



MAKERERE UNIVERSITY

# MAKERERE UNIVERSITY BIOMEDICAL RESEARCH CENTRE



ANNUAL REPORT  
2020 - 2021





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## ANNUAL REPORT 2020 - 2021





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## Abbreviations

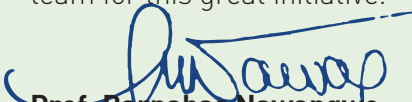
<b>MakBRC</b>	Makerere University Biomedical Research Centre
<b>URA</b>	Uganda Revenue Authority
<b>NITA</b>	National Information Technology Authority
<b>UVRI U</b>	Uganda Virus Research Institute
<b>MOSTI</b>	Ministry of Science Technology & Innovation
<b>GoU</b>	Government of Uganda
<b>PRESIDE</b>	Presidential Scientific Initiative on Epidemics
<b>EDCTP</b>	European Developing Countries Clinical Trials Partnership

## Message from the Vice-Chancellor



The College of Health Sciences has continued to be a leading hub of research and innovation. As Makerere University celebrates 100 years of excellent service, and as we embark on the second year of implementing our 10-year strategic plan 2020-2030, I pledge my continued support to the Makerere University Biomedical Research Centre (MakBRC), which has made significant contributions to our health sector, particularly the innovations in response to the COVID19 Pandemic. These and more are welcome advances, especially as we continue

repositioning Makerere to focus on producing outputs that are responsive to national, regional and global development challenges, and contributing to the global body of knowledge. I therefore congratulate the MakBRC team for this great initiative.



**Prof. Barnabas Nawangwe**

Vice-Chancellor

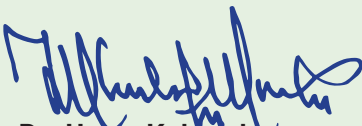


## Message from the First Deputy Vice Chancellor in charge of Academic Affairs

One of the cardinal roles of my office in liaison with colleagues in management is to ensure that we create an environment that is conducive enhances the teaching and learning, research and innovations as well as the knowledge transfer functions of the University. This calls for the creation of an appropriate support environment for both academic staff and learners to meet their aspirations.

I therefore, congratulate all the staff of MakBRC upon having successfully made their contributions to the attainment of the University's core functions during the past year. We look forward to having not only more innovations but biomedical research

findings as well. It is only by continuing to innovate and publish our groundbreaking knowledge in high impact journals of global repute that we will contribute to academic progression and visibility of Makerere University.

A handwritten signature in blue ink, appearing to read 'Umar Kakumba', written in a cursive style.

**Dr. Umar Kakumba**

First Deputy Vice Chancellor in  
charge of Academic Affairs,



## Message from the Ag. Managing Director

It gives me great pleasure to present the Institution's Annual Report for the first year of operation which has registered remarkable success, with the Institution performing exceedingly above its set targets.

## Support to the School of Biomedical Sciences

MakBRC has supported the School of Biomedical Sciences and the college at large through employment and capacity development, supported students learning, research, services delivery, innovation of various diagnostic products, procurement

of equipment and infrastructure development and resource mobilization.

## Outlook for the year ahead

In the next year, we shall continue working towards attaining our 5-year strategy. Specifically, MakBRC intends to take over the management of the Biorepository which MakBRC stores over two million samples from across Africa, obtain space for institution expansion, Support the ISO 9001 accreditation as well as growth of the Biomedical engineering unit, Support CAP accreditation for the: Pathology, Pharmacology, Molecular biology, immunology laboratories and the Biorepository.

MakBRC hopes to set up a centralized LIMS for all labs, a Clinical Research Unit and INNOVATION HUB to translate R&D ideas to commercialization.

I would like to this opportunity to extend my sincere gratitude to the



Guarantors for the support they have provided during the first year of operation and the Board for their commitment and which enabled the institution to sail comfortably through the first year of operation.

Above all, I convey my appreciation to the Management Team and Staff of MakBRC whose resilience and innovativeness has made the first year of operation a success.

**Prof. Moses Joloba**

Ag. MANAGING DIRECTOR

## Foreword From Chairman Board of Directors



2021 was a year of mixed performance; due to the Covid-19 pandemic and ensuing lockdown that affected working schedules.

