menstrual health, mental health, COVID- 19 vaccination campaigns, healthy relationships, alcohol and substance abuse, school program, among others. The shows were tailored to create awareness on the above topics; and how they affect adolescents, young people and the wider communities, and how they can best be improved. The radio programs were co- facilitated by HAY! team

member, District Health Team members, District Education Officers and Topic experts sourced by HAY! The communities welcomed these talk shows with good call-in engagements with topic experts during the radio programs.

Text message programming also continued to be carried out during this year. 48 messages were shared with young people and their care takers; 18 being a round started in 2021 and 30 being from a new round started in 2022. 508 (198F; 310M) and 2250 (990F; 1260M) were number of recipients for the first and second rounds of SMS sharing in 2022 respectively.

Focus Group Discussions (FGDs) were held in Rubirizi District with AY to seek their feedback on the first phase of SMS's and their input into the next phase. These were conducted in February 2022. FGDs were held with (20- 24) year olds, (15- 19) year olds and (10- 14) year olds; grouped by sex. A total of six FGDs were held.

A total of 2489 T-shirts and masks were distributed to Village Health Team (VHT) members. 1589 and 900 T. shirts and masks were distributed to VHTs in Bushenyi and Rubirizi respectively. 112 T-shirts were also distributed to VHT Supervisors District Health Team (DHT) members and District Heads of Departments for both districts. This was part of the equipping drive in order to support these actors to improve Sexual Reproductive Health and Rights for Adolescents and Young People.

Community Orientations that began in November 2021 were resumed and completed in 2022. Approximately 6696 (4059F; 2637M) community members were engaged during these orientations. These targeted VHTs, young people, religious leaders, opinion leaders and youth representatives among others. The communities were being oriented into the HAY! Initiative to leverage their support and commitment to the project. The orientations were co-facilitated by HAY! Community Health Officers, and area VHT supervisors, among other leaders.

HAY! Initiative conducted a Leadership and Management Training for Bushenyi and Rubirizi districts health facility In-Charges. This was one of the strategies to improve the general capacity at Health Center level to improve services to patients and clients especially adolescents and young people. 204 (116F; 88M) In-Charges were trained during this activity.

District AY work plans and budget reviews took place for both Rubirizi and Bushenyi districts in July 2022. HAY! Activities were successfully integrated into the respective district workplans for the 2022/ 2023 financial year while the 2021/2022 year's workplans were reviewed to assess completion of planned activities aimed at improving sexual, reproductive health and rights among young people.

A 5-day Health Management Information System's workshop was held in Mbarara to build Capacity of Health Information Assistants (HIA)

from Health Center III and IV's of Bushenyi district. This followed a 10-laptop computer donation made by the HAY! Initiative to Bushenyi District local government to fill the electronic data capture gaps that were present at health facilities. The Health Information Assistants (8F/ 1M) were trained in the use of the District Health Information System (DHIS2), also known as the electronic Health Management Information System (eHMIS).

A 2-day HMIS general training was also organised and held for health information assistants, MCH and AY focal persons. Participants were facilitated through sessions to enable them appreciate; Significance of HMIS in health service management, Importance of data quality and its attributes, Data Confidentiality, Use of the Adolescent Youth Friendly Services Register, Use of data for decision making among others. Participants appreciated HAY! Initiative in improving HMIS data quality and pointed out areas in which they requested for continued supportive supervision and mentorship. 45(35F; 10M) participants were trained in Bushenyi district while 36 (27F; 9M) were engaged in Rubirizi district.

A specific capacity building exercise was held for School Nurses, Senior Men, Senior Women and Headteachers of government secondary schools from Bushenyi and Rubirizi districts. 19 (5F; 14M) head teachers were oriented and 57 (37F; 20M) school nurses and senior teachers trained during this exercise.

This exercise was aimed at orienting participants on the significance of prioritizing AYSRHR, how to identify and address in-school AY's SRHR needs in a respectful way. While it is assumed that in-school AY are in a better position of getting the necessary support they need to address their SRHR needs, participants in this engagement revealed that in-school AYs face a number of challenges which are not being effectively attended to due to unsupportive school environment and policies. Follow-up activities were laid out in a workplan and these included; quarterly head teachers' engagements, school visits by DHT members and area Health Facility staff. These have all been steadily embarked on.

Health facility staff trainings were conducted for both Bushenyi and Rubirizi districts. These trainings targeted both clinical health workers such as; Midwives, Nurses, Clinical Officers and Medical Officers and also non-clinical health workers such health information assistants and laboratory personnel, porters and askaris from government and government aided health facilities. All participants were equipped with knowledge and skills on how to effectively handle and serve AY in order to increase their utilization of the various health services and these health facilities. A total of 368 (208F; 169M) health facility staff were trained in improving friendliness of services at health facilities. In addition, 264 (181F; 83M) clinicians were also taken through clinical training sessions in various topics such as; Gender Based

Violence, Post- Abortion Care, Menstrual Health, Family Planning, Adolescent Health, Mental Health, among others. A 1-day clinical practice session was administered to 102 (77F; 25M) clinicians from both districts to build their capacity in administering family planning uterine devices and arm implants in addition to using manual vacuum aspiration (MVA) equipment to provide post- abortion care.

Health facility action planning activities were begun at various health centers in Bushenyi district. These activities are being co-facilitated by Bushenyi DHT and HAY! CHOs. Some of the actionable areas being included in the various HF plans are; improvement of AY friendly services, community advocacy for out- of school AY in various income generating businesses such salons, metal fabrication, among others, engagement of stakeholders such as; church leaders, elders, family heads and opinion leaders.

With the objective of improving SRHR among AY through health education, health camps were organized in areas by different stakeholders after HAY! Engagements. VHTs and community leaders mobilized the AY while the area health workers with the help of HAY! CHOs conducted the rest of the required organization. Six (6) and three (3) AY camps were held in Bushenyi and Rubirizi districts respectively. The organising of these camps was spear headed by Health Facility In- Charges, the staff members, HUMC members, VHT members and some area political

leaders. Adolescents were informed of the services offered at the HFs and also told that they are delivered in a dignified manner. Other topics of discussion included Menstrual Health and practical sessions of making reusable sanitary pads. Leaders are also continuously using these gatherings to sensitise AY about income generating activities in order to eliminate idleness which was identified as one of the main factors leading AY to destructive behavior such as drug abuse and crime in general.

Various engagements between HAY! Team and the Ugandan Ministry of Health (MoH) have taken place. Dr. Jessica Nsungwa, the MoH Commissioner for Child and Adolescent Health, visited HCU-MUST in July 2022. She met various HAY! team members including; both Ugandan and Canadian HCU directors, Director, Global Health Projects- UC, Program Manager and Coordinator. The Commissioner was briefed on HAY! progress; Training materials, Community Job Aid, and publications were some of the materials shared with her. She commended the team of the HAY! guides and encouraged them to share these AY health materials widely. She challenged the team to develop a comprehensive implementation guide that can be utilised by other development partners or the government; this will foster more integration of development work. She also encouraged HAY! to consider doing some work in the fields of child marriages and AY with disabilities. She also encouraged the team to approach the Ministry of Health for

some content and materials that have already been developed for example on; Respectful care, Self-Care for Abortion, E-learning and E-Monitoring.

She recommended that HAY! program be introduced to; MCH cluster, Adolescent health working group, Adolescent health chat group, among others. She mentioned that HAY! could potentially host and showcase to; Community Health, Health Promotion, and Environmental Health teams. She also informed the team that there will be a Regional Assembly, the first of which will be in Mbarara and this would be a great avenue for HAY! to make presentations.

A virtual meeting was also held with Uganda MoH in July 2022. HAY! was represented by the PM who was also the meeting's main presenter. The PM presented the introduction to HAY! session which focused on the MERI approach, before highlighting key baseline findings and the HAY! Wheel. This meeting was chaired by Dr. Jessica, MoH Commissioner for Child and Adolescent Health. The feedback to the presentation was positive and members encouraged HAY! to align all intervention plans with the National Development Plan, National Strategic Plan and Uganda Vision 2040. It was also suggested that HAY! works with other sectors such as the Ministries of Gender and Education because the challenge to mainstream AY in all these sectors and many others has been identified and the need for a sharpened AY integration plan has been

acknowledged by various players. HAY! was also tasked to align its content with the Family Care Practices document which covers the life cycle of AY.

HAY! and HCU at large was requested to prepare what they intend to share as the ministry team meets and plans for our future engagements of learning and sharing at national level. HAY! - HCU was also invited to the MCH working cluster meeting which is regularly organized by Ministry of Health officials. This is a national platform utilized by various key players in MCH to obtain multilateral audiences and engagements to eventually influence policy. This will be a good opportunity for HCU to keep leveraging.

A 2-day engagement was held with all 10 (2F; 8M) of the Bushenyi District Health Team. The two days were mainly utilized to clarify roles of the team in AYSRHR using the Interactive Systems Framework, define what needs to be done differently at both personal and professional levels and to forge ways forward on how collaboration and coordination in a multi- sectoral approach system may be achieved. The engagement provided an avenue for the participants to discuss and come up with a number of ideas and action points in the context of the district in relation to Adolescents and Young People's health. The DHT pointed out that other stakeholders such as CDOs and Police could be critical in providing information about and improving AYSRHR. Various action points and metrics to measure progress

were determined for action and follow-up.

The HAY! Initiative's process evaluation activities at mid-term were conducted in Bushenyi district. A Health Facility Survey and Focus Group Discussions were held with 11 health facilities and various groups of stakeholders respectively; as a way of assessing how far HAY! has moved in attaining its goal of increasing readiness to improve comprehensive AYSRHR. The Health Facility Survey was conducted at two (2) health center 4s and nine (9) health center 3s. The Health Facility Survey was facilitated by DHT members accompanied by 2 research assistants sourced by HAY! FGD groups included; Female AY, Male AY, DHT, HF In-Charges, HF Staff, VHT Coordinators, VHT Supervisors, HUMC leaders and S/C or T/C leaders. Data analysis was done and information was prepared to be shared with stakeholders. Dissemination of results was begun and is still on going.

A one-day orientation was held with Bushenyi District Council members for the HAY! Initiative. This was at the recommendation of the District leadership and health office in order to create awareness and to bring Bushenyi District council on board and foster ownership of the HAY! Initiative. 31 (18F;13M) district council members were in attendance. The orientation was facilitated by the PM, Technical Team member and Bushenyi DHO.

A four-day training was held for VHT supervisors from Bushenyi

district in September 2022. Various topics that were aimed at improving service delivery and outcomes of AYSRHR in their communities were covered. A total of 40 (28F; 12M) VHT supervisors were trained. The VHT supervisors also prepared for the VHT trainings which were yet to start and were to be co-facilitated by them. Preparations included preparing for sessions and materials to be used in the trainings.

VHT trainings for Bushenyi district were also begun in September 2022. These are community wide engagements targeting all VHTs in Bushenyi district intending to cover sessions that enable them build both their general and specific capacities to help AY improve their SRHR. These trainings are on-going through to next year until all VHTs have been engaged and trained. So far, 1170 (935F) VHTs have been trained in Bushenyi district.

HAY! Field staff and senior trainers were facilitated in a 3-day training and mentorship engagement and HCU- MUST offices. Some of the sessions covered included; applying the Interactive Systems Framework (ISF) in HAY! Activities, how to integrate district health indicators into HAY! Deliverables, how to define and select model sites, among others. A reflect was also conducted on what has so far been done well and a performance measurement framework was developed to inform the next short-term and mid-term desired changes for the district for the three levels at which HAY! Implements; District, health facility and community levels.

11.10 Collaboration and Partnerships

Partner	Year established	Area collaboration	Outcome
University of Calgary/CPS	2002	Fund raising for research, community program implementation, program evaluation. All for knowledge translation.	A network of over 5000 VHTS that promote MNCH interventions. Several research publications involving MUST staff and research studies as mentioned in the report such as studies funded by IDRC (www.healthychilduganda.org)
Dalhousie University	2008	Micro Research for faculty capacity building	15 publications where MUST faculty are primary authors. Since 2008, more than 250 faculty staff has been trained. Teams of MUST faculty MR facilitators, coaches, reviewers and mentors have been developed. General research capacity development among MUST staff. Established a MR regional Hub which is hosted by IMNCH
Global Affairs Canada-GAC	Grant proposal was submitted in May 2018	Scaling Up Mama Toto for Sexual Reproductive Health & Rights in SW Uganda	\$1.38 million Canadian dollar project grant awarded; 2020-2024.

12. Library Department



12.1 Background

Mbarara University library started in 1989 with the founding of MUST in its core functions of teaching, learning, and research through the provision of information resources and services.

The library started from a humble beginning with the library building which would only house forty stacks with a book stock of 5,550 volumes most of which were donations. The seating capacity is 73 seats. There were four (4) members of staff manning it.



The first MUST Library(Prof. Kayanja, Kagwa W., & Mr. Bazirake S)

12 .1.1 Capacity of the library

The library building on the town campus has a seating capacity of 700. Originally, there was an existing structure with floor area of 234sq metres. Later the structure was extended by floor area of 1290sq metres. As it stands now, the library building sits on 1524sq metre i.e. 234 + 1290sq metre. Needless to say, the area reserved for future expansion is 3458sq metres. The building houses a collection of over 144,848monographs with an annual addition of about 200 textbooks as opposed to 2000 titles in

the previous years and the library subscribes to electronic information resources such as; e- databases of scholarly journals, eBooks, among others. There is also a book bank in the main library with a collection of basic textbooks for the taught courses.

The new library building in Kihumuro has a seating capacity of 1,500 which is double the capacity of the library on town campus. With the library building in the Kihumuro campus fitted with Wi-Fi and already in use, the challenge of space has been addressed for now.



The library structure at the city campus VS the library structure at Kihumuro campus

12.1.2 Vision

A centre of excellence in provision of information services for the advancement of knowledge.

12.1.3 Mission Statement

The Mission of Mbarara University Library is to support and supplement the teaching and research activities of the University through provision of information and related services.

12.1.4 Core Values

- a) Transparency
- b) Excellence
- c) Integrity
- d) Efficiency
- e) Accountability

12.1.5 Objectives

- a) To select and acquire the best and affordable current seminal world thought to support the diversified academic and professional fields offered by the University and provide

general support to national development.

- b) To effectively process, preserve, provide access to and/or disseminate information available in the house or through international databases and inter-library loans.
- c) To foster a caring and supportive environment in which service to customers is paramount.

12.2 Sections of the Library, their Objectives and Services

12.2.1 Circulation Section

The circulation section has the following Functions and Services:

- a) Registration of Library users
- b) Issuing borrowing cards
- c) Lending and Receiving books.
- d) Book reservation
- e) Current awareness (CA)
- f) User education
- g) Information/Help desk
- h) Suggestion Box
- i) Selective Dissemination of Information (SDI)
- j) Inter – Library Loans (ILL)



12.2.2 The Book Bank Section

This is a section where books are lent out to users for a long period of time usually a whole semester.

Objectives

- a) To ensure availability of basic textbooks to students against limited funds
- b) To develop a system capable of sustaining University education system amidst students' inability to buy/acquire correct textbooks.
- c) To promote effective sharing of books/resources among students.
- d) To effectively utilize the limited reading materials in the section.
- e) To develop students' ability to handle property loaned to them.



