



# COLLEGE OF NATURAL SCIENCES

## ANNUAL REPORT 2020







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## CoNAS Mission

To create and impart knowledge in basic and applied sciences to society through training, research and extension services for development.

## Makerere University Vision

Makerere University is a thought leader of knowledge generation for societal transformation and development

MISSION

VISION

VALUES

## Makerere University Core Values

Makerere University in the pursuit of its mission will be guided by the following core values:

1. Accountability
2. Professionalism
3. Integrity
4. Respect
5. Inclusivity



# MESSAGE FROM THE PRINCIPAL

**W**elcome to the College of Natural Sciences (CoNAS); I have the pleasure to present to you our Annual Report for the year 2020. We thank the Almighty for taking us through a year of difficulty owing to the Covid19 pandemic which severely affected work at the university, nationally and globally. This is my 10<sup>th</sup> year serving as Principal of the College of Natural Sciences; I thank all the staff and leadership through the years for the support and hard work. We have been able to take the college to greater heights.

Our niche as a constituent College of Makerere University is teaching and carrying-out research in the basic and applied sciences. As you read this report, you will see many examples of how the College applies its expertise to serve our learners, Makerere University and Uganda as a nation through our teaching and research for a better future. All our work is premised on six strategic goals that guide the CoNAS 2020-2030 Strategic Plan:

**Goal 1:** To increase the capacity of the College to train scientists for the country, the region and beyond **Goal 2:** To increase the number of demand driven high quality science programmes **Goal 3:** To strengthen demand driven scientific research and make the college more relevant to national development. **Goal 4:** To improve the operational efficiency of the College **Goal 5:** To create a conducive academic environment for students and staff and **Goal 6** - To maintain high academic standards that are recognized internationally.

Irrespective of the challenges arising from the Covid19 pandemic and curtailing of our work because of a lockdown for most of 2020, we are glad that our staff were able to produce multiple research papers, implement their research and still impart knowledge to our learners via ODEL supported by the Makerere University E-learning Environment online. This is the new normal and we have all had to adapt quickly and continue with our work as best as possible. I would like to take this opportunity to thank the College administration, staff and students for their continued support and participating in the activities of the College. Your hard work ensures that the College is able to move forward in realising its strategic goals.

As a requirement by the National Council for Higher Education (NCHE) and University Senate, the College of Natural Sciences finalised review of its programmes and these have been to Senate and approved. From our research work by staff and students, the college has registered multiple research publications. The college realised a number of promotions as well as



new recruitments to replace retiring staff and also fill gaps where staff had either resigned or died. I take this opportunity to recognize Prof. Deborah Baranga (Department of Zoology, Entomology and Fisheries Sciences) and Prof. Sylvester Nyakana (Department of Plant Sciences, Microbiology and Biotechnology) who have served CoNAS and Makerere University diligently and rising through the ranks.

All that we have achieved through the year would not be possible without support from Government of Uganda, University Administration and partners, this we cannot take for granted. We hope for better in the year 2021 after the challenges of 2020.

As We Build for the Future

A handwritten signature in blue ink, appearing to read 'J. Y. T. Mugisha', written in a cursive, flowing style.

**Professor J.Y.T Mugisha**  
**PRINCIPAL**

## College Leadership and Contact

The College is headed by a principal who is assisted by a deputy, 2 deans of schools and 7 Chairs of Departments. We also have 1 coordinator for Sports Science unit.