The uncertainty notwithstanding, the company remained resilient even during these turbulent times. Despite the fact that the company was registered in August 2020, we are happy to report that MakBRC played a big role in the national response to Covid 19 and accomplished the following:

- a) The COVBANK was established for the purpose of storing Covid-19 samples in a record 7days Establishment followed emergency approval by the Ministry of Health, shortly after the first case of Covid-19 was registered.
- b) Furthermore, our laboratories were accredited as one of the Covid-19 testing and sequencing centres in Uganda.

As a nascent institution, we are very proud of these achievements. The MakBRC Board of Directors remains committed to providing an enabling corporate governance framework and supporting the company to achieve its five year strategic plan.

I take this opportunity to reassure our stakeholders that the MakBRC is a centre of sound repute, premised to build on its achievements. Our highly experienced leadership coupled with a competent team of staff members will always strive to deliver exceptional performance against the set targets.

On behalf of the Board of Directors, I thank all our stakeholders for supporting the organization. I equally thank the management and staff for innovatively transforming the company to what it is today.

A handwritten signature in blue ink that reads "W. Buwembo".

**Prof. William Buwembo**

CHAIRMAN BOARD OF DIRECTORS







## Board of Directors



### **Dr. William Buwembo (Associate Professor)**

Assoc. Prof. William Buwembo is the Chair – Department of Anatomy, School of Biomedical Sciences, College of Health Sciences, Makerere University. He is the Ag. Chairman – Board of Directors, MakBRC appointed on 2nd September 2020. He obtained a PhD in Molecular Biology in 2014 from Makerere University.



### **Dr. Umar Kakumba (Associate Professor)**

Dr. Umar Kakumba is the Deputy Vice Chancellor in charge of Academic Affairs, Makerere University. He is an Associate Professor in the School of Business and Management Sciences, College of Business and Management Sciences (CoBAMS), Makerere University. He holds a PhD in Public Affairs (University Of Pretoria, South Africa), Masters in Public Administration & Management, Diploma in Business Administration and BA Social Sciences (Makerere University). He completed a Post-Doctoral Fellowship at Wilson College, Cambridge, in the United Kingdom.



### **Dr. Hawa Nalwoga**

Dr. Hawa Nalwoga is the Chair – Department of Pathology, School of Biomedical Sciences, College of Health Sciences, Makerere University. She holds an M.D and a Master of Medicine (Pathology) from Makerere University. Dr. Nalwoga also holds a PhD from the University of Bergen, Norway.



### **Dr. Henry Kajumbula**

Dr. Henry Kajumbula is the Chair - Department of Medical Microbiology, College of Health Sciences, Makerere University. He has been a clinical Pathologist Specializing in Medical Microbiology since 1998. His area of interest and research is antimicrobial resistance notably the mechanisms of resistance, molecular approaches to rapid detection of resistant infections as well as infection prevention and control.



### **Dr. David Kateete**

Dr. David Kateete is a Senior Lecturer and Ag. Chair – Department of Immunology and Molecular Biology, College of Health Sciences, Makerere University. He completed his Bachelors Degree in Veterinary Medicine and a Masters Degree in Molecular Biology from Makerere University in Kampala Uganda. In 2005, He was awarded a 4-year Fogarty Scholarship for Doctoral studies. He has vast experience in Molecular Microbiology and Medical Parasitological, with exposure to various state-of-the-art research laboratories across borders. His research interests are Infection/Pathogen Biology, Antimicrobial Resistance (AMR) Mechanisms, and Molecular Diagnostics.



### **Dr. Jackson Mukonzo**

Dr. Jackson K. Mukonzo is a Senior Lecturer and Chair - Department of Pharmacology and Therapeutics, Makerere University. His career goal is to optimize pharmacotherapeutic outcomes among populations at risk of under treatment or drug toxicities.



### **Dr. Kalyesubula Robert**

Dr. Robert Kalyesuubula is a physician and Senior Lecturer and serves as Chair, Department of Physiology, College of Health Sciences, Makerere University. He holds a PhD from the London School of Hygiene and Tropical Medicine. He also holds Master of Medicine in Internal Medicine and Bachelor of Medicine and Bachelor of Surgery from Makerere University.



### **Dr. Paul Lukiza**

Lukiza Bizibu Paul is a Medical Illustrator and Ag. Chair Department of Medical Illustration College of Health Sciences, Makerere University. He holds a Bachelors Degree in FineArt(Hons.Upper Second) and a Masters Degree in Medical Illustration from Makerere University in kampala Uganda.