Students selecting books from the Book Bank Section

12.2.3 Short Loan Section

This section has collections of books, which are on high demand and are lent for a short period of time to be used within the Library. The collection consists of textbooks for undergraduate and postgraduate studies based on recommendations of the academic staff and departments. The section also includes the Thesis and Dissertations.



Staff entering Thesis and Dissertations in IR and carrying out shelve reading in Short Loan Section

12.2.4 Periodicals Section

The Periodicals Section is located on the ground floor and the collection includes the following:

- a) News letters
- b) Journals (print versions)
- c) Magazines
- d) Newspapers
- e) Reports
- f) Abstracts and indexes

Periodical literature is not loaned-out in most cases; it is read within the Library. However, it can be



Reading area in Kihumuro Campus Library

lent out for at least two days if a user shows a need.

12.2.5 Reference Section

The Purpose of Reference Section and Information services are:

- a) To develop and maintain an up-to-date, relevant and readily accessible reference collection.
- b) To meet the general information needs of the Library clientele, notably students and Faculty members.



12.2.6 Computer Labs for Post and undergraduate students

The learning centre was established in August 2004 through the collaboration between Lund University, Sweden and MUST, Uganda. After the winding up of the collaboration/project, the management of the centre was handed over to the library and it has become one of the sections of the library serving postgraduate students and there is also an undergraduate computer lab on the ground floor.

Services Include:

- a) Instructions on how to access electronic journals
- b) Information search skills training
- c) Usernames and Passwords to databases the Library Subscribes to
- d) Guidance on research literature review
- e) Guidance on how to use reference management softwares (Endnote & Mendeley)



Postgraduate students working on their research and Undergraduates doing assignments

12.3 Mini/Departmental Libraries and Book Banks

To create more room for information materials and reading space for the increasing number of students and staff, the library adopted departmental libraries and book banks approach. However, due to the need to free staff for operationalization of Kihumuro campus library, some mini libraries

were closed with Faculty of Interdisciplinary studies (Mini Library) and Faculty of Business and Management Science (Mini Library & Book bank) remaining operational.





Students making use of library facilities

12.4 The Department Staffing Level

In total there are 22 (13 F; 9M) permanent members of staff.



Some members of staff in the Department

12.4.1 Required staff for full operation of the Department

The table below shows the required library staff establishment for the smooth running of the library department on both campuses.

Job Title	Ideal No.	No. Filled	No. Vacant	Required Qualifications	Salary Scale
University Librarian	1	0	1	PhD	MB3
Deputy University Librarian	1	0	1	PhD	MB4
Senior Librarian	4	1	3	MISC/MLS PhD	MB5
Librarian	4	0	4	MISC/MLS	MB6
Librarian II	4	1	3	MISC/MLS	MB7
Systems Librarian	2	0	2	MSCIS	MB7
Systems/IT Administrator	2	1	1	BCS/Masters	MB7
Administrative Officer	2	0	2	BA/BSWASA	MB7
Assistant Librarian	8	6	2	BLIS	MB7
Archivist	2	0	2	BRAM	MB7
Binder	2	0	2	BFA	MB7
Personal Secretary	3	1	2	D.SEC.Studies	MB12
Library Assistant	10	6	4	DLIS	MB12
Office Attendant	2	1	1	"O" Level(MIN)	M20
Driver	1	0	1	"O" Level (MIN)	M20
Total	48	17	31		

KEY:

MISC - Masters in Information Science

MLIS - Masters in Library Information Studies

MSIS – Masters of Science in Information Systems **BCS** - Bachelor of Computer Science

BLIS - Bachelor of Library Information Science

BRAM - Bachelor of Records and Archive Management

BFA - Bachelor of Industrial Fine Art **DLIS** - Diploma in Library Information Studies

BSS – Bachelors of Secretarial Studies

DSS – Diploma in Secretarial Studies

12.5 Collection Development

12.5.1 Print/Hardcopy

The library print collection growth has continued to reduce over the years from about 2,000 titles added in the previous financial years to the current 880 titles. The total amount raised from the faculties for textbook purchase has equally continued to be inconsistent and it is on a downward trend as indicated in the table below. This could partly be as a result of budget cuts from the government, but also due to the availability of electronic information resources especially electronic books some of which are freely downloadable online.

Table showing the value of textbooks per year for the last five (5) years

Financial year	Amount
2021/2022	52,657,813/=
2020/2021	63,215,937/=
2019/2020	82,000,000/=
2018/2019	120,000,000/=
2017/2018	117,741,000/=

In 2020/2021 FY Unique designs was awarded the contract to supply textbooks.



Some of the newly purchased and processed books ready for shelving

NB: The 2021/2022 FY textbook procurement contract has been awarded and delivery is expected by the 2nd week of March 2023.

Student Library Book Ratio per faculty as at 31st/August/2022 is as below

Faculty	No. of Registered Student	No. of Books	Ratio
Faculty of Medicine	1,447	43,936	1:30
Faculty of Interdisciplinary studies	361	8,354	1:23
Faculty of Computing and Informatics	417	11,159	1:27
Faculty of Science	481	18,934	1:39
Faculty of Applied Sciences and Technology	405	9,039	1:22
Faculty of Business and Management Sciences	955	28,916	1:30
Total	4,066	120,338	1.30

The above table shows a slight change from the 2021 where student to book ratio total was at 1:34. Unfortunately, there was a drop in the ratio occasioned by some increase in student numbers as opposed to titles added to the collection. This trend needs to change for the better if we are to match the student book ratio of 1:40 required by the National Council for Higher Education (NCHE, 2014).

12.5.2 Electronic Books and Journals

MUST library draws its strength in terms of electronic information resources from being a member of the Consortium of Uganda University libraries (CUUL), who negotiates for low-cost electronic information resources which include among others, international databases, e-books, and scholarly on-line journal articles covering various subjects. The library continued to expand access to the electronic books and journal collection through payment of subscriptions. In the year ended, the library paid 3,812

dollars for electronic resources and 750,000 for CUUL Membership.

The collection contains approximately 60,000+ electronic books, journals, and databases from leading publishers around the world that are available for several purchasing models and subscriptions. Notable among these are the research for life databases (HINARI, AGORA, OARE, ARDI, and GOAL) emerald insight, Ebscohost, ProQuest, to mention a few which cover a wide research area. These resources are publicized on the library link on the University website, staff mail, and notice boards.



Undergraduate Students accessing electronic information materials in the library

12.6 Circulation/Issue/Information Desk Services

Circulation Services have undergone many changes since the 2021 year due to the effects of Covid 19 pandemic where physical access to the library was limited. The library collection is accessed through on-line public access catalogue (OPAC) commonly known as KOHA library management system. To continue serving our users, the library mainly supported users through

downloading softcopies of the basic textbooks which were then shared through the Learning Management System (LMS) with the support from the computing services unit. In addition to accessing these resources, the library registered users on My Loft platform for off campus access to library resources and other subscribed online resources.



The Online Public Access Catalogue (OPAC) Interface for browsing the Library Collection

Overall the feedback from students and some academic staff has been positive and we have worked to identify areas for improvement in the new library management system. Strategies such as better marketing to students are being employed thus creating awareness. We will continue to assess requirements and adjust as needed to best meet our patron needs. The library has also created facebook page and whatsapp group to engage library users to seek their views on the areas for improvement.

This is because 24 computers became obsolete and could not be used compared to 2021 when the department had 60 computers connected to internet. The number of computers is way below the requirement given that the demand for access to electronic resources is on the increase and yet not all users have their own ICT equipment to access the resources and services. NCHE (2014) Computer: student ratio is 1:5. This means MUST Library is not anywhere near the expected standards.

12.7 ICT Facilities and Services

In the year 2022, a total number of 36 computers were connected to internet.

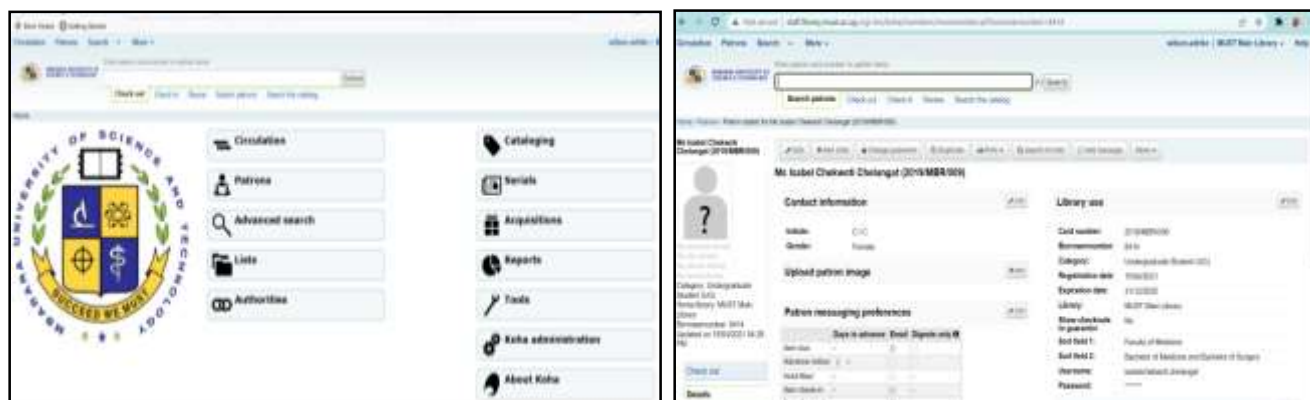


Students using Library ICT facilities and the resources in the Institutional Repository.



As was the case in 2021, Library Automation has been enhancement under the ICT Lot-3C of the ADB-HEST (African Development Bank-Higher Education in Science and Technology) initiative co-ordinated by the Ministry of Education and Sports. This was specifically through the provision of the following library-process management systems.

12.7.1A customized open-source Integrated Library Management System (ILMS) running on the popular Koha platform at library.must.ac.ug. The system provides for Online Public Access Catalogue which allows users access to available books (physical and electronic) in the University's library. It also manages the book circulation function of the library to track borrowing and returning of books by Staff and Students.



MUST Integrated Library Management System homepage patron view

10.7.2 A customized Repository of Online Digital Resources running on Dspace open-source software accessible at ir.must.ac.ug. The system allows for online publication and management of all research publications in the University. The main aim is to build a collection of all research outputs of the University, hence increase visibility. By December 2022, over 2,000 publications had been uploaded on the repository. We are very optimistic that by the end of 2023, over 3,500 publications will have been uploaded, thus contributing to the visibility of the institution.



MUST Library staff undergoing training in MyLOFT off-campus library resources access platform.

12.8 Library Committee

There are different terms used to describe the library committee. i.e. library committee is the management of a library, the government of a library, the library board, library trustee board, library advisory committee etc.

The MUST library committee is comprised of faculty members representing all faculties and students' guild. The committee meets every semester and it is chaired by a senior staff appointed by the Vice Chancellor to serve for two terms. In consultation with other stakeholders the Vice Chancellor appointed Mr. Perez Mujuni- Lecturer and representative FoBMS as the current chair of the committee.

12.9 Local and International Membership

At the local level, the University library is a paid-up member of the Consortium of Uganda University Libraries (CUUL). Through the consortium, the library is able to share the costs of electronic books and journals which would otherwise be too costly for the library and the University to afford.

At the International level, the library has partners such as Lund University, Cornell University, and University of Pretoria library, among others. The library is in the process of reestablishing contacts with Book Aid International to continue receiving support in terms of textbook donations. These partnerships have enhanced service delivery through document

delivery/supply where documents that are not available in our library are obtained from our partner libraries.

12.10 Success stories for the year ended.

The department registered a number of success stories as below.

- a) Allocation of 5% of development budget releases for equipment in the library.
- b) Installation of Wi-Fi in and around Kihumuro campus library
- c) More information materials uploaded to the Integrated Library Management System and Dspace Institutional Repository
- d) A number of trainings were organized for both staff and students.
- e) The library committee approved the move of faculty allocations for textbooks to the library vote for easy and timely commitment.

12.11 Challenges/Threats the department grappled with in the year ended

- a) Underfunding of library activities in terms of budget allocations
- b) Inadequate ICT facilities despite increase in the number of users
- c) Erratic power supply on both campuses
- d) Inadequate security for library resources
- e) Faculty under budgeting for textbooks and delays in commitment of the same
- f) High cost of broad band internet

- g) Lack of transport facilities to run the department activities especially the evening operations in Kihumuro Campus Library.

12.12 Proposed Way Forward

- a) There is need to provide transport facilities for the department particularly the transportation of staff on evening duty in Kihumuro Campus Library.
- b) Organize more trainings for staff and students especially in access to e-resources.
- c) Creation of a dedicated website for the library with link to the University website.
- d) Lobby for solar power system for the libraries on both campuses
- e) Secure and dedicated internet connection for the library to enable faster and easier access

- to the e-resources the library makes subscriptions to
- f) There is need to procure new computers to replace those that have become obsolete and increase the numbers to cater for the increasing number of library users.
- g) Faculties need to allocate more funds for the textbooks and periodicals required for all the taught programs.
- h) There is need to procure security gadgets (CCTV Cameras) to enhance security for library resources

12.13 Conclusion

In conclusion, the challenges occasioned by Covid 19 Pandemic notwithstanding, the year was a success for the department. We look forward to 2023 with high hopes for improved service provision to our patrons.

13. Directorate of Research and Graduate Training

The Directorate of Research and Graduate Training (DRGT) as established at Mbarara University of Science and Technology (MUST) is mandated to provide a home for graduate studies, stimulating the

growth of quality research and publications. In view of this and within the COVID-19 Pandemic environment, DRGT performed her activities.

13.1 Staffing level

Table 30: DRGT current staffing level

	Gender		Staffing gap
	F	M	
MGO	4	6	4 Accounts Assistants
Training Unit	4	1	1 Secretary, 1 IT & 1 Assistant Registrar
Total	8	7	7

13.2 Office Space

The DRGT building has 7 offices that are shared among the 15 staff. Thus the space is not enough considering the current Ministry of Health COVID-19 Pandemic Standard Operating Procedures (SoPs).

13.3 Re-accreditation of PhD Curricula

The PhD Curricula were re-accredited by the National Council for Higher Education (NCHE) following the Senate approval of the PhD Crosscutting Courses shown in Table below.

Table 31: PhD Crosscutting courses as approved by Senate

Course code	Course	Host unit	Core/ Elective
PhD 1101	Philosophy of knowledge	Faculty of Science	Core
PhD 1102	Advanced Research Methods	DRGT	Core
PhD 1103	Scholarly writing and Communication Skills	Faculty of Science/Faculty of Interdisciplinary Studies	Core
PhD 1201	Research Ethics	MUST REC/Faculty of Medicine	Core
PhD 1202	Computer application in Research	Faculty of Computing and Informatics Sciences, and Library	Core
PhD 1203	Institutional Pedagogy	Faculty of Science	Core
PhD 1104	Advanced Epidemiology	Faculty of Medicine	Elective
PhD 1105	Advanced Biostatistics	Faculty of Medicine/ Faculty of Science	Elective

The re-accredited PhD Curricula include the following:

- a) PhD in Business Administration
- b) PhD in Computing by Research
- c) PhD in Development Studies
- d) PhD in Chemistry
- e) PhD in Curriculum and Media Studies
- f) PhD in Educational Administration and Planning
- g) PhD in Mathematics
- h) PhD in Physics
- i) PhD in Psychology

The curricula that are still under consideration by the NCHE for re-accreditation include:

- a) PhD in Biology
- b) PhD in Biomedical Engineering
- c) Faculty of Medicine Doctor of Philosophy (PhD) Curriculum by Research

13.4 Development of PhD Supervisor database

With the objective of improving the student learning environment through improved supervision, DRGT developed the PhD Supervisors database in collaboration with the Faculties. Currently, the database has 77 Internal Supervisors (MUST staff) and 163 External Supervisors non-MUST staff working in other Universities/Institutions). This is a live database that is continually updated following PhD Admissions as well as when Senate pronounces that the student has satisfied the program requirements and ready to graduate. The database is structured by Faculty and Internal/External Supervisors. It is an essential tool utilized by the Admissions Committee to ably gauge the proposed supervisors' load at Admission of the PhD applicant. The database has the following variables.