### **Principal**

Professor Joseph Y.T. Mugisha, PhD

### **Deputy Principal**

Assoc. Professor Fredrick Muyodi, PhD

### **Dean – School of Biosciences**

Joseph Kyambadde, PhD

### **Dean – School of Physical Sciences**

Assoc. Professor Muhammed Ntale, PhD

### **Chair – Department of Mathematics**

Godwin Kakuba, PhD

### **Chair – Department of Chemistry**

John Wasswa, PhD

### **Chair – Department of Physics**

Assoc. Professor Winston Tumps Ireeta, PhD

### **Chair – Department of Geology and Petroleum Studies**

Michael Owor, PhD

### **Chair – Department of Biochemistry and Sports Science**

Peter C. Vuzi, PhD

### **Chair – Department of Zoology, Entomology and Fisheries Sciences**

Eric Sande, PhD

### **Chair – Department of Plant Sciences, Microbiology and Biotechnology**

Assoc. Professor Arthur K. Tugume, PhD

### **Coordinator – Sports Science**

Anne Nankwanga, PhD

### **College Human Resource Officer**

Mr. Godfrey Makubuya

### **College Registrar**

Ms. Hellen Ssali

### **College Bursar**

Mr. Andrew Malagala

### **College Librarian**

Ms. Sarah Nakayima

### **College Procurement Officer**

Mr. Deo Ibanda

### **College Communication Officer**

Ms. Zaam N.K. Ssali

### **CoNAS General Contact**

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School of Biosciences

Website: <http://sbis.mak.ac.ug>

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## Acronyms

AR	–	Academic Registrar
ASF	–	African Swine Fever
AY	–	Academic Year
BETB	–	Bachelor of Science in Ethnobotany
BSBT	–	Bachelor of Science in Biotechnology
BSC	–	Bachelor of Science
BSCB	–	Bachelor of Science in Conservation Biology
BSFA	–	Bachelor of Science in Fisheries and Aquaculture
BSIC	–	Bachelor of Science in Industrial Chemistry
BSPC	–	Bachelor of Science in Sports Science
BSPG	–	Bachelor of Science in Petroleum Geosciences and Production
CoNAS	–	College of Natural Sciences
CoTRA	–	Collaborative Training in Fisheries & Aquaculture in East, Central and Southern Africa
EU	–	European Union
ISP	–	International Science Programme
Mak	–	RIF Makerere University-Research and Innovations Fund
MSc.	–	Master of Science
MUELE	–	Makerere University E-learning Environment
NORAD	–	Norwegian Agency for Development Cooperation
ODEL	–	Open Distance and E-learning
PhD	–	Doctor of Philosophy
PMB	–	Plant Sciences, Microbiology and Biotechnology
SBS	–	School of Biosciences
SPS	–	School of Physical Sciences
ZEFS	–	Zoology, Entomology and Fisheries Sciences





# INTRODUCTION

## CoNAS the College

CoNAS is at the heart of Makerere University, with a community of more than 1,000 students and over 200 staff members. There are two schools under CoNAS; School of Biosciences (SBS) and School of Physical Sciences (SPS). The schools are further divided into 7 departments; Biochemistry & Sports Sciences, Chemistry, Geology & Petroleum Studies, Mathematics, Physics, Plant Sciences, Microbiology and Biotechnology, Zoology, Entomology and Fisheries Sciences. The college departments handle varied areas of specialty in teaching, research and innovations.

CoNAS is the cradle of basic sciences providing a foundation for all applied sciences offered at Makerere University. The mandate of the College of Natural Sciences is to carry out teaching, research and extension services in the basic sciences, namely biochemistry, botany, chemistry, geology, mathematics, physics, zoology, genetics and sports science. In its strategy as a College, the mandate of CoNAS is defined by its general functions including:

- a) Produce graduates for various sectors of scientific and economic development of Uganda and the World at large.
- b) Conduct high quality research in basic sciences.
- c) Offer extension services to various sectors of human activities.
- d) Provide services to other Colleges/Schools/

Institutes by teaching branches of basic science relevant to their disciplines.

- e) Promote joint and interdisciplinary research

The College of Natural Sciences is committed to the vision and core values of Makerere University which have been defined thus:

## Structure of The College

The college is headed by the Principal who is supported by a Deputy Principal. The College of Natural Sciences has two schools: School of Biosciences and School of Physical Sciences, each of the schools is headed by a Dean. The schools are composed of departments; each department is headed by a Chair also referred to as a Head.