He also holds a Post Graduate Diploma in Education from the same Insitution.

He poses 28 years experience in Medical imaging, medical Illustration, Medical Photography and Biomedical communication.

Played a crucial role in the migration from analogue to digital content delivery in the College of Health Sciences. he has illustrated numerous dissertations and theses.

Major areas of interest are Medical Photography and Medical short Documentaries plus mixed media digital self instructional Materials.

Currently: evaluating the possibilities of ANIMATION and VIRTUAL EXPERIENCE in teaching/learning in the College of Health Sciences.



**Dr. Mpungu Stephen Kiwuwa**

He is a Medical doctor and also graduated from Makerere University and Karolinska Institutet with a Dr. of Philosophy (PhD) in Molecular Epidemiology of Malaria. He is the current Ag. Head of Department of Medical Biochemistry

## BACKGROUND

Makerere University Biomedical Research Centre Limited (MakBRC) is a Centre of Excellence and company Limited by Guarantee wholly owned and guaranteed by Makerere University whose journey began by the School of Biomedical Sciences (SBS) proposing for a Centre of Excellence that was to carry on the activities a Public Private partnership that had been existing between Makerere University and Medical and Molecular Laboratories LTD

The Makerere University School of Biomedical Sciences tasked committee to benchmark existing centres of excellence within Makerere University and develop a proposal on how best The School of Biomedical Sciences could establish a Centre of Excellence (CoE).

The School presented the proposal to the various University organs that approved it. This led to the establishment of MakBRC on 7th August 2020. On the 2nd day of September 2020, MakBRC was officially inaugurated at a function that was held at the Central Teaching Facility II, during which the maiden Board meeting of the company was convened.

### Key highlights of the event



- The Vice Chancellor authorized MakBRC to hold the event amidst the strict Covid-19 restrictions.
- The Vice Chancellor further authorized MakBRC to utilize the Makerere University Central Teaching Facility 2 (CTF 2) Auditorium to host the inauguration event.
- The meeting followed the Ministry of Health Standard Operating Procedures (SOPs) on COVID-19.
- Prof. William Buwembo was appointed as the Ag. Chairperson Board of Directors.
- The first MakBRC open Board Meeting was held that day.
- Prof. Moses Joloba was appointed as the Ag. Managing Director.
- The board resolved to open the first bank accounts and also appointed their respective signatories.
- The Vice Chancellor through his delegated person officially flagged off MakBRC to start engaging in official business.

## BOARD MEMBERS PRESENT

Prof. William Buwembo	Ag.Chairperson
Prof. Moses Joloba	Ag.Managing Director
Dr. Robert Kalyesubula	Member
Dr. Henry Kajumbula	Member
Dr. David Kateete	Member
Dr. Jackson Mukonzo	Member
Dr. Robert Lukande	Member (Joined virtually)



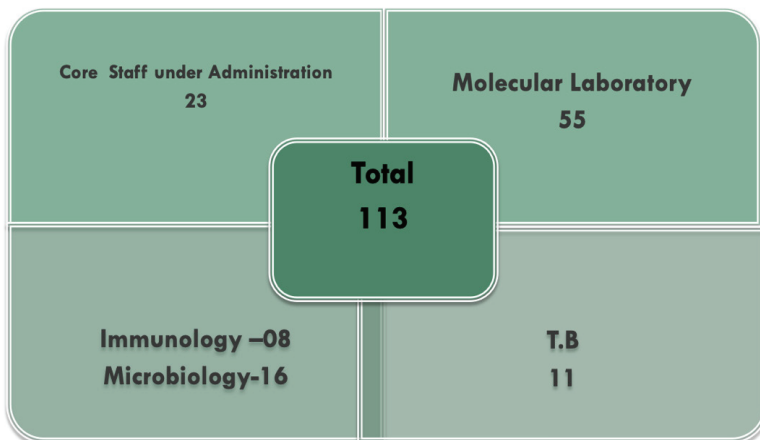
## MAKERERE UNIVERSITY BIOMEDICAL RESEARCH CENTRE'S ACHIEVEMENTS

Incorporated on **7th August 2020**, after going through all structures of the University and has managed to contribute tremendously to Biomedical sector in Uganda and beyond as follows: Supports over **70 PhD** students, over **300 Masters students** from Uganda and other countries.