Table 32: PhD Supervision Database

SN	Supervisor Names	Serial # PhD students supervised	Student name	Reg. #	Supervisor Specialization/ Research Interests

This is the first time in the history of the university to capture the specialization/research interests of academic staff. This gives an opportunity for students to be supervised by academic staff of similar research interests.

13.5 Coordination and Presentation of Student Marks

Following the presentation of student marks by Deans at DRGT Board, the Director presented marks for a total of 190 candidates to Senate Examination Committee who graduated in April 2021, as well as several others who were continuing students and yet to graduate.

The number of candidates who graduated in April 2022 is shown in the table below:

Table 33: Postgraduates who graduated in April 2022

Faculty	Program Category	Total
Faculty of Medicine	Masters	64
	PhD	4
Faculty of Science	Masters	32
	PhD	8
Faculty of Business & Mgt Science	Masters	32
	PhD	8
Faculty of Computing & Informatics	Masters	13
Faculty of Interdisciplinary Studies	Masters	12
	PhD	4
Total		177

13.6 Identifying Funding to Support Graduate Programmes

With the Goal of Enhancing the East African Community (EAC) Integration, the EAC Scholarship Programme which is an initiative by the EAC, the Inter-University Council for East Africa (IUCEA) and German Development Bank-KFW issued a call for universities to participate in 2019. The call targeted postgraduate

programmes in the areas of Mathematics, Engineering, Informatics, Science, Technology, and Business Science.

Again in 2020, DRGT responded to the call for the second cohort within the disciplines of Master of Science in Biology, Master of Science in Chemistry, and Master of Medical Laboratory Science. A total of 5 students were awarded scholarships and commenced their studies in 2021.

Table 34: IUCEA scholarship beneficiaries at MUST

Programs	Applications received	Applicants Recommended	2 nd Cohort awarded Scholarship & reported
MSc. Biology	62	30	2
MSc. Chemistry	43	33	1
Master of Med. Lab. Sci.	54	29	2
Total	159	92	5

IUCEA= Inter-University Council for East Africa; MSc=Master of Science

13.7 Admission of Postgraduate Students

During the year 2022, a total of 391 postgraduate students were admitted onto the following masters and Doctoral programs (see Table below).

Table 35: Postgraduate Admissions in 2022

S/N	Program	Total
I	Faculty of Medicine	
1	MMed. General Surgery	14
2	MMed. Obstetrics & Gynecology	17
3	MMed. Ophthalmology	7
4	MMed. Internal Medicine	8
5	MMed. Pathology	2
6	MMed. Dermatology	6
7	MMed. Psychiatry	3
8	MMed. Anaesthesia	4
9	MMed. Pediatrics & Child Health	15
10	MMed. Radiology	7
11	MMed. Ear, Nose and Throat (ENT)	4
12	MMed. Emergency Medicine	9
13	MMed. Community Practice & Family Medicine	1
14	Master of Pharmacy in Clinical Pharmacy	7
15	MSc. Pharmacology	4
16	MSc. Microbiology	5
17	MSc. Biochemistry	4
18	MSc. Anatomy	4
19	MSc. Physiology	2
20	Master of Public Health	36
21	Master of Public Health Research Ethics	5
22	Master of Medical Laboratory Science	16
23	Master of Nursing Science (Critical Care)	23
	Sub total	203
II	Faculty of Science	
1	Masters of Education in Educational Planning & Administration	10
2	MSc. Biology	22
3	MSc. Mathematics	10
4	MSc. Physics	13
5	MED in Educational Psychology	7
6	MSc. Chemistry	10
7	MED Curriculum Instructions & Media Studies	3

III	Sub total	75
	Faculty of Computing and Informatics	
	1 MSc. Health Information Technology	22
	2 MSc. Information Systems	12
	3 Master of Business Informatics	5
IV	Sub total	39
	Faculty of Business and Management Sciences	
	1 Master of Business Administration (MBA)	50
	2 PhD	12
	Sub total	62
V	Faculty of Interdisciplinary Studies	
	1 MA. Local Governance & Planning	8
	2 PhD	4
	Sub total	12

13.8 The Research Projects

Unlike the previous years where MGO persistently registered an upward trend in its projects portfolio, it witnessed a reduction in the incoming grants from 2020 through 2021 (see MGO report as Annex 1). This was attributed to the change in funding priorities by the funders as a result of the COVID-19 Pandemic.

13.9 Research Dissemination and Communication

Disseminating research findings remains a central activity at MUST. The dissemination strategies have included conferences and publications. The DRGT has successfully coordinated the three Annual Research Dissemination Conference (ARDC) in Nov. 2018, Nov. 2019 and April 2021. The statistics for 2021 are indicated in the table below.

Table 36: Theme, sub-themes and abstracts at the ARDC 2022

Year	Theme	# abstracts
2021	Theme: Transformative Research for development in a changing world Subthemes: 1. Transforming Health care access and delivery in a changing world 2. Interdisciplinary initiatives for Community health well-being	(i) Presentations by funders (ii) 35 Abstracts

3. Towards scientific validation and commercialization of traditional herbal medicine
4. Coping with a changing climate and environmental degradation innovations amidst demographic shifts
5. Promoting nutrition and food safety with value addition for sustainable livelihoods
6. Dynamics in social justice, governance and empowerment of local communities
7. Business management and entrepreneurship in turbulent times
8. Fostering inclusive and quality education access amidst frontier challenges of digital transformation

13.10 The PhD Symposium

In 2021, the call for presentation at the PhD Symposium was made at short notice due to uncertainty in the behaviour of the COVID-19 pandemic. Again, it was because of the pandemic that we limited the number of presentations while majority of the students participated virtually. Ultimately, a total of 20 students presented their PhD work including proposals and progress reports.

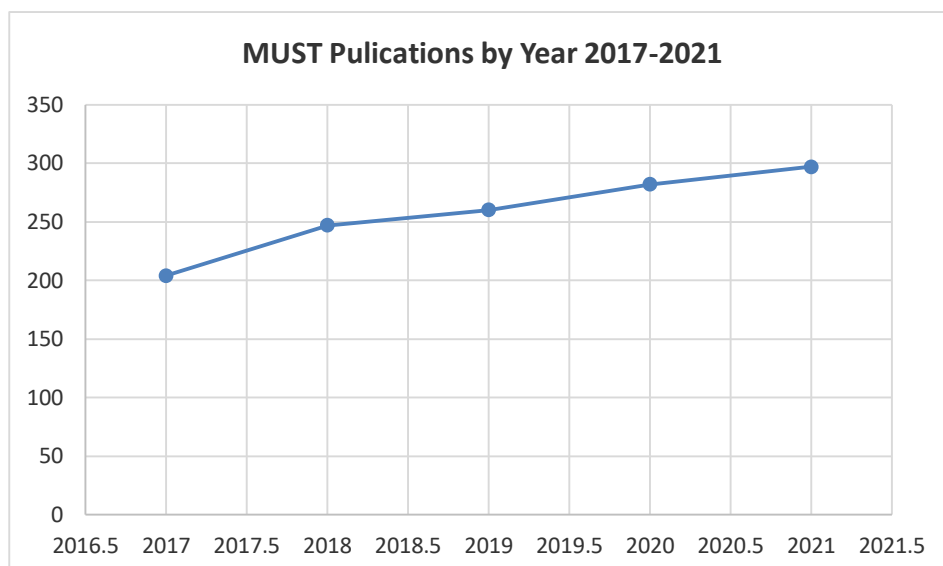
13.11 The Postgraduate Graduation Book of Abstracts

The “Book of Abstracts” is an initiative of the DRGT. Since 2017, this Book of Abstracts brings together the research carried out by postgraduate students who are granting

at the same ceremony. The abstracts book is ultimately uploaded onto the University website. This is an important means of communicating students’ research to the rest of the University community including those students looking for research topics as well as the wider public. In April 2021, the 177 abstracts were compiled into one Book of Abstracts corresponding with the number of postgraduate students who graduated.

13.12 Peer Reviewed Journal Publications, 2017 – 2021

As shown in the figure below, the number of publications by MUST staff and their collaborators have increased since 2017 when the DRGT was operationalized.



13.13 Collaboration in Research and Capacity Building

a) Collaboration in Research

i) Established Research Collaborations

MGH/Harvard, University of California, San Francisco, University of Virginia, British Columbia, Indiana University, University of Clarkson, University of Minnesota, University of California San Diego, Makerere University, Harvard T.H.CHAN School of Public Health ,Stockholm University, University of Cape Town, Kenyatta University, Addis Ababa University, Cairo University, Egypt, University of Lagos, pa, Nigeria, University of Pissa, Ethiopia and Non Governmental Organizations such as Toronto Sick Kids Hospital, Save the Children, Albert Einsten University, Vanderbilt, PENN State University (PSU), Leiden University Medical Centre and Delft University of Technology, Netherlands) , Perdue University USA, African Health Research Institute (ARHI), University of Southampton, Free University

Brussels, Lancaster, Northumbria, University of Derby, Glasgow, Bournemouth & Birmingham.

ii) Upcoming collaborations

Massachusetts Institute of Technology, Technical University of Munich, Germany, University of Zambia, University of Florida, Baylor University and John Hopkins University. These have submitted joint proposals with MUST researchers and are awaiting funding.

b) Collaboration in Capacity Building

i) Inter-University Council for East Africa (IUCEA)

IUCEA has continued to fund masters' students currently in the 3rd Cohort as described in Section 6.0 of this report.

ii) The Global Health Collaborative (GHC) /Massachusetts General Hospital (MGH)

The GHC/MGH continued to offer scholarships to masters' students in the Faculty of Medicine. Table 8 below shows the number of students who

were GHC/MGH scholarship beneficiaries since 2017- 2021.

Table 37: Students who received sponsorship thru GHC

S/N	Program	Number of students sponsored	Status
1	MNS	27	Completed
		11	Ongoing
2	MMed-First Mile	10	Completed
		23	Ongoing. They were 24 but one died recently
3	MMed Kayanja	17	Completed
		17	Ongoing
Total		105	

MMed= Master of Medicine, MNS=Master of Nursing Science

iii) Other collaborators in Capacity Building

Additional collaborators in capacity building include: East African Astronomical Research Network (EAARN) and MUST International Science Program for PhD and Masters students in Physics; Christoffel Blindenmission (Christian Blind Mission) for students in Ophthalmology, VIRIL-Belgium and the German Academic Exchange Service (DAAD) for students in selected disciplines.

13.14 Constraints

i) Staffing

The proposed DRGT Establishment was presented to Top Management,

Appointments Board and Council. However, up to now there is no feedback regarding the proposed establishment. It is our request that the proposed establishment be approved so that we are able to distribute the heavy workload the current few staff at the Unit are having. In the mean time we urgently need an IT person and a second Secretary to handle the heavy workload at the Postgraduate Training Unit which often peaks during Admission and Examination periods.

ii) Access Road to DRGT Offices

The access road connecting the Lower and Upper Circular Roads is impassable and needs to be worked on.

14. MUST Grants Office

14.1 Introduction

The MUST Grants Office (MGO) under the Directorate of Research and Graduate Training (DRGT) continues to make strides in the oversight of the management and finance administration of all grants awarded to MUST. The office continues to assist MUST researchers in obtaining and managing sponsored awards that support scholarly activities while ensuring proper stewardship of those

funds. This is done in close coordination with the MUST Central Administration and the different Faculties, in strict compliance to MUST policy framework. MGO further facilitates relationships with all Collaborators/Foundations, Corporations, and Government Agencies wishing to support programs and research at MUST.

Table 38: Grant Submissions made under MGO

MUST Grants Office (MGO)					
Grant Writing & Submissions Tracking Spreadsheet					
Grant Tracking #.	Name of the Research Project Applied for	PI	Organization	SDG addressed	NDP/III Alignment
Grant137 19987	Mbarara University of Science and Technology Data Science Training Program (MUST-DSTP)	Dr. William Waswa	NIH	SDG 4 – Quality Education	Programme 12: Human Capital Development
Grant136 90322	Mbarara University Infectious Diseases Translational Science (MITS) Research Training Program	Prof. Joel Bazira	NIH	SDG 4 – Quality Education	
Grant137 45378	Exposure To Mixtures Of Emerging Contaminants In The Environment' Are Communities In Uganda At A Health Risk?	Dr. Grace Birungi	NIH	SDG 3 – Good Health and Wellbeing; SDG 4 – Quality Education	
Grant136 50773	Integration Of Patient-Centered Mobile Health		NIH	SDG 3 – Good Health and	

Grant137 67785 Grant134 81349 Grant137 46713 Grant137 66055	Intervention(Support-Moms) Into Routine Antenatal Care To Improve Maternal Health In Uganda	Dr. Esther Atukunda		Wellbeing; SDG 4 – Quality Education
	A Social Media Mhealth Intervention To Improve Retention In Care For Adolescents And Young Adults With HIV In Uganda	Dr. Julian Adong	NIH	SDG 3 – Good Health and Wellbeing; SDG 4 – Quality Education
	Risk of esophageal squamous cell carcinoma in sub-Saharan Africa	Dr. Samson Okello	NIH	SDG 3 – Good Health and Wellbeing; SDG 4 – Quality Education
	Optimizing the diagnosis of post-tuberculosis lung disease in primary health care in Uganda.	Dr. Edwin Niwagira	NIH	SDG 3 – Good Health and Wellbeing; SDG 4 – Quality Education
	Use of Minion Mobile Sequencing Of Blood to Improve Meningitis Diagnosis in Uganda.	Prof. Joel Bazira	NIH	SDG 3 – Good Health and Wellbeing; SDG 4 – Quality Education



**MGO & MUST team after the assessment meeting with the aBIteam*

In all the partnership assessments done and later, award set up, MGO plays a vital role in facilitating the formulation of MOUs, contract negotiation and reviews working closely with the MUST legal department.

Overall, the office continues to register increasing research collaborations; including those that have been existing such as MGH / Harvard, University of California San Francisco, University of Virginia, British Columbia, Indiana University, University of Clarkson, University of Minnesota, University of California San Diego, Makerere University, Harvard T.H.CHAN School of Public

Health, Stockholm University, University of Cape Town, Kenyatta University, Addisababa University, Cairo University, Egypt, University of Lagos, pa, Nigeria, University of Pissa, Ethiopia and Non-Governmental Organizations such as Toronto Sick Kids Hospital, Save the Children, Albert Einsten University, Vanderbilt, PENN State University (PSU), Leiden University Medical Centre, Delft University of Technology, Netherlands, Agricultural Business Initiative (Abi) and Jhpiego Corporation among others.

MGO works closely with MUST REC to ensure strict adherence

to research ethics and has developed a post award management SOP which requires every project to have MUST REC/UNCST approval before the implementation begins, among other things.