The School of Biosciences has three (3) departments: Department of Biochemistry and Sports Science, Department of Plant Sciences, Microbiology and Biotechnology, and Department of Zoology, Entomology and Fisheries Sciences. On the other hand, the School of Physical Sciences has four (4) departments: Department of Chemistry, Department of Geology and Petroleum Studies, Department of Mathematics, and Department of Physics.





# TEACHING AND LEARNING



## Our Programmes

CoNAS offers programmes at undergraduate and graduate levels i.e. Bachelors, Masters and PhD. The following programmes are presently on offer at the College.

No.	Programme	Duration
UNDERGRADUATE		
1	Bachelor of Science (Major or Minor in Biological Sciences – Zoology, Botany, Biochemistry); Major or Minor in Physical Sciences – Physics, Mathematics, Geology, Chemistry)	3years
2	Bachelor of Sciences in Petroleum Geosciences and Production	4years
3	Bachelor of Science in Fisheries and Aquaculture	3years
4	Bachelor of Science in Biotechnology	3years
5	Bachelor of Science in Conservation Biology	3years
6	Bachelor of Science in Sports Sciences	3years
7	Bachelor of Science in Industry Chemistry	3years
GRADUATE		
8	Master of Science in Petroleum Geosciences	2years
9	Master of Science in Physics	2years
10	Master of Science in Chemistry	2years
11	Master of Science in Geology	2years
12	Master of Science in Mathematics	2years
13	Master of Science in Mathematical Modelling	2years
14	Master of Science in Botany Specialisations a) Natural Resources Ecology and Conservation Plant Physiology Plant Taxonomy and biosystematics Molecular Biology and Genetics Microbiology and Plant Pathology	2years
15	Master of Science in Zoology Specialisations Parasitology Entomology Fisheries and Aquaculture Wildlife Ecology and Conservation	2years

No.	Programme	Duration
16	Master of Science and Biochemistry Specialisations Nutrition Biochemistry Medical Biochemistry Environmental and Industrial Biochemistry	2years
17	PhD in Botany	3years
18	PhD in Zoology	3years
19	PhD in Biochemistry	3years
20	PhD in Mathematics (Thesis)	3years
21	PhD in Mathematics (Coursework & Dissertation)	3years
22	PhD in Physics	3years
23	PhD in Chemistry	3years
24	PhD in Geology	3years

**Table 1: Total Number of Undergraduate Registered Students Academic Year 2019/2020**

Programme	Registered Students
BSCB	46
BSCI	328
BSFA	106
BSPC	23
BBT	115
BBPG	186
BSIC	169
TOTAL	973

### KEY:

- BSCB:** Bachelor of Science in Conservation Biology  
**BSCI:** Bachelor of Science  
**BSFA:** Bachelor of Science in Fisheries & Aquaculture  
**BSPC:** Bachelor of Science in Sports Science  
**BBT:** Bachelor of Science in Biotechnology  
**BBPG:** Bachelor of Petroleum Geoscience  
**BSIC:** Bachelor of Science in Industrial Chemistry

**Table 2: Graduate Students in 2019/2020**

Department	M.Sc.	PhD	Total
Biochemistry and Sports Science	24	3	27
Chemistry	14	7	21
Geology and Petroleum Studies	53	2	55
Mathematics	12	23	35
Physics	10	6	16
Plant Sciences, Microbiology	14	10	24
Zoology, Entomology and Fisheries Sciences	11	3	14
<b>Total</b>	<b>138</b>	<b>54</b>	<b>192</b>

### Units Serviced by CoNAS

CoNAS is the cradle of basic sciences providing a foundation for all applied sciences offered at Makerere University. In fulfilment of this mandate, the college services other units including College of Computing and Information Sciences (CoCIS), College of Engineering Design Art and Technology (CEDAT), College of Education and Extension Services (CEES) and the College of Business and Management Studies (CoBAMS). In the same vein, CoNAS is serviced by CoBAMS for those students offering Bachelor of Sciences with a business leaning like statistics and economics as well as students offering courses with IT or computer options are serviced by CoCIS.