### A. Employment and Human capacity development

- During the year 2020-2021, MakBRC has employed over **300 employees:**  
**113** of these being on **long term contracts** and the rest being employed on short term contracts
- The technical staff are **highly qualified** including those with degrees, masters and PhDs
- By **hands on** training of graduates and post graduates MakBRC trains the largest number of biomedical scientists in the country.
- Provides Administrative support to the Department of Immunology and Molecular biology

#### Qualified, Contracted and appraised staff



## B. Students Learning

MakBRC has greatly contributed to learning Biomedical sciences to undergraduate, graduate, post graduate and Junior faculty.

- This learning is mostly through MakBRC supported laboratories.
- In the year 2020-2021, a total of **800 undergraduate** students rotated in MakBRC supported Laboratories.
- MakBRC supports about **300 Masters students** in the College of Health sciences.
- Currently It supports **90 PhD students**.
- Supports the **Higher Degree committee** which supports graduate training.
- Laboratories under MakBRC support several programmes in the College of Health Sciences
- Laboratories supported by MaKBRC provide services to other companies and organizations in the College of Health Sciences and beyond





## C. Research

MakBRC currently has over **70 ongoing research projects** it supports; 15 of these are primary projects won by MakBRC and the other are for collaborators both local and international. The collaborators include NIH, EDCTP, European Union, Wellcome Trust Fund, FIND, WHO, Phifzer, Uganda government (PRESIDE/ST-OP, MakREF

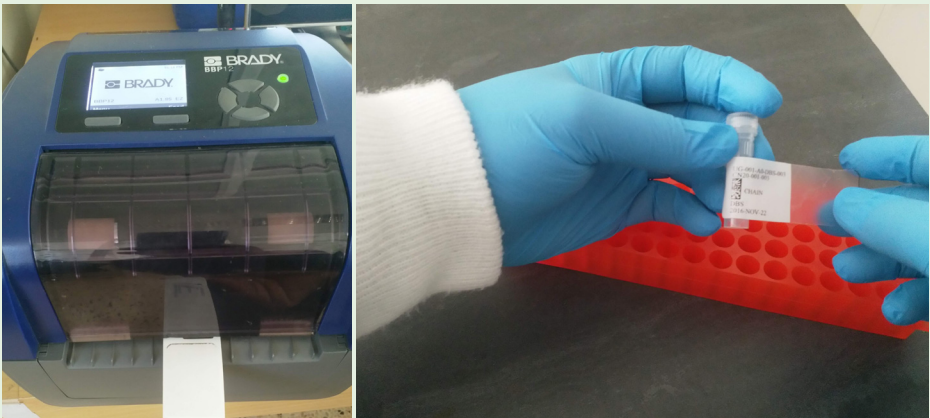


## D. Services delivery

- MakBRC supported laboratories test samples for the public, private not for profit and private for profit. MakBRC recently made a great contribution during the Covid-19 pandemic: established capacity to test **10,000 samples per day. contribution during the Covid-19 pandemic.**
- MaKBRC-supported laboratories were at one time the sole COVID-19 testing centre in the country for **four months.**
- This laboratory has provided **free testing services** to theMaKBRC-supported laboratories (staff – their families and students) throughout the pandemic to date.
- Led all the **three National Covid-19 surveys** in the entire county.



- Provided **training to Covid-19 testing centre** in the country.
- MakBRC has over **30 on going COVID-19 testing service** throughout the country: notably Uganda parliament, Uganda Revenue Authority, FUFA, UAERA, Lancet Laboratories, PPDA etc.
- Supported the provision of **back-up testing services** to Central Public Health Laboratories and Uganda Virus Institute.
- The supported laboratories provide testing services to **VIPs** including the UPDF and other dignitaries.



## E. Innovations

- Facilitated new innovations through research such as
  - a. MakGen,SARS- CoV-2
  - b. MaKGen (RNA extraction kit)
  - c. SARS-CoV-2 Proficiency panels in conjunction with SRL
  - d. Taq Polymerase kit and Phusion enzyme kit
 Kits created but still in phase I validation;
  - e. Ebola rapid detection kit (EBOV-Kit)
  - f. Mycobacteria tuberculosis detection kit
  - g. STDS-AgX-COVID-19
  - h. Over 20 products 9in various stages of development
  - i. Establishment of a tissue and organ biobank
  - j. Development of prototypes of PCR diagnostic kits

- Established a **Covid-19 Biobank** that instrumental in supporting biotech companies.