In compliance with national regulations e.g. clause 44 (1) of Public Finance Management Act, 2015, MUST is required to seek authority from the Ministry of Finance and Economic Planning, Ministry of Justice and Constitutional Affairs and recently, Ministry of Education and Sports before receiving any funds from a foreign government or any international body; and MGO has ably ensured all the projects under its administration acquire timely clearance from the above mentioned government bodies.

Other Achievements:

i) Regional Centre of Excellence in Research and Administration

MGO has made a huge step towards establishing itself as a centre of

excellence in research administration and has hosted various institutions for benchmarking the good research administration practices in place so far. These institutions include Gulu University, Mountains of the Moon University, Busitema University and Kyambogo University. MGO has gone ahead to build capacity of some of these institutions' research administration offices through conducting training workshops e.g Gulu University and University of Jos, Nigeria.

ii) Grants Management Capacity

Staffing: MGO has grown multifold in terms of the number of grants and other related activities. To further strengthen the office finance section, the office hired Ms. Ulian Ahirweas the Office Accounts Clerk. In addition to maintaining the office records, Ms. Ulian is responsible for expenditure reporting and finance administration of some of the projects managed under the office.

Table 39: MGO Current Staffing

<i>Designation</i>	<i>No. of Staff</i>	<i>Gender</i>
Grants Manager	01 (<i>Acting</i>)	Female
Finance Manager	01	Female
Human Resource Manager	01	Male
Grants Officer (Post award)	01	Female
Accounts Officers	03	Males
Assistant Grants Administrator – procurement	01	Female
IT Officer	01	Male
Administrative Assistant	01	Male
Accounts Clerk	01	Female

Finance & Administration Systems: The process of acquiring the Enterprise Resource Planning (ERP) software as a step towards transitioning the office from a manual / paper based to an electronic grants management system is being handled by the Central Procurement Unit. We anticipate that this will further improve the grants management systems within the office.

Capacity building of MGO staff: As previously reported, three members of staff i.e. Jacqueline Karuhanga and Margaret Mbabazi have successfully completed more modules leading to

Certification in Research Administration under the MUST – UVA GII Program. The modules completed include Principles of Award Negotiation and Set up, Principles in Research Development, Principles in Pre Award Research administration, Principles of Post Award Financial Research Administration and Introduction to Clinical Research Management.

Infrastructure: Under the leadership of DRGT, MGO has been able to maintain its office space, furniture & equipment for proper functioning of the office.



One of the MGO offices at the entrance

15. Medical Simulation Centre (SIM For Life)



Strengthening and scaling medical simulation-based interventions to save lives in Africa

15.1 Overview

Medical simulation plays a central role in the training of health professionals and in the sustainability of critical life saving skills. Although the benefits of simulation training are known, this methodology of teaching and learning has been inadequately developed, harnessed, and practiced in Sub-Saharan Africa. In its initial simulation years Mbarara University of Science and Technology (MUST) established and functionalized a medical simulation center of excellence in collaboration with the KidSIM and SAFER simulation centers in Calgary and Stavanger respectively. This collaborative partnership resulted into the Simulation for Life (SIM for Life) project. SIM for Life is dedicated to: 1) the introduction, institutionalization and scaling of simulation methodologies in Africa, 2) researching the effect of simulation application to new paradigms affecting health and wellbeing, and 3) Quality improvement.

In addition to understanding the dynamics for the introduction and institutionalization of simulation into institutions of higher learning, this SIM for Life funding mechanism was to enable SIM for Life evaluate: 1) the effect of curriculum integration of

simulation on the clinical performance of preservice medical students using postgraduate students as simulation facilitators 2) the combined effect of simulation methods and feedback tools for health outcome change, 3) study the utility of simulation on gender, equity and hierarchy dynamics in clinical care and 4) the utility of the feedback device the Augmented Infant Resuscitator (AIR) on ventilation skills retention.

Despite the COVID -19 related lockdown interruptions, 5 additional universities have been empowered to introduce medical simulation as a method of teaching and learning. This Faculty conducted 693 simulation sessions across east and west Africa. A total of 180 front line health workers were trained in maternal and newborn care and peer learning with 72 trained as peer facilitators. These peer facilitators caused the conduct of 471 peer to peer simulation session in 36 health facilities. These sessions caused skills retention (in HMS) and or skills improvements after a covid – 19 disruptions. The use of technology for decision support and Quality improvement (QI) increased tech-data based QI projects in health facilities. Other effects of technology utilization are still under analysis.

Medical simulation-based learning (SBL) is effective; however, it requires adequate numbers of trained educators to conduct small group sessions. These trained educators are often few. Mbarara University of Science and Technology (MUST) has limited simulation trained faculty despite the many scheduled student simulation sessions. These sessions resulted from simulation integration into the teaching schedule as a requirement for clinical year students.

The utility of Postgraduate medical trainees (PGs) as simulation educators for undergraduate medical and nursing students has not been explored in Africa. We conducted a qualitative study to understand the barriers and enablers for postgraduate involvement as simulation facilitators, harnessed the learnings from the study to implement a structured postgraduate involvement in medical simulation program and tracked student experiences in simulation.

Identified barriers to postgraduate involvement as simulation facilitators included: competing time demands, negative attitude towards transferability of simulation learning, inadequacy of medical simulation equipment, and lack of integration of simulation faculty skills development training in the postgraduate curriculum.

“Maybe the biggest weakness since we came here is time. We are students but at the same time we are medical practitioners. Our biggest challenge is that we are overwhelmed by clinic work. The

hospital does not have medical officers, so it is our duty to oversee the medical services. Sometimes we may work the whole day or night. So, the biggest problem will be to find time to train these students” (Mixed FGD #3)

The Enablers to PG involvement were: perceived benefits of medical simulation to medical students, to postgraduate students and to in-service health personnel. Others included, enthusiasm of PGs to be simulation educators, improved awareness of the simulation educator duties, and favorable departmental attitude towards learning innovations.

“Am very comfortable with that, after all we’ve been assigning them tutorials and other ward teachings so it’s not an extra burden to say, but rather extrapolating the scope of what they have been covering, so, I have no objection” (KII HOD #01)

“I think us being Simulation Educators for undergraduates would be a good idea. I believe, we are the people who are with them all the time on ward. And we understand every other person’s weakness, actually.” (IDI PG student #2).

The percentage of simulation scenarios conducted by postgraduates increased by 85 percentage points between 2021 and 2022 (20% in 2021 to 37% in 2022). Figure 1 shows the trend of postgraduate student contribution to

simulation-based learning. Their contribution led to a 134% increase in simulation person visits from 964 in 2020 to 2253 in 2022. See Figure below.

Postgraduate involvement as simulation facilitators led to a 134%

increase in simulation person visits from 964 in 2020 to 2253 in 2022. Figure 2 shows the trends in simulation person visits, over the last three years. The percentage of simulation scenarios conducted by postgraduates increased from 20% in 2021 to 37% in 2022.

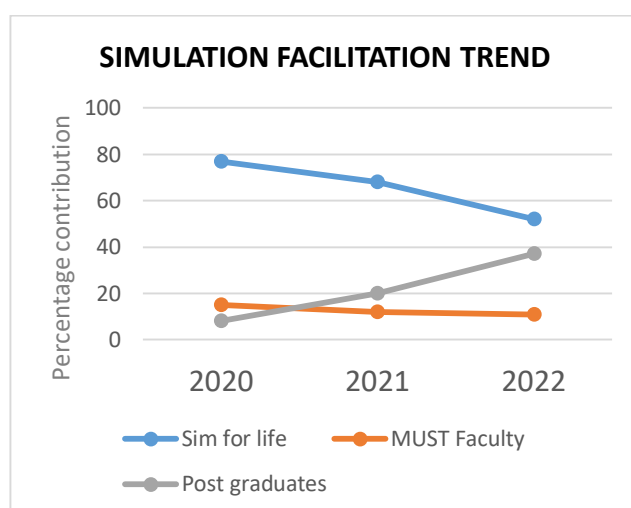


Figure 1: Graph showing trends in postgraduate contribution to simulation facilitation.

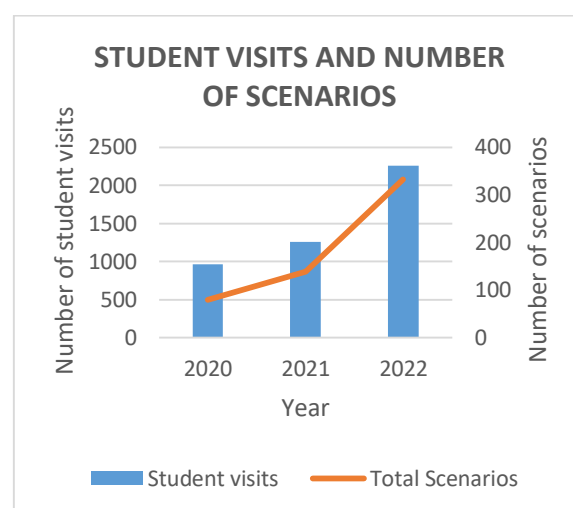


Figure 2: Graph showing annual number of students' person visits and simulation scenarios sessions conducted.

We leveraged lessons from the baseline qualitative study on barriers and facilitators to the involvement of postgraduates as simulation facilitators

to design interventions for their involvement. The table below provides a summary of the interventions.

Table 40: Interventions that enabled postgraduate participation as simulation facilitators

SN	Interventions for postgraduate involvement as sim facilitators
1	Use of department heads to suggest sim session scenarios for the semester
2	Departmental assignment of simulation coordinators
3	Request for departmental SIM coordinators to assign facilitators to scheduled student simulation sessions
4	Offering simulation faculty development courses for Postgraduate students.

The increase in simulation sessions was in part a result of a student petition to the Academic Registrar's office.

This petition demanded an increase in their simulation session frequency from twice a month to 4 times a month

(weekly). See Figure below for student opinions on desired simulation exposure frequency. During this transition from purely faculty-led to both faculty and Postgraduate-led simulation sessions, we continuously gathered learner feedback on their experiences in simulation. A total of 1885 student responses were analyzed. The quest for an increase in the frequency of scenarios featured

prominently. Simulation participants express learning in many domains and sim scenario phases as shown in table 2 below.

We will compare student performance scores of the simulation exposed cohort and historical cohort of similar class not exposed to simulation-based learning by June 2023.

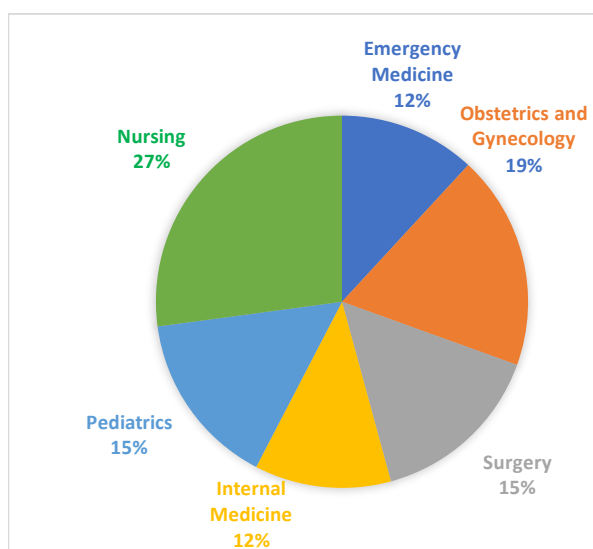


Figure 3: % departmental contribution of postgraduate sim facilitators.

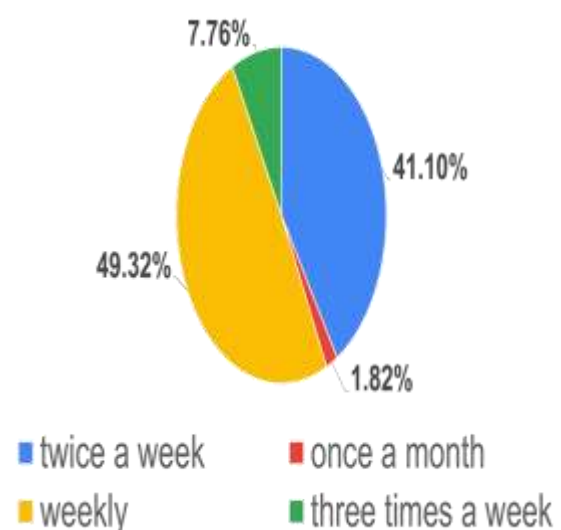
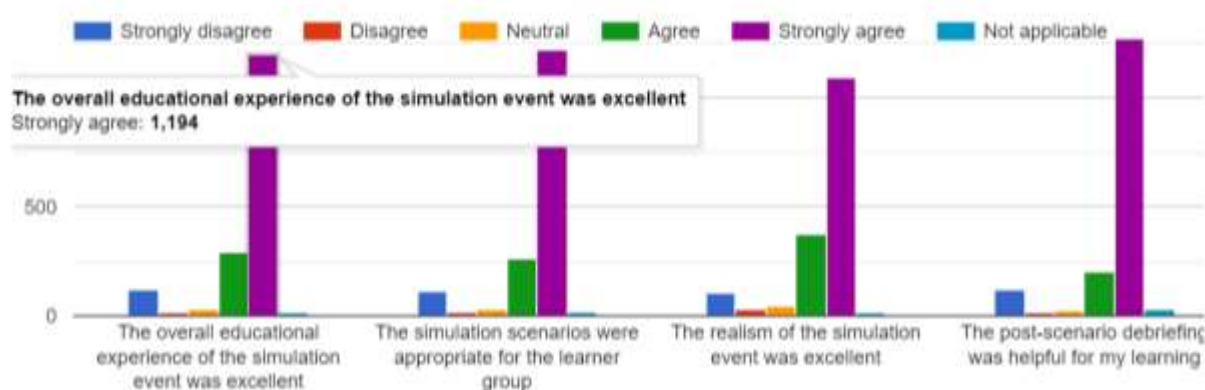


Figure 4: % of students' desired frequency of simulation.

Table 41: Student feedback on learned skills in medical simulation

SN	Learning domain / sim session	Participant Quotation(s)
1	Teamwork	“It has helped me to increase my alertness when dealing with an emergency, it has improved my collaboration level with team members” “Working in a team is the way to go because the patient gets helped in the shortest time possible”
2	Debrief session	“The discussion after the scenario.” “Management of organophosphate poisoning, dosing of atropine and antidote for organophosphate poisoning”
3	Communication	“Learning how to communicate to a consultant.” “Involving the mother in management of the child.”
4	Confidence	“Gives student full confidence to express their knowledge”
5	Hands on practice	“I had a hands-on experience that felt real and, in the end, I have learnt how to manage a patient with severe dehydration. I learnt to also ask for help where I don’t know or where am in doubt.” “How to do a good primary survey”
6	Realism	“The case was very realistic and a common scenario on ward” “The exposure to a real hospital situation and opportunity for learning from mistakes”
7	Critical thinking	“Understanding the drug dosages in children, Full assessment in TBI and thinking ahead of the patient condition.”
8	Managing anxiety	“How to control the pressure during patient management”
9	Safe environment	“It gives us chance to have a ward experience without harming anyone's life” “Getting to practice without fear of killing the patient” “It puts me in a position to manage a case I wouldn't be allowed to manage at the hospital”

The student experience in simulation is determined to be great. The majority of learners strongly agreed to questions regarding scenario fidelity for learning as shown in figure below.