### Physical Infrastructure

CoNAS has physical infrastructure facilities including lecture space, teaching laboratories, ICT laboratories, Library and equipment. Of recent, government has renewed its policy towards development of science to increase on the number of scientists in the country as a base for industrial and technological development. This has resulted in doubling the number of government supported students in science-based disciplines. CoNAS has also benefited from ADB funding resulting into refurbishment of the Chemistry Building and Laboratories as well as equipment for the Department of Plant Sciences, Microbiology and Biotechnology.

### Specialised Facilities and Equipment

Apart from the basic facilities, the college has a number of specialised facilities for research:

- a) **Herbarium and Botanical Gardens:** the department of Plant Sciences has continued to receive small funding to help in the digitization of selected herbarium specimens at the Makerere University Herbarium and specialized training of both the staff and students for curation (preserving and preparing of plant materials). A botanical garden is also maintained for practical work. The department also established a Mushroom Training Facility located in the Botanical garden where students can acquire skills in growing mushrooms.
- b) **The insectary and animal house** in the department of Zoology, Entomology & Fisheries Sciences.
- c) **Central Diagnostics Laboratories** under African Development Bank (ADB) HEST project funding are housed in the PMB departmental facilities including; the Research lab, Third year lab, Microbiology and Mycology labs, Cold room, Dark room, Tissue culture lab, and the Screen house in the Makerere University Botanical garden.
- d) Hi-tech Bioinformatics Laboratory
- e) The Natural History Museum and Aquarium
- f) Computer Laboratories and ICT facilities
- g) Solar Energy and Seismic Network
- h) Science Workshop
- i) Seismic Laboratory
- j) Petroleum Exploration and Production Laboratory
- k) Biological Field Station in Kibaale National Park
- l) Research labs in all the departments, however these require expansion and new equipment to cater for the increasing number of students.

### Review of Programmes

As a requirement of the National Council for Higher Education (NCHE) the following programmes were reviewed and have been approved by Senate and its respective committees.

## Undergraduate Programmes

- i. BSc. Sports Science (BSPC)
- ii. BSc. Petroleum Geosciences (BPGP)
- iii. BSc. Conservation Biology (BSCB)
- iv. BSc. in Fisheries and Aquaculture (BSFA)
- v. BSc. Biotechnology (BSBT)
- vi. BSc. Industrial Chemistry (BSIC)

## Graduate Programmes

- i. MSc. Biochemistry (MSBC)
- ii. MSc. Physics (MSPH)
- iii. MSc. Zoology (Entomology and Parasitology; Fisheries and Aquatic Sciences; Wildlife Ecology and Management Options) (MZOO)
- v. MSc. Chemistry (MSCH)
- v. MSc. Geology (MGLO)
- vi. MSc. Petroleum Geosciences (MPGP)
- vii. MSc. Botany (MBOT)

The reviewed BSCI (Bachelor of Science) programme is at its final stages at the College and will be submitted to Senate soon

The following New Programmes are being worked on by the College

1. Master of Science in Forensic Chemistry and Toxicology
2. Master of Science in Forensic Biology and Genomics
3. Master of Science in Forensic Medicine.
4. MSc. Microbiology and Plant Pathology (MMPP) (MBOT Extract)
5. MSc. Genetics (MMGE) (MBOT Extract)





# RESEARCH AND PARTNERSHIPS



In the year 2020, the College continued to undertake research intended to enhance their work, knowledge and partnerships. The College continued to initiate new research and some of the projects ended while others that began earlier are still on-going. The College for purposes of furthering knowledge undertakes research in various areas under the individual departments. The projects are mainly funded by development partners or as collaborations with universities and research institutions in other countries. The research is jointly handled by staff and students at graduate (Masters and PhD) level. The research undertaken by staff resulted into a number of published papers in international peer reviewed journals. Staff were also recognised and awarded for their work.