### MakBRC Samples shared for development of Biotech products

Research team/PI	Sample types	Number shared	Expected Outcome
Nankya Immaculate, JCRC	Plasma, serum, saliva, stool	40	Saliva Diagnostics for COVID-19
Pontiano Kalebu, UVRI	Plasma, serum	200	COVID-19 Vaccine
Kato Drago, College of Veterinary medicine	Plasma, serum, saliva, urine	1155	Biomarkers for COVID-19
Enock Matovu, College of Veterinary Medicine	Serum, saliva	200	COVID-19 Diagnostic
John Lubega, Vit D project	Plasma	1782	COVID-19 Therapeutics
Prof Fred Rurangwirwa, ATCG Solutions	Nasopharyngeal Swabs and saliva	200	COVID-19 RDT
Dr. Misaki Wayengera	Serum, saliva	66	COVID-19 RDT
Dr. Felix Bongomin, Makerere University CHS	serum	50	COVID-19 Biomarkers
Dr. Hakiim Ssendagire, Mak CHS	serum	129	COVID-19 Biomarkers
Dr. Rose Nabatanzi, Immunology lab Mak CHS	Swabs	40	COVID-19 RDT

## F. Equipment and Infrastructure development

- Maintains all laboratory equipment.
- Supports backup generator of over 500KVA power output at the College of Health

### MakBRC procured the following equipments

- a. LumiraDx for SARS-COV-2
- b. Several PoC for IDs tests
- c. TrueNAT for TB and MDR-TB diagnosis
- d. TrueNAT C-19/TB COMBO
- e. Several Lab computers, laptops and Tablets for eDCS
- f. 2 Ten clour GeneXpert for XDR
- g. CRP testing device
- h. Light microscope
- i. Invented microscope
- j. Cell counter
- k. Microplate reader
- l. Flow Cytometer

**Xpert XDR test**, the first of its kind on continent. Detects resistance to second line drugs in **2hrs**, instead of **6 months**

**Endorsed by WHO in 2021**



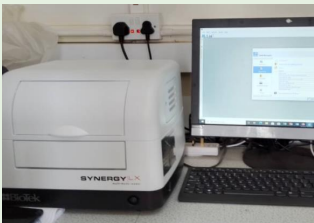
Microbiology Laboratory Equipment



Microbiology Laboratory Equipment



Light microscope



Cell counter



Flow Cytometer  
12 color



Microplate  
reader

## G. Resource mobilization

- Currently MakBRC has assets worth **2, 8000,000 USD**
- Supports **international accreditation** of two laboratories
- Contributes to a big percentage of the **University Hospital revenue** hence providing quality
- Supports numerous/many researchers in proposal development, proposal writing, training and research implementation

### STATEMENT OF FINANCIAL POSITION AS AT 30 JUNE 2021

2021

US\$

#### CURRENT ASSETS

Receivables and prepayments	902,296
Bank & cash balances	1,912,440
<b>TOTAL ASSETS</b>	<b>2,814,736</b>

#### FUNDS

Restricted fund	669,272
General fund	1,963,067
<b>Total funds</b>	<b>2,632,339</b>

#### CURRENT LIABILITIES

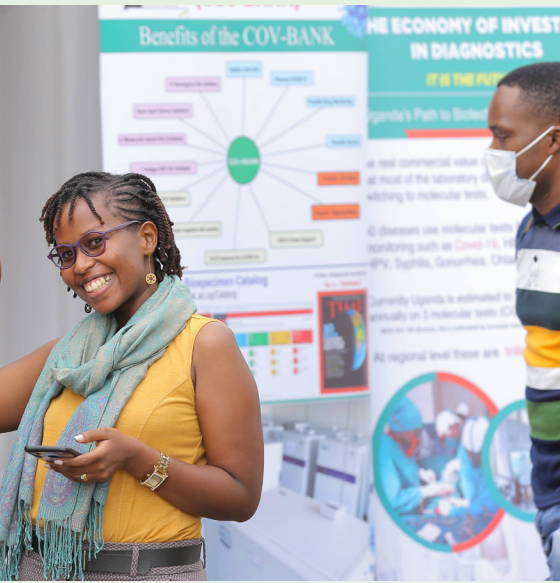
Payables & Accruals	182,397
<b>Total current liabilities</b>	<b>182,397</b>