**Figure 5: Student perceptions on their experiences in medical simulation.**

Using the Consolidated Framework for Implementation Research (CFIR), quality improvement (QI) and human centered design approaches, we have successfully introduced and caused the integration of medical simulation into the teaching timetables of 5 additional universities in East and West Africa. These universities include: Lira University (Uganda), Busitema University (Uganda), the Catholic university of Health and Allied Sciences – CUHAS (Tanzania), Muni University (Uganda) and the Federal University of Jos (Nigeria).

Prior to implementation, we conducted a readiness assessment in all four institutions and identified their perceived strengths and weakness. We found that institutions were confident in their ability to experiment and test Simulation Based Learning (SBL) and to observe outcomes of implementing this teaching method. Institutional leadership and intra-organization relationships were considered effective and supportive to SBL. On the other hand, staff inadequacies, insufficient

knowledge about SBL, the perception that SBL is not a priority in the institutional curriculum as well as lack of facilitation to evaluate the process of implementation of SBL were perceived as potential challenges to the implementation process. Some perceived medical simulation as difficult to implement due to inadequate resources including time, money, effort and technology. Others had skepticism towards institutional leadership support. With this pre-assessment, the implementation team had a task to creatively navigate the implementation process.

We trained faculty from partner institutions, and mentored them into simulation methodology trainers. They were encouraged to navigate institutional pathways to cause the introduction and integration of simulation as a method of teaching and learning. Table below, shows the number of faculty trained and simulation sessions conducted by 2022.

Table 42: Extent of faculty development and simulation implementation in partner universities

Institution	Year of introduction	Trained facilitators	Scenarios designed	Sessions conducted
Lira University	April, 2021	26	12	23
Busitema University	April, 2021	22	16	27
University of Jos**	Feb., 2022	57	18	12
CUHAS	Feb., 2022	62	31	33
Muni University	March, 2021	10	10	48
**Jos was closed due to a country-wide strike of academic staff for 8 months in 2022. All simulation sessions were peer to peer sessions conducted among the trained faculty				

MUST conducted a total of 550 simulation sessions over the last 3 years (79 in 2020, 139 in 2021, and 332 in 2022).

The culture of directive feedback. The interaction between students and lecturers / tutors has traditionally resulted into descriptive words like “Percussion”, and “Scrubbing” that are loosely conjured, often by students. “Scrubbing” is used to characterize rough and tough feedback especially in response to student mistakes. “Percussion” on the other hand is often used to describe “guess what I am thinking questions.” These are questions structured to generate a list or an answer already known to the lecturer/tutor. This kind of questioning is often used in oral exams but also applied at bedside teaching and other student – faculty teaching sessions. These teaching methods often generate the feeling that lecturers question and students answer but not vice versa. Faculty often provoke shame and blame. The Simulation for Life program teaches Advocacy Inquiry (AI) as the conversational strategy grounded in principles of reflective learning. The reflective learning in AI structured as the PAAIL – Preview (Let’s talk about...), Advocacy 1 (I heard /I saw/I noted...), Advocacy 2 (I think.....), Inquiry (I wonder / I am curious...), and Listen. AI has been met with numerous reactions from trained facilitators.

“How did you learn to speak so nicely? I felt very comfortable and listened-to during this session. This is how adult learning should be

conducted. I want to learn this.” (Female Senior Nurse Manager, Tanzania).

“I really like the PAAIL, it makes me understand my students, but this is not how I have been speaking with them. They will know I am talking strange, now. I need to keep practicing this.” (Male trained facilitator, Nigeria).

“What we have to do is to promote student centered learning where the learner is much involved and you as the teacher wait for the frames and at the end you discuss and teach.” (Male trained facilitator, Tanzania).

“When students arrive to my working area late, I used to ask “why are you late?” (In a harsh tone), but now, I will be more understanding and find out the learner frames.” (Female Nurse Tutor, Tanzania).

Opportunity and adaptation: The realization that AI is a great tool for conflict resolution, facilitation of interpersonal understanding and aversion of conflict has led participants to utilize this conversational strategy in meetings, communication with patients and in families.

“PAAIL your children, you will be amazed at how they think.” (Male simulation facilitator, Uganda)

“This morning, I just saw how this way of communication can work in real life. I had a patient who had refused to pay for accommodation in the hospital. I PAAILED the situation, he explained, and I expressed understanding of his situation. When I explained how I was looking

at it, he was very happy to pay and thanked me. All managers need to learn this method.” (Male Nurse Manager, Tanzania).

15.2 Medical simulation spaces

At the start of SIM for Life scale-up, institutions were at different levels of space dedication to simulation. MUST had two dedicated skills labs and one simulation center. Lira University had one skills lab but no simulation center. Busitema University had a simulation lab in the department of anesthesia and a skills lab in the nursing department. CUHAS had no dedicated skills and simulation space while Uni Jos had skills labs but no simulation lab. The SIM for life project scale – up model was designed to advise on space design, provide start-up equipment and manikins, and build staff capacity in simulation methodology. The requirement for space for simulation has been tackled differently by different institutions.

CUHAS, Tanzania: The university management used a tripartite collaboration between CUHAS, Assist International and SIM for Life to remodel a dedicated simulation and skills center. See Appendix 3 for CUHAS simulation center photos. CUHAS contributed up to 30% of the construction costs. A grant to assist international students supported the 70% cost of remodeling, audiovisual equipment, high fidelity manikin and other equipment targeting mainly anesthesia related skills. SIM for life supported with low fidelity manikins for maternal and neonatal skills

training and faculty simulation methodology development.

Lira University. Lira leveraged funds from another project to provide the preexisting skills lab a face lift for skills training. The renovated skills lab doubles as the medical simulation center with scenario spaces separated by curtains. Thoughts on the location of a dedicated simulation center have previously considered allocating space in their Hospital, Nursing Department or in a faculty of education building.

University of Jos: Three adjacent offices were equipped in to temporary simulation lab spaces. These spaces were used during simulation faculty development courses. Approval was obtained from the university management to dedicate and remodel the entire top floor of the college of health sciences library in to a medical simulation center. This is planned to be partitioned in to 7 scenario execution rooms and 9 debriefing spaces. This will enable simulation scenario exposure for 144 students in small groups of 6 persons. Each group of 6 persons will spend 1 hour in simulation (pre-brief, scenario execution and debrief). With this planned number of rooms, all the 24 student groups will complete their simulation exposure in a maximum allotted simulation time of 3 hours. This is contingent on availability of adequate facilitators.

Busitema University. They have continued to use the anesthesia simulation space for anesthesia scenarios. This space and the nursing skills lab are now used co-currently for

simulation when students from other departments are involved.

Opportunities and adaptations: Medical and Nursing accreditation counsels have suggested to recommend simulation labs and

Clinical skills labs have been rearranged and have worked as simulation spaces when scheduling is perfected. Utilization of large open rooms partitioned with curtains in to temporary simulation spaces have worked as an interim measure for simulation space at Muni University as well.

Curriculum integration and time tabling. At the start of medical simulation at MUST, the initial implementation of simulation was conducted with students as research volunteers. They attended simulation scenarios at times not scheduled for any activities in their teaching time table. During this time, a prospective cohort study was conducted that demonstrated the benefits of simulation on student knowledge, clinical skills and team work skills acquisition and retention. This study generated evidence for the benefits of simulation in a low resource setting using low fidelity manikins. This led to the official dedication of simulation time in student time tables at MUST and the inclusion of simulation exams in midsemester student assessments. Different opportunities have been utilized to create time for simulation in the institutions that are new to medical simulation. These included:

methodologies to be availed and used, respectively, at health training institutions. These recommendations can be leveraged to advocate for dedicated simulation spaces with institution stakeholders.



Picture 1: Simulation session in a temporarily partitioned space at a university in Uganda.

- a) Teaching some previously scheduled tutorials using simulation methodologies,
- b) Deliberate creation of dedicated simulation time in teaching time tables from the central time tabling committee,
- c) Intra-departmental rearrangement of teaching schedules and,
- d) Using simulation methodologies for Continuous Professional Development instead of traditional lecture methods.

“The university accepted simulation-based training, including integrating it into the daily training of students. We have already established a master timetable that all

departments use for student rotation in the SIM lab. Facilitators are currently doing departmental sensitization for the SIM lab in order to enhance the usage of the lab. This is being done in order to maximize the potential

of the lab. The office of DVC-ARC has requested that we draft the yearly budget proposal for SIM Center, which we are now doing". (Member of SIM team, CUHAS Tanzania).

Table 43: Simulation teaching schedule of CUHAS

SIMULATION TIME TABLE FOR MD AND BSN STUDENTS						
ACADEMIC YEAR 2022/2023						
	MO	TUE	WE	THU	FRI	TIME & ACTIVITY
	SET UP					7:30-8:00
AM	Paed-MD Senior Rotation	Paed-BSN 4	Paed-MD Senior Rotation	MW-Nursing Diploma	MW-BSN4	8:00-10:00
						SCENARIO
10:00-11:00	CLEAN UP & PREPARATION					10:00-11:00
		Internal -MD Senior Rotation	Paed-Nursing Diploma		Internal -MD Senior Rotation	PREPARATION
						11:00-1:00
						SCENARIO
MID	CLEAN UP & PREPARATION					1:00-2:00
						PREPARATION
PM	OBGY- MD Senior Rotation			Surgery-MD Senior Rotation	OBY- Residents	2:00-4:00
						SCENARIO

Language variations. All partner institutions are located in countries where the official language of instruction is English. However, in Tanzania, where the national language is Swahili, participants had different degrees of fluency in spoken English.

"I would like to thank Albert; he allowed our students to speak Swahili. It is true that we have a language barrier. If you allow students to talk Swahili, you get more information." (Female trained facilitator, Tanzania).

The strategy of the train the trainer (ToT) model employed in SIM for Life capacity development is a significant advantage to simulation scale-up across geographies. All selected ToT participants were fluent in English and

indigenous local languages. This allowed for simulation discussions to be conducted in the language of participants' greatest comfort when ToT graduates ran the courses.

Opportunities and adaptations: The ToT model allows trained local facilitators to utilize local language for teaching.

Medical simulation equipment and manikins. Medical simulation requires realism and scenario-buy-in. In developed countries, realism is enhanced by increasing manikin functionality by using computerized manikins. Computerized manikins tend to be expensive to buy, own and repair. Our work with low fidelity manikins shows that realism can be attained and participant scenario-buy-in upheld with a combination of a

detailed pre-brief and methodological fidelity tailored to scenario and manikin limitations. This has great significance for simulation in low resource settings.

“This felt real. You can see, I am sweating. There were things we forgot to do that I think I will never forget again in the management of a bleeding mother.” (Male Gynecologist, Uganda).

Skills labs have been a requirement for the accreditation of medical and nursing training programs. These skills labs are often stocked with different manikins for procedural skills demonstrations.

Opportunities and adaptations: Leveraging equipment and manikins in skills labs for medical simulation activities. We have used creative ways to increase realism in low fidelity manikins. These ways have included: 1) Using a foot operated string and pulley system to create convulsions, and 2) Development of a simple robotic mechanisms to automate breathing and pulsations in originally manual manikin systems like Neonatalie.

Three scenarios have been developed tested and fully revised. This study has started this January 2023. This delay was due to the significantly altered and shortened semesters in 2022 that did not allow the follow-up of a given class for the required simulation exposures. Up to 50 medicine and nursing students have been recruited to participate in the study.

In 2018, the Augmented Infant Resuscitator (AIR) device was licensed off to Philips that was to become the manufacturer and commercial distributor. The signed license agreement required Philips to deliver commercial devices within 12 months of the license (2019). However, Philips was challenged due to internal bureaucracy at the start and later by Covid – 19. The license was then terminated. MUST and Mass General Hospital have regained control of the license and provided a Boston based company, EB Innovations the options agreement to manufacture the AIR technology. Commercial-quality production has been completed and initial devices have already been delivered for the start of this objective in February 2023. The newly released devices are optimized for quality improvement and cloud computing. Cloud computing was a desired feature to enable collaboration across geographies. The AIR devices can now stream data in real-time to an android application that aggregates, and presents single episode and aggregate ventilation quality analytics. You can download the AIR device app at: <https://play.google.com/store/apps/details?id=com.lattice.air>. See Appendix 1 for screen shots of the AIR device application analytics and QI platform.

Our previous work had demonstrated in a randomized controlled study that short peer to peer simulation session in health facilities conducted by health facility providers themselves caused better skills retention. In this study, both intervention and control groups

received peer to peer learning. In addition to peer learning, the intervention group received the PRISMS application for newborn care. The PRISMS application provides a framework for newborn clinical assessment, instant clinical management suggestions and collated web-based data for quality improvement.

We trained 180 frontline health workers in Helping Mothers Survive (HMS) and Helping Babies Survive (HBS). HBS courses included Helping Babies Breathe (HBB), Essential Care for Every Baby (ECEB), and Essential Care for Small Babies (ECSB). Our peer-to-peer simulation methodology was taught to 72 peer facilitators; two

from each of the 36 health facilities and Hospitals. Peer facilitators were selected among providers trained in HMS and HBS. A total of 472 peer to peer sessions were conducted in 18 months. We conducted 3 support mentorship sessions at 7, 10 and 13 months.

Skills of ECEB and HBB decayed across study arms in the first 12 months. These skills showed recovery in the last 6 months with peer learning. We attribute the skills decay in the first 12 months to the known fact that HBS skills have been demonstrated to decay fast and to the covid – 19 disruptions. See Figure 6 and 7 for HBB and ECEB skills.

Peer learning is empowering and creating a model to fill the gap of expensive refresher courses. One participant who was not trained in HMS and HBS had this to say:

“I never trained in HBB but I can now resuscitate babies because my colleagues taught me”. (Midwife).

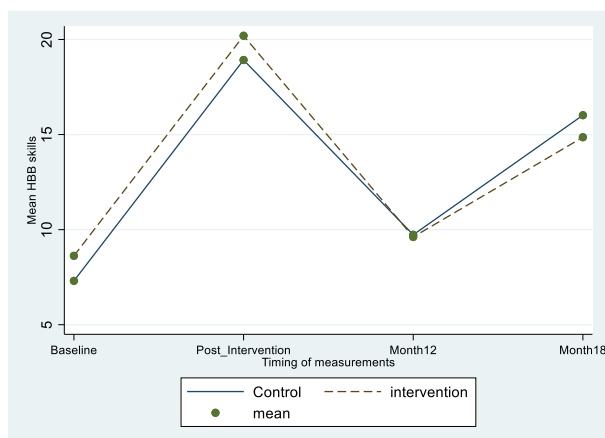


Figure 6: Trends of mean HBB skills score pre and post training, at 12 and 18 months.