## Publications

1. Pamela K. Kajumba, **Denis Okello, Karidewa Nyeinga**, Ole J. Nydal. 2020. **Experimental investigation of a cooking unit integrated with thermal energy storage system**. Journal of Energy Storage; Vol.32, pp.1-12. <https://doi.org/10.1016/j.est.2020.101949>
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3. **Kurama, O** (2020). **On the use of Heronian means in a similarity classifier**, Iranian Journal of Fuzzy Systems, Vol.17, No. 5, pp. 137-146.
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14. **Sanah Nkadameng, Alice Nabatanzi, Christiaan Steinmann, Jacobus Eloff.** 2020. **Phytochemical, Cytotoxicity, Antioxidant and Anti-Inflammatory Effects of *Psilocybe Natalensis* Magic Mushroom.** *Plants*, 9(9), 1127; <https://doi.org/10.3390/plants9091127>
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L-R: Prof. Muhammad Ntale, Dean School of Physical Sciences and Dr. John Wasswa, Head- Department of Chemistry at the Forensics Meeting at Entebbe



## Research and Projects

The College for purposes of furthering knowledge undertakes research in various areas under the individual departments. The projects are mainly funded by development partners or as collaborations with

universities and research institutions in other countries. The research is jointly undertaken by staff and students at graduate (Masters and PhD) level. The projects currently on-going in the College are presented in the following tables.

### Table 3: On-going Projects

	Research Contract / Grant	Research contract value	Principal Investigator	Collaborators	Project Duration	Funder
1.	Developing innovative and sustainable approaches to prevent the spread of African Swine Fever (ASF) in Africa (ASF-RESIST)'.  	\$1,249,988	Assoc. Professor Charles Masembe	MRC - University of Glasgow, Centre for Virus Research – Scotland, UK; The National Veterinary Research Institute, Nigeria; BecA-ILRI Hub – Kenya; National Veterinary Institute – Sweden and the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM).	2018-2021	African Union/ European Union
2.	Harnessing Dietary Nutrients of under-utilised fish and fish-based products in Uganda (NutriFish)	CAD 2.7 million	Dr. Jackson Efitre	National Fisheries Resources Research Institute (NaFIRRI) of the National Agricultural Organization (NARO); NUTREAL Uganda Limited; and McGill University, Canada.	2019-2022	International Development Research Centre (IDRC) of Canada, and the Australian Centre for International Agricultural Research Centre (ACIAR), under the Cultivate Africa's Future Fund Phase 2 (CultiAF2)
3.	Bee Pollinators Diversity Informatics Project	\$275,000	Assoc. Professor Anne Akol	DICTS-Makerere University, National Museum of Kenya, Metalmark Web and Data (USA), Bee Identification Services (USA), Belgian Museum of Natural History	2020-2022	JRS Foundation
4.	Establishment of a Regional Enterprise to Commercialise the Integrated Technologies for Agro/Biowaste conversion in Eastern Africa	\$250,000	Dr. Joseph Kyambadde	Centre for Environmental Science, College of Natural and Computational Science – Addis Ababa University, Ethiopia; The Nelson Mandela African Institution of Science and Technology – Arusha, Tanzania; Innovative Technology and Energy Centre – Arusha, Tanzania	2018-2021	BiolInnovate Africa Programme

	<b>Research Contract / Grant</b>	<b>Research contract value</b>	<b>Principal Investigator</b>	<b>Collaborators</b>	<b>Project Duration</b>	<b>Funder</b>
5.	Integrated Crop Management for Scaling-up Banana Productivity in East Africa	\$474,393	Assoc. Professor