## H. Next year's plan

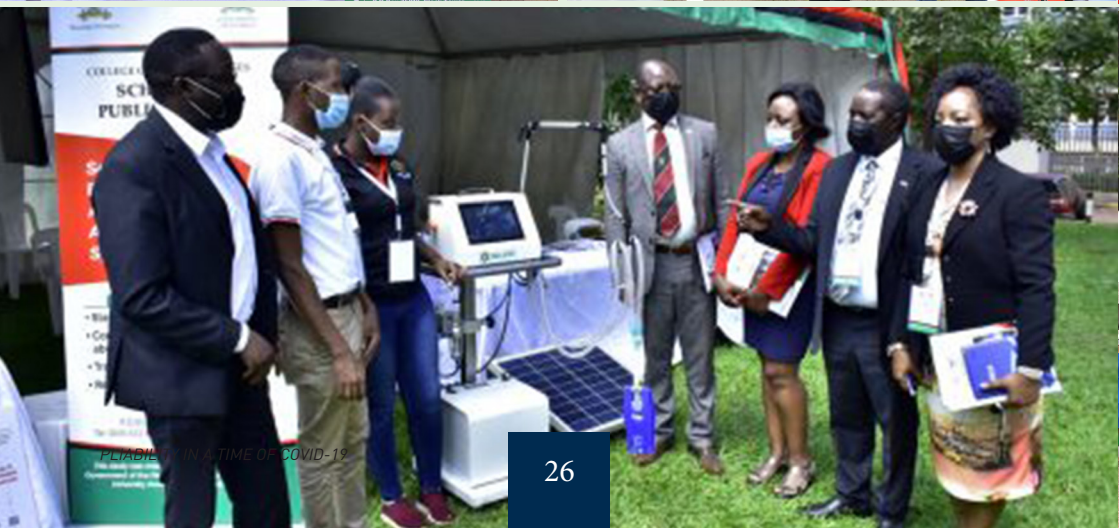
- MakBRC is destined to take over the management of the **Biorepository** which has over **two million samples** across Africa
- Complete formation of the Board
  - a. Formation of the Audit committee
  - b. Formation of the Biorepository Committee
- Obtain space for expansion  
Free, Buy, Rent .....
- Support the ISO 9001 accreditation of Biomedical engineering equipment services
- Support workshop at the Biomedical Engineering Unit:  
National and regional market for the equipment
- Support CAP accreditation:  
Pathology  
Pharmacology  
Molecular biology and immunology laboratories
- Biorepository receive CAP accreditation
- Have all labs accredited for ISO15189 by CAP  
[institutional Lab accreditation]
- Establish a centralized LIMS for all labs.
- Establish a Clinical Research Unit
- Establish an INNOVATION HUB to translate R&D ideas to commercialization

In conclusion, the above achievements have been possible because MakBRC operates as a company.















## OUR MISSION

*Delivering proven innovative and effective knowledge, treatments and technologies for use in health care.*

### Our Vision

*To be a global leader in developing knowledge, treatments and technology for use in healthcare.*

**Slogan** *Science for Better Health*

## CORE VALUES

**Innovation:** We are constantly looking for ways to innovate and improve.

**Caring:** We care about our donors, partners, staff, communities and each friend we serve.

**Excellence:** We strive for excellence in whatever we do.

**Accountability:** We accept our responsibilities and try hard to achieve those things for which we are accountable.

**Integrity:** We are truthful, fair and honest in all interactions.

**Teamwork:** We support each other to achieve our set objectives.

**Professionalism:** Throughout our work, we demonstrate competence and capacity to generate results to the expected institutional, national, international and discipline specific standards.

**Respect:** We ensure acknowledgement, attention and good judgment in dealings with all our stakeholders.

**Diversity:** We are an equal opportunity institution that embraces diversity in order.

## NEXT YEAR'S PLAN

- To setup an innovations hub to nurture young innovators.
- To commercialize all tested and proven products.

## **Editorial Team**

Prof. Moses Joloba.

Asiimwe Joshua.

Dr. Samuel Kirimunda.

Ssentongo Frank

Ms. Irene Rebecca Namatende.



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