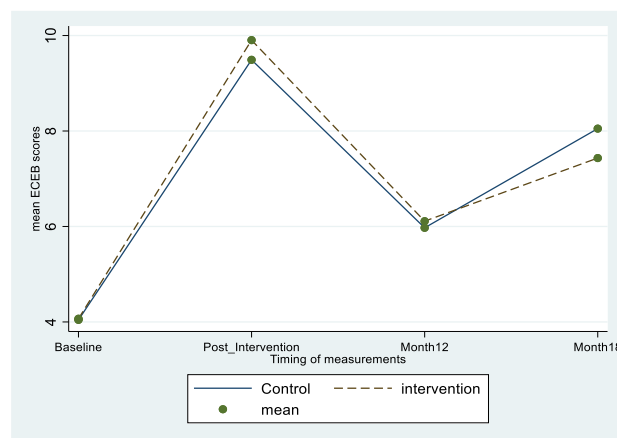
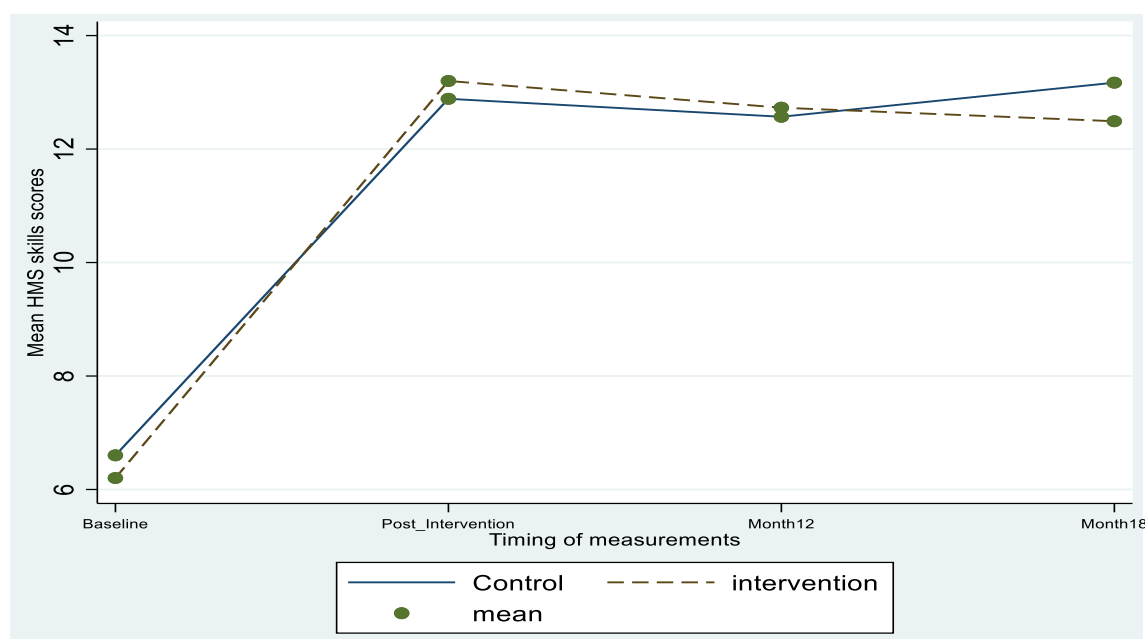


Figure 7: Trend of mean ECEB skills scores pre and post training, at 12 and 18 months.

HMS peer to peer skills were acquired and retained throughout the 18 months of the study as shown in Figure 8

Figure 8: Trends in HMS skills scores pre and post training, at 12 and 18 months.



Data on the effect of PRISMS utilization on provider clinical decision abilities is still being collated. It will be reported together with trends in newborn survival in both intervention and control facilities by June 2023.

15.3 SIM for Life as a Center of Simulation Excellence

SIM for life is building a growing legacy of excellence in simulation-based skills capacity development and quality improvement. Over the last three years, our center has been contracted by many national and multinational organizations to conduct

faculty development or frontline health worker capacity development. These organizations include the Uganda Ministry of Health, Save the Children International, Adara Development, Clinton Health Access Initiative, Musanacommunity development organization -Hospital, Doctors with AfricaCUAMM, and Seed Global Health. See Table 21 for details. These engagements have resulted into the training of 416 health providers in Northern, North Eastern, Southwestern, Western and the Central regions of Uganda.

Table 44:SIM for Life contractual engagements for capacity development

Organization	Course description	Number of courses	Health providers trained
Save the Children	Helping Babies Survive, Helping Mothers Survive, Peer to peer learning, Management of labor and delivery, Preterm labor and birth management.	9	246
Doctors with Africa, CUAMM	Helping Babies Survive, Peer to peer learning, Helping Mothers Survive, Neonatal fluid management, PRISMS use.	9	48
Seed Global Health	Simulation faculty development Course at Muni University	2	10
Adara Development	Helping Babies Survive training of trainers' course (ToT).	1	6
MusanaHospital through Global Health Initiatives Centura Health (GHI), USA	Helping Mothers Survive training of trainers' course	1	12
Uganda Ministry of Health (MoH)	Quality improvement using the Evidence-based practice for improving quality (EPIQ-10 steps).	1	16
Clinton Health Access Initiative (CHAI)	Helping Babies Survive and PRISMS training, deployment and mentorship	4	78

“Thank you so much for the report. I'm glad the right organization was identified for this particular training, we hope to incorporate the same kind of training into the HBS training because it really gave us enough time of interaction and it kept us close with the facilitators. None of us was left out throughout the training and each of us participated throughout. I promise on behalf of the rest of the team that we shall be the ambassadors of change in our facilities and in our action plan as a group we are to do CMEs at our different facilities to keep our colleagues updated because we learnt a lot of new things in addition to what we knew. May the Almighty Bless you All for the knowledge you added on us to save mothers” (Female ToT participant)

15.4 Recognitions and Awards

	Name	Gender	Type of recognition & Award
1.	Dr. Santorino Data	M	Awarded the Heroes in Health Award for the use of ICT to improve patient outcomes in Uganda, 2022. The Heroes in Health Awards are an initiative of the Ministry of Health, WHO, UNICEF and other health implementing partners.
2.	Dr. Albert Muhumuza	M	Awarded the Beverlee Anderson Education Scholarship to attend the International Meeting of Health Simulation (IMSH). IMSH is the world's largest simulation meeting.
3.	Simulation for Life team	M & F	Grant Award to the Simulation for Life team to conduct a study on "The effect of interprofessional simulation-based learning on communication skills of multidisciplinary student teams at two African Medical Schools". Grant funded by AFREHealth.
4.	Dr. Santorino Data	M	Awarded the "Rice 360 Innovation and Leadership in Global Health Award" by Rice University, USA for the year 2021.
5.	Ms. Josephine N. Najjuma	F	Awarded a Consortium for Universities in Global Health (CUGH) - LLMIC Travel scholarship to attend and present an oral abstract at the CUGH 2023 in Washington DC. Only 60 abstracts were selected for oral presentation at this conference.

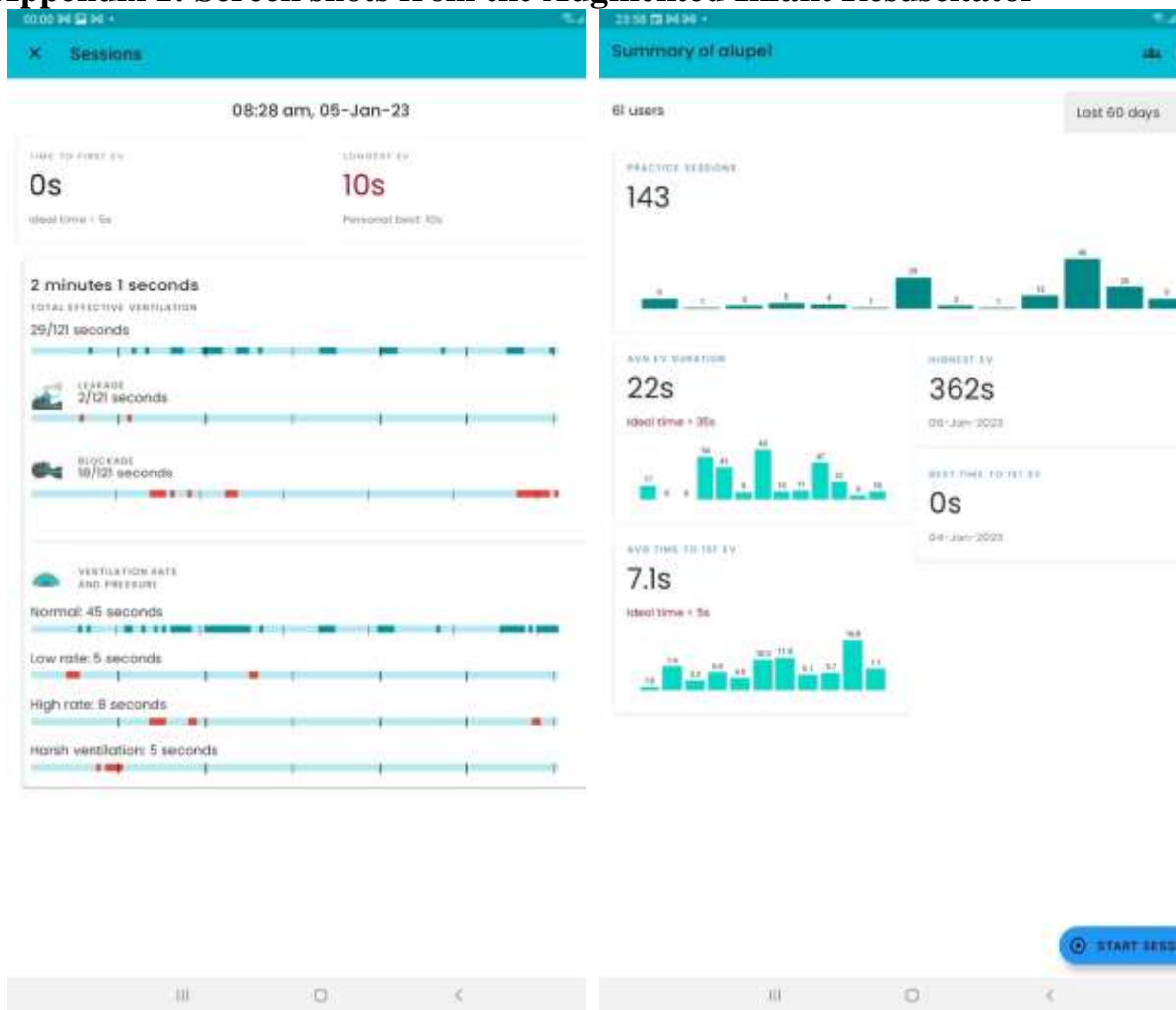
Conference presentations and publications

	Name	Gender	Publication
1.	Ms. Josephine Najjuma	F	Barriers and facilitators to adoption of postgraduate medical trainees as simulation educators: A qualitative study. Oral Presentation, Joint Annual scientific

			conference 19-23 September 2022, Munyonyo Kampala, Uganda
2.	Dr. Albert Muhumuza	M	Barriers and facilitators to adoption of postgraduate medical trainees as simulation educators: A qualitative study, Oral presentation, Uganda Pediatric Association Annual conference, Kampala, Uganda
3.	Dr. Albert Muhumuza	M	Understanding the barriers and enablers for postgraduate medical trainees becoming simulation educators: A qualitative study, Poster presentation International Meeting of Simulation in Healthcare(IMSH), Orlando, Florida
4.	Data S, Mirette D, Cherop M, Bajunirwe F, Kyakwera C, Robinson T, Josephine NN, Abesiga L, Namata T, Brenner JL, Singhal N, Twine M, Wishart I, McIntosh H, Cheng A.	M & F	Peer Learning and Mentorship for Neonatal Management Skills: A Cluster-Randomized Trial. <i>Pediatrics</i> . 2022 Aug 1;150(2): e2021054471. doi: 10.1542/peds.2021-054471. PMID: 35794462
	Muhumuza, A., Najjuma, J.N., MacIntosh, H. <i>et al.</i>	M & F	Understanding the barriers and enablers for postgraduate medical trainees becoming simulation educators: a qualitative study. <i>BMC Med Educ</i> 23 , 28 (2023). https://doi.org/10.1186/s12909-022-03995-3

Appendices

Appendix 1: Screen shots from the Augmented Infant Resuscitator



Appendix 1a: Figure showing single ventilation session analysis by the AIR device.

Appendix 1b: Figure showing graphical group ventilation quality analysis

Appendix 2: Screen shots from the upgraded PRISMS application

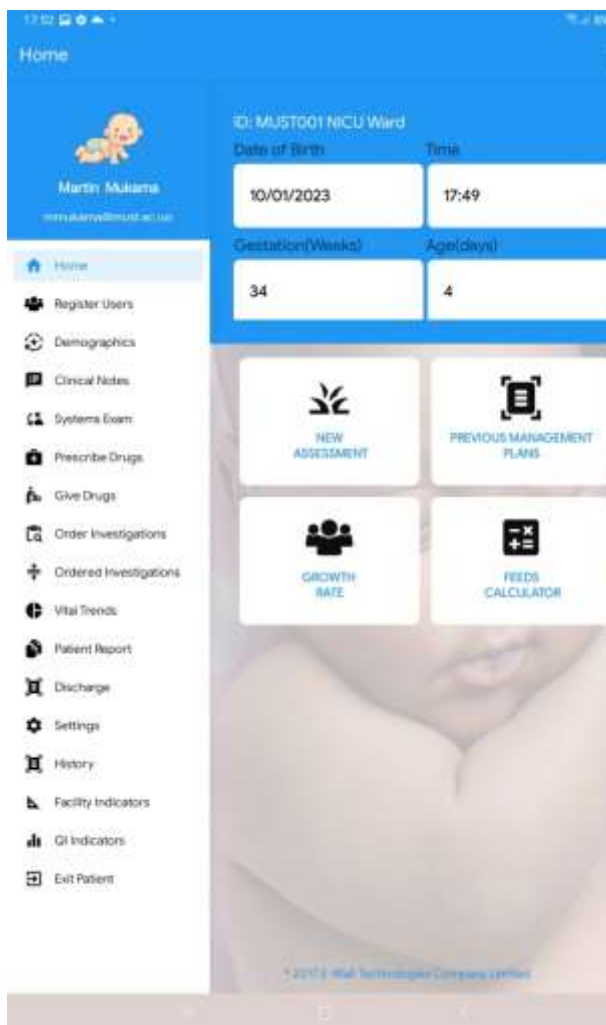
PRISMS's monthly newborn indicator reporting form.

PREVALENCE OF THERMAL INDICATOR	
Extremely low (< 35.5)	0% (0/2)
Hypothermia (35.5 - 36.9)	100% (2/2)
Normal (36.5 - 37.5)	0% (0/2)
High Temperature (> 37.5)	0% (0/2)

GROWTH RATE	
Total Number of Babies Assessed with PRISMS	2
Number of Babies Assessed on Multiple Days (BA-MDs)	0
Excessive Weight Loss Among BA-MDs	0% (0/0)
Adequate Weight Gain Among BA-MDs Aged > 14 Days	0% (0/0)
Inadequate Weight Gain Among BA-MDs	0% (0/0)
Adequate Growth Among BA-MDs Aged 0-14 Days	0% (0/0)

GENERAL REPORT (TOTAL ADMISSION, DEATHS)	
Total Number of Admissions in NICU (Based on selected date)	3
Total Number of Babies discharged through PRISMS in NICU (Based on selected date)	0
Percentage of babies discharged through PRISMS in NICU (Based on selected date)	0% (0/3)
Total Number of Deaths in NICU (Based on selected date)	0% (0/3)
Current Number of Babies in NICU	5
Total Number of discharges through PRISMS in NICU (Cumulative)	0% (0/5)
Total Number of deaths in NICU (Cumulative)	0% (0/5)

PRISMS's dynamic quality improvement indicator dashboard.



PRISMS's upgraded individual patient home page.

PRISMS's upgraded and simplified patient assessment framework.

Appendix 3b: Photos from health facility-based activities



Helping Babies breath peer to peer session in a health facility.



Dr. Flavia overseeing a peer-to-peer practice session in a rural health facility.



A team of midwives in a community health facility practice management of postpartum hemorrhage using simulated peer to peer methodology.

Appendix 3c: Photos from faculty development courses



Dr. Ndaboine, a staff of CUHAS teaching medical simulation theory at CUHAS, Tanzania.



Staff of Muni University participate in a simulation scenario designed by their colleagues during a faculty development course.



A medical simulation scenario being conducted in a repurposed anatomy laboratory using patient screens to create a scenario execution room.

Appendix 3d: Photos from health facility activities – PRISMS and QI.



Ms. Shifra from the SIM for Life team facilitating a EPIQ – 10 steps process for quality improvement in a health facility.



Ms. Shifra conducting a mentorship session during a ward round led by midwives in a health facility.



Midwives assessing and managing a newborn baby using the PRISMS technology.

Appendix 3e: CUHAS simulation lab photos and other partner activities



The inside corridor of the CUHAS medical simulation center



Photos showing one of the debriefing rooms at the CUHAS simulation center during a training opening ceremony by the Deputy Vice Chancellor Academic Affairs.



Professors Nalini Singhal and Douglas McMillan from the university of Calgary interact with simulation exposed students of Lira university.

16. PHARMBIOTRAC ACEII

16.1 Overview

Pharm-Biotechnology and Traditional Medicine Center (PHARMBIOTRAC) is an Africa Higher Education Center of Excellence (ACEII) at the MUST, Uganda. The Center provides a regional platform to deliver quality post-graduate education & training, and build collaborative research capacity in the field of innovative natural drug/product development, including exploring the use of indigenous knowledge and medicinal plants in Africa. The overall goal of the center is: **To build a critical mass of specialized and skilled human resource that can advance traditional medicine and Pharm-**

Biotechnology for the socio-economic development of Africa. PHARMBIOTRAC provides technical and financial support to selected, research-focused and qualified candidates to pursue their MSc, PhD and innovation incubation programs aimed at achieving the goal of the centre. Teaching, mentoring, and supervision of students is provided by a joint team of multinational faculty and staff from partner Universities within Africa and other parts of the world, as well as senior technical experts from relevant industries, private sector partners and research institutes globally.



Dr. Clement Ajayi, Training Students in HPLC usage



Dr. Rapheal Wangalwa is preparing plant extracts for analysis



A group of Undergraduate Pharmaceutical science students conducting practical's at the PHARMBIOTRAC Production lab, instructed by Jimmy Angupale



Jimmy Ronald Angupale is preparing plant extracts for analysis



Eng. Anke Weisheit demonstrate sustainable harvesting



PhD Graduation PHARMBIOTRAC 2022

16.2 PHARMBIOTRAC Incubation Hub

PHARMBIOTRAC runs an Incubation Hub which aims at supporting academicians, students and innovators to start-up businesses, develop, register and commercialize trademarks, copyrights and patents in an attempt to transform universities as major drivers of the regional economy. Since inception, the hub

managed to incubate 30 start-ups companies, some of them headed by females with a range of natural products in the area of herbal medicine, natural cosmetics, nutraceuticals, biopharmaceuticals, peptide-based products, pharmaceutical ingredients, etc.

Selected images of Prototypes under External Innovations/Products by Incubates (Cohort 1)



Selected images of Prototypes under External Innovations/Products by Incubates, (Cohort 2)



16.3 Key Achievements in Financial Year 2022/2023

The following are key achievements of the reporting period.

S/N	Project focus area	Summary of output	NDPIII Alignment	SDG Addressed
1	Training highly skilled and specialized professionals in traditional medicine and Bio-Pharmaceuticals	18(3 [16.7%] female & 15 [83.3%]male) Master Students Enrolment and Performance (Regional and National)	[1] Ensure healthy lives and promote well-being for all at all ages (SDG3); [2] Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all (SDG4); [3] Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (SDG9); [4] Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development (SDG17).	[1] Enhance value addition in key growth opportunities (SO1); [2] Strengthen the private sector to create jobs (SO2); [3] Enhance the productivity and social wellbeing of the population (SO4)
2	Partnership and collaborations	Partnership MoUs signed for collaboration in applied research and training entered into by PHARMBIOTRAC/MUST with: National-Maganjo, Kampala City; Regional-Gary Holmes HOSPITAL and University of Buea, Cameroon		PHARMBIOTRAC operations fast-tracks the realization of NDP III
3	Advancing Regionalised Cutting-edge research	3 International Accreditation of Programs with ASIIN GmbH, Germany: [1] Master of Science in Pharmacology (Msc.Pharmacol); [2] Master of Pharmacy (Clinical Pharmacy) (Mpharm- Clin. Pharm.), and [3] Master of Science in Pharmacognosy and Natural Medicine Science (M.Sc. PNMS).		Programmes including [1] Agro-industrialisation [2] Innovation, Technology Development, and Transfer, [3] Manufacturing [4] Energy Development and [5] Mineral Development.
4	Internationalisation	51 Faculty and Students exchanges to promote research and teaching with national and international institutions		There is a lot the research institutions gain from these partnerships and
5	Advancing Regionalised Cutting-edge research	16 Internationally recognized research publications in disciplines supported by PHARMBIOTRAC		

6	Revenue Generated:	Amount Received from IDA funds: USD: 211,000, and Amount of Externally Generated Revenue: USD164,017			a lot more the productive sector/industry and the community gain from such collaborations thereby contributing to the overall transformation of the country.
7	Private Sector Industry Collaborations - Key Sustainability Pathways	The Friends of PHARMBIOTRAC Foundation (FPF) is a 501(c)(3) tax exempt non-for-profit organisation registered as a public charity in the USA with Employer Identification Number (EIN #): 88-3446909. The organization is also incorporated as a non-for-profit organisation in Uganda with the registration Number 8002003766450, and also registered with the National Bureau for NGOs with registration number 7276 and an operation permit number 8655. The Foundation was established as a sustainability measure for the Pharm-Bio Technology and Traditional Medicine Center (PHARMBIOTRAC) which is an Africa Higher Education Center of Excellence (ACEII) at the Mbarara University of Science and Technology (MUST), Uganda.			
		Funding by BRIDGIN Foundation: Grant award of USD40 million for construction of ultramodern facilities for income generation (High-Tech Innovation Incubator and Contract Manufacturing Center) at MUST.	SDG	4	– Quality Education



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Table 45: Innovations/Products that have been Developed by Individuals (Incubatees), 2021 (Cohort 1)

SN	Teams	Team Leader (TL)	Gender	Country	Comment
1	Ghee Products	Jimmy Angupale	Male	Uganda	ACE Awardees
2	Herbal Pain Tincture	Ivan Kambugu	Male	Uganda	
3	Beetroot Yoghurt	Allan Muhumuza	Male	Uganda	
4	Insomnia treatment	Aisha Nakasuja	Female	Uganda	
5	Songa Extra Energy Drink	Richard Onencan	Male	Uganda	
6	Ineza Virginal Wash	Doreen Nzaire	Female	Uganda	
7	Fish Peptides	Hedmon Okella	Male	Uganda	
8	Coffee Beverages	Anyase Ronald Amaza	Male	Uganda	
9	Coffee Skin Care Products	Annet Nyakisiki	Female	Uganda	
10	Essential Medicines	Chomi Adiyemi	Female	Nigeria	
11	Lemon Aftershave	Hillary Nahurira	Male	Uganda	
12	Essential Oils for Animal Treatment	Noah Waisinde	Male	Uganda	ADB/ RECAP Awardees
13	Glucose Stabiliser-Type2 Diabetes	Charles Muzahura	Male	Uganda	
14	Acne Skincare Products	Lina Mathew	Female	South Sudan	
15	Victor Pain Free	Victor Kansiime	Male	Uganda	

Table 46: Innovations/products that have been developed by individuals (incubatees), 2022 (Cohort 2)

SN	Teams	Team Leader (TL)	Gender	Country	Comment
1	Kachiks formula	Geoffrey Kachiko	Male	Ugandan	ACEII Awardees
2	Kafresh	Jean Paul Nageri	Male	Ugandan	
3	Classic herbal syrup	Ghad Atuhaire	Male	Ugandan	
4	Black jack herbal tea	John Busingye	Male	Ugandan	
5	Bighen powder	Evans Kato Tusubira	Male	Ugandan	
6	Rheumaheal	Ivan Kahwa	Male	Ugandan	
7	Gashom aloevera jelly	Gashom Muganga	Male	Ugandan	
8	Pearly Jelly/ NOVACAP	Alex Nuwamanya	Male	Ugandan	
9	Neem Plus Herbicide	Hilda Ikiriza	Female	Ugandan	
10	Growth and scalp soal oil	Emily Musiimenta	Female	Ugandan	ADB/RECAP Awardees
11	Lip balm	Hellen Birungi	Female	Ugandan	
12	Bidens Plus Spray	Amos Oyuru	Male	Ugandan	
13	Teeth Dr.	Kintu Muganga	Male	Ugandan	
14	Standardised anti malarial poly herbal srup	Catherine NUWAGIRA	Female	Ugandan	
15	Anti Diabetes Powder	Eric Lubuulwa	Male	Ugandan	

16.4 NDP III Alignment

- Enhance value addition in key growth opportunities (SO1)
- Strengthen the private sector to create jobs (SO2)
- Enhance the productivity and social wellbeing of the population (SO4)

Therefore, PHARMBIOTRAC operations will fast-track the realization of NDP III Programmes includes 1) Agro-industrialisation; 2) Innovation, Technology Development and Transfer; 3) Manufacturing; 4) Energy Development; and 5)

Mineral Development. There is a lot the research institutions gain from these partnerships and a lot more the productive sector/industry and the community gain from such collaborations thereby contributing to the overall transformation of the country.

16.5 SDG addressed

- a) Ensure healthy lives and promote well-being for all at all ages (G3),
- b) Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all (G4),
- c) Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (G9),
- d) Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development (17).

Future details of PHARMBIOTRAC activities relating to FY 2022/2023 are available at:

- PHARMBIOTRAC website:
<http://pharmbiotracs.must.ac.ug>
- Friends of PHARMBIOTRAC Foundation website:
<https://pharmbiotracsfoundation.org>



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17. Centre for Innovation and Technology Transfer

17.1 Introduction

Mbarara University of Science and Technology (MUST), Centre for Innovation and Technology Transfer (CITT) is the lead innovation unit approved by the MUST University Council in March 2018. It is premised at initiating a ground for innovations and technology transfer at MUST with a key focus on prototyping and commercialization and experiential learning through skilling Uganda. The Centre envisions at becoming ***“a global centre of excellence in affordable technology innovation and commercialization, skills development and entrepreneurship”***. The mission is to ***“create a multidisciplinary ecosystem to inspire, nurture and promote the conversion of innovative ideas into commercially viable and sustainable products and businesses”***. The CITT is structured under three departments- prototype and technology development; experiential learning and skilling; and commercialisation, manufacturing and contract services. In 2022/2023, a lot was achieved in areas of policy and system development, capacity building of innovators, awarding seed grants for prototype and product development and increased partnership and collaborations. This was possible with the help of university funding and the very first Research and Innovation funding that has generated tangible high-tech prototypes and products

some of which are already on the market.

17.2 Strategic Objectives of CITT

- a) To develop capacity and nurture the spirit of innovation, entrepreneurship and technology transfer among MUST staff, students and the community
- b) To provide additional training to less skilled and unskilled graduates and prepare them to apply knowledge to experience with new skills, new attitudes and or new ways of thinking.
- c) To source for funding towards innovation, technology transfer, retooling and skills development activities at MUST
- d) To develop partnerships between academia and industry that will accelerate innovation, technology transfer and commercialization
- e) To cultivate capabilities suiting emerging job markets and build entrepreneurship spirit and business management competences among employable groups to create employment for themselves and others.
- f) To establish a job recruitment and selection centre for different institutions, organizations and agencies.

17.3 Achievements in 2022/2023

The following areas have been achieved as key deliverables for Financial Year 2022/2023.

17.3.1 Scientific and Product Development Workshops

Two scientific writing workshops were conducted for 22 innovation teams in Quarter one and two. In Quarter three, we conducted 1 Product Development Workshop for 9 innovation teams of which 7 innovation teams were funded to generate products. In Quarter four, 10 teams were trained and 1 team has been funded to generate a product. In total, we were able to select 6 innovation teams for funding to develop prototype and 8 innovation teams for product development.

During the workshops, innovators were taken through lessons on how to develop competitive concepts, articulate the innovation

problems and write fundable proposals with clear problem statements, budgets and business canvas models based on strong commercial viabilities, product development processes, standards and quality assurance, registration and certification processes. The teams were reviewed in various steps that included; the administrative review, scientific writing workshop, and final Project Qualification Requirement (PQR). Various teams focusing on community pressing challenges in areas of health, business, ICT, Engineering, Agriculture and Pharmacology were trained. This training helped to equip innovators with additional capacity to develop good proposals for other funding opportunities. For instance, out of the 41 teams trained, 14 teams received funding from MUST while 3 teams have already received funding outside MUST.

17.3.2 Development of High-Tech Prototypes

The 6 teams below were the recipients of the 2022/2023, Quarter 1 and Quarter 2 CITT seed grants and have been able to generate prototypes from their innovative ideas. Each team received UGX 6,000,000 (Six Million Shillings).

S/N	Team	Innovation	Team Leads	NDPIII Alignment	SDG addressed
1	Peinzy App	A financial empowerment platform	Rennie Bakashaba	Strengthen the private sector to create jobs (SDG2)	Industry, innovation & infrastructure (G9)
2	Pay Power Socket	A cost-effective access to	Kauta John Baptist Eshana	Enhance value addition in	Affordable and clean energy (G7)

		prepaid power using users' mobile phones		key growth opportunities (SDG1)	
3	Golden Wine Residue	A Convenient, easily accessed, good quality grape pomace flour	Tumusingize Peregrino	Enhance value addition in key growth opportunities (SDG1)	Zero hunger (G2)
4	Primitivus	Early stroke detection device	Kwagala Keith Richard	Enhance the productivity and social wellbeing of the population (SDG4)	Good health & wellbeing (G3)
5	Crop Guard	A purely organic pesticide	Nemeyimana James	Enhance productivity and social wellbeing of the population (SSDG4)	Zero hunger (G2)
6	TrackSmart	An examination and registration management system using a convolutional neural network, SMTP, and SMS-based student verification and attendance registration system (CNSS)	Augustine Beilel	Strengthen the private sector to create jobs (SDG2)	Industry, innovation & infrastructure (G9)

17.3.3 Development of Products

The 8 teams below were the recipients of the 2022/2023, Quarter 3 CITT seed grants for Product Development and have developed and started developing products. Some products are already on the market. Each team received UGX 16,650,000 (Sixteen Million Six Hundred Fifty Thousand Shillings)

S/N	Team	Innovation Projects	Innovation Team Leader & Mentor	NDPIII Alignment	SDG addressed
1	Healco f DS	Healcof DS - A Natural Herbal Syrup for Cough & Flu	Mr. Maleka Emmanuel & Mr. David Nkwangu	Enhance the productivity and social wellbeing of the population (SO4)	Good health & wellbeing (SDG3)
2	Industrial Ghee Base	Industrial Ghee Base – Upscaling and Commercialisation of Industrial Grade Cow Ghee Base	Mr. Alex Nuwamanya & Mr. Jimmy Angupale	Enhance value addition in key growth opportunities (SO1)	Good health & wellbeing (SDG3)
3	Agri-farm	Agri – farm-A Web-based and Mobile Application to Transfer and Exchange Knowledge and Experiences to and among Farmers	Dr. Tumuhimbise Manasseh & Dr. John Kule Baguma	Enhance the productivity and social wellbeing of the population (SO4)	Industry, innovation & infrastructure (SDG9)
4	Sukali Care	Sukali Care -A painless Diabetes Therapy	Mr. Mugabi Kizito Lenny & Dr. Wendo Mlahagwa	Enhance productivity and social wellbeing of the population (SO4)	Good health & wellbeing (SDG3)
5	DripSense Infusion	DripSense Infusion Monitor (Catheter Monitor)- A real time	Ms. Nasejje Mary Anthony & Mr. Mackenzie Tuhirirwe	Enhance productivity and social wellbeing	Good health & wellbeing (SDG3)

	Monitor	Efficient and Accurate Infusion Therapy		of the population (SO4)	
6	Gashom Cosmetics	Gashom Cosmetics – A Natural Cosmeceutical Jelly	Mr. Muganga Gershom & Dr. Tolo Cassim	Enhance productivity and social wellbeing of the population (SO4)	Good health & wellbeing (SDG3)
7	MPOS system	Medium Pressure Oxygen Storage System	Ms. Ainembabazi Cathybert & Dr. Johnes Obungoloch	Enhance productivity and social wellbeing of the population (SO4)	Industry, innovation & infrastructure (SDG9)
8	SAIS Team	The MUST Student Academic Information System	Dr. Simon Kawuma	Strengthen the private sector to create jobs (SO2)	Industry, innovation & infrastructure (SDG9)

17.3.4 Innovation Cafes and Challenges

The Innovation funds supported 2 innovations cafes. During the cafes, students ideate new ideas and other teams presented their progress on prototype development and product development.

17.3.5 The 1st Annual Agricultural Innovation Exhibition Day

MUST in partnership with UNESCO and the Ministry of Education and Sports in Uganda under the CITT organised the 1st ever Annual Agricultural Innovations Exhibition Day 2022 on **Friday September 23,**

2022 at the MUST Pharmacology Grounds. The event was organized by Mbarara University Agriculture Students Association (MBUASA) - Faculty of Interdisciplinary Studies, the Centre for Innovation and Technology Transfer (CITT) and MUST UNESCO- China Fund-in-Trust (CFIT) Project under a theme ***“Higher Technical Education in Africa for an Innovative and Skilled Labour Force towards Agricultural Transformation”***.

The event brought the industry closer to the University and Vice-Versa in responding to the labour market demands for increased graduate employability and addressing the

skilling gap. This fits the MUST 5-year strategic plan, Government of Uganda skilling programme, NDP III and vision 2040. MUST and her partners show cased agricultural innovations that had been incubated for sometime. These ranged from crop, animal, pathology, value addition, agro-machinery and engineering. The exhibition day was funded by the UNESCO CFIT project that focuses on contributing to the promotion of inclusive and equitable quality education in higher technical fields at the tertiary level, to serve both

economic development and lifelong learning needs. The project will specifically promote Goal 4.4 of the SDG which emphasizes the need for higher level technology skills training to substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship. The Chief Guest was Hon. Frank Tumwebaze, the Minister of Agriculture, Animal Industry and Fisheries who blessed MUST with a 90-Horse Pipe Tractor.

17.4 Financial Overview

Income/Receipts

S/N	Quarters	Approved and Expected Amount (UGX)	Actual Amount Received (UGX)
1.	Quarter 1	32,135,000	32,135,000
2.	Quarter 2	121,757,000	90,492,200
3.	Quarter 3	169,580,000	169,580,000
4.	Quarter 4	33,782,000	-
	Total amount	357,254,000	292,207,200

Expenditure

S/N	Budget Line	Total Cost (UGX)
1.	Scientific writing and product development workshops	60,175,000
2.	CITT awardees- Prototypes	36,000,000
3.	CITT awardees- Products	133,200,000
4.	Innovation cafes and challenges	2,000,000
5.	Operational costs	60,832,200
	Total Cost	292,207,200

17.5 Linkages with Gender and Environment

The Innovation Fund has helped to strengthen CITT capacity to build a multidisciplinary innovation ecosystem at MUST that integrates gender and

environmental concerns into the development processes. From the funds received, all the amount was spent on innovators outputs as opposed to operational costs. We believe that when we get more funding for the next financial year, MUST will shine and outcompete other Universities in Uganda.

18. Ranking the Stars

18.1 MUST spearheads a Grant to train health professionals on NCDs



Group photo at the NCD training

Mbarara University of Science and Technology (MUST), Lira University and Bishop Stuart University (BSU) in collaboration with California University of Science and Medicine (CUSM), Claremont Graduate University (CGU) and Massachusetts General Hospital (MGH) won a grant to strengthen the capacity of health professions training institutions in Implementation Science with a focus on Non-Communicable Diseases (NCDs).

On June 29, 2022, MUST and her partnering institutions launched a Multiple Principal Investigator Project (MPI) in Building capacity for Implementation Science in Non

Communicable Diseases (BImS-NCDs) to mentor health professionals in handling non-communicable diseases. The building capacity for Implementation Science research in Non-Communicable Diseases (BImS-NCDs) training hub at MUST, will provide leadership, best practices, research support, mentoring and training in epidemiological, prevention, and implementation science approaches in NCDs across the lifespan to the partner institutions in rural Uganda.

According to the Vice Chancellor one of the Principal Investigators, mentioned that the project the main objectives of the grant include: creating a training hub at MUST to support

research and research training in implementation science, creating a community of practice among the trainees and mentors, train clinicians and health professionals in basic epidemiological, prevention, and implementation science skills to conduct research in NCDs across the lifespan in rural Uganda and lastly to provide mentor training for BImS-NCDs mentors. The grant contains scholarship opportunities for those interested in studying PhDs with their research focusing on NCDs particularly

on epilepsy, dementia, mental health, alcohol use disorders and BImS.

A total of six health professionals from MUST, Lira University and BSU would benefit from the grant by becoming PhD fellows. Each successful beneficiary would be awarded with a scholarship worth \$ 20,000 to enable them to complete PhD research within the period of three years with two mentors allocated one from the Ugandan Partnering Universities and another from the partnering institutions in the United States.



Prof. Celestino Obua delivering his address at the NCD training



Dr. Jessica Haberer, one of mentors from Massachusetts General Hospital and Harvard University trained and oriented the program mentors, training advisory committees on the relevance of Implementation Science in addressing NCDs.

According to reports by WHO, Non-communicable diseases are an emerging global pandemic, with developing countries experiencing disproportionately higher rates. Uganda, with a large rural population, necessitates the development and implementation of evidence-based interventions to address real-world issues and provide long-term solutions.

18.2 Unstoppable: MURCI Fellow Dr. Edwin Nuwagira



Dr. Edwin Nuwagira a Lecturer in the Internal Medicine department at MUST is a Research Fellow on the 5D43TW011632 Mbarara University Research Initiative, PI Dr. Bajunirwe Francis. His study title is "Improving Pulmonary function after Tuberculosis in Uganda (IMPACT -U)". Dr. Edwin received an additional award "ATS Diversity Grant" from the American Thoracic Society Foundation, San Francisco USA to further his research on the path to independence.

His area of Specialization is Internal Medicine with much interest in Infectious Diseases. Dr. Nuwagira is a consultant in drug-resistant Tuberculosis. His areas of research are Tuberculosis, Sepsis, and HIV-associated meningitis. He has 44 publications and 619 citations. He was the first scientist outside a North American Institution to ever win this award in the history of the ATS research foundation program. He currently ranks at 169 among the top 500 scientists in Uganda.

18.3 Outstanding Driver: Baker Guma

Mr. Baker Guma was recognized as an outstanding staff member who had diligently worked under hard times.

He truly supported the students at the Kihumuro campus, nursed the old bus, ferrying students from the Town campus to Kihumuro daily. “**Mr. Baker Guma**, we have trusted you with our students, and you have faithfully served where others would not want to be associated with this particular bus. I take this opportunity to recognize



your service to MUST and to thank you most heartedly. You shall receive a MUST medal of honor,” Said Prof. Celestino Obua the Vice Chancellor.



Mr. Guma being given a medal

18.4 Giving Back to the Community

Over 200 urogynecology disorders have been addressed.



Dr. Musa Kayondo (PhD) head of department obstetrics and gynecology took on the mantle to mentor a number of medical persons to address Urogynecology Disorders. Annually these carry out surgeries in different parts of the country, such as Lira Reginal Referral Hospital, Nakaseke General Hospital, Mbarara Regional referral hospital and Bwindi hospital. According to Dr. Musa Kayondo, the team

addresses a number of challenges that include genitourinary fistula, prolapse and perineal tears, pelvic prolapse, neurogenic bladder. Mbarara University is grateful to the sponsors of the different camp; that is Prof. Verena ...Geissbuhler (St. Claraspital, Switzerland) through the Else Kroner foundation from Germany, Medicine for Humanity, UCCLA and Medlend from USA led by Dr. Magolis Micheal.



Dr. Allan Kasozi from the Ministry of Health who represented Dr. Dinah Nakiganda the Assistant commissioner for Adolescents Health and Education was present when MUST established the Adolescent Clinic at Mbarara Regional Referral hospital in 2022 through the Faculty of Interdisciplinary Studies (FIS) to address the health and reproductive issues of adolescents in the region. This was part of the MUST-Parent Child Communication project whose Principal Investigator was Dr. Violah N. Nyakato.

18.5 Medical Education Stars



Winners given certificates

Mbarara University of Science and Technology, Faculty of Medicine participated in the East African medical quiz competition and games held in Kisumu City Kenya. This took place from 21/07/2022- 24/07/2022. This was hosted by the Medical Students Association of Kenya (MSAKE) under the theme: “MEDICAL EDUCATION AS A TRANSLATIONAL TOOL IN REDUCING THE BURDEN OF NON-COMMUNICABLE DISEASES”. A total of 4 countries participated in the regional Quiz Competition that included Uganda, Kenya, Tanzania, and South Sudan.

The different countries formed teams which competed against each other. Team Uganda comprised of: KIU, Kabale University, Makerere University MUK Busitema University, IUIU, ST Augustine University and Uganda Christian University

With the support from the First Mile program under Global Health collaborative, MUST was ably sponsored full board for the competition.

The Ugandan team emerged as the winners of this first ever competition in the region, with a difference of 20 points to Kenya which was in the second position.

The participating students from MUST included: Kirya Tevin, Walter MBChB V, Jonathan Mulungi, MBChB V, Edgar Reagan Ssenyonga MBChB II, Sekitto Joseph MBChB IV, and Tamale Elvis MBChB V. The following stood out in team Uganda: Mr. Kirya Tevin, Walter MBChB V was team leader. Team Uganda was the best overall in the Clinical work category. In the co-curricular activities, Mr. Sekitto Joseph MBChB IV was the best in Chess and Tamale Elvis MBChB V was the best team coordinator. The University administration and management officially welcomed and recognized the victors at a ceremony organized by the Faculty of Medicine. The event was graced by Dr. Martha Kyoshaba Twinamasiko, Academic Registrar, Mr. Emmanuel Kyagaba the Dean of Students, Mr. Jastus Mugenyi, Guild president and Ms. Annet Kembabazi who represented the Global Health Collaborative.



Edgar Reagan Ssenyonga MBChB II



Kirya Tevin, Walter MBChB



Jonathan Mulungi, MBChB V



Sekitto Joseph MBChB IV

18.6 Prof. Patrick Ogwang wins an Innovative and Research Award



On November 16, 2022, Prof. Ogwang won an innovative research award from Global Peace Foundation because of his outstanding commitment to fight Covid-19 Pandemic using indigenous knowledge and herbal medicine. Together with partners in Uganda, Global Peace Foundation conducted a countrywide survey and Prof. Ogwang Patrick was identified and recommended as an authority in research and innovation. He was awarded during the National Dialogue on Sustainable Future which took place on November 16, 2022 at Imperial Royale Hotel Kampala. Prof. Ogwang Patrick is an inventor

of COVIDEX, a natural herbal for supportive treatment in the management of viral infections (Covid-19) under his Jena Herbals

Uganda Ltd. He is an Associate Professor of Pharmacy in the Department of Pharmacy, Faculty of Medicine at Mbarara University of Science and Technology, a Medical Researcher, Entrepreneur and Executive Chairman of Jena Herbals Uganda Limited. He is also the immediate Past President of the Council of the Pharmaceutical Society of Uganda, a body that governs pharmacists and their practices in Uganda. Prof. Ogwang's research focus is on testing, developing and producing medicines from plants based on traditional medicine, knowledge and scientific laboratory evidence.

18.7 Launch of the 1st Urology Clinic in MRRH

MUST/MUTH opened the 1st ever Urology clinic. Dr. Marvin Mwesigwa was at the forefront of the clinic Launch. The University appreciates the support established with different partnerships like HADA-Australia and Mbarara Regional Referral hospital and friends like Prof Judith Goh (Health and Development Aid Abroad-Australia Prof. Ericah Janszen Stitching Tilly-Netherlands in the

establishment of the Urology Clinic. A treatment camp was held prior to the launch where over 68 males benefited. Since inception, in the year 2022, the Urology clinic has reviewed over 200 patients, running every Friday where about 50 patients are reviewed every Friday. Operations are carried out every Monday and about 6 patients worked upon.



L- Prof. Kamukama DVC AA, Dr. Joseph Dean FoM, Prof. Mutakooha pioneer of Urology & Dr. Barigye Hospital Director



R -Dr. Marvin on table being assisted by Dr. Milton during the camp

Prof. Nixon Kamukama joined others in recognizing the effort by Dr. Marvin for spearheading the development and growth of the urology clinic. He shared a quotation by Zig Ziglar that says, "You don't have to be great to start, but you have to start to be great." Prof. Kamukama also recognized Prof. Elichum Mutakooha for pioneering the Urology department. Dr. Celestine Barigye the Hospital Director MRRH pledged support from the hospital for the growth of the Urology clinic. On

behalf of the hospital, Dr. Barigye offered a full theatre to the Urology clinic to support and raise the number of surgeries per week.



MR. Marvin M. Mwesigwa, Urologist Surgeon
 MBChB MUST, MMed Surgery MUST, MSc Urology KCMC, FCS Urology fellow COSECSA
 (KCMC is Kilimanjaro Christian Medical University College COSECSA is College of surgeons of East Central and East Africa).



18.8 The 7th Faculty of Computing and Informatics award ceremony

Theme: *Innovation and Technology: the gateway to soci-economic empowerment and Transformation.* The Faculty of Computing and Informatics held its 7th innovators award ceremony in the year 2022 where the winners in innovation and technology were given awards. This was officiated by the Vice Chancellor, Professor Celestino Obua.



(L- R, Dr. Naabasa Evarist Dean FCI, Mr. Kalungi Dickson, Prof: Obua Celestino and Dr. Twinamasko Medard Deputy Director CITT)



The Dean, FCI giving his remarks during the FCI-FAST Awards.



Judges with some of the students who had the best projects

More winning teams with the Deans, Quality Assurance Coordinator and supervisor





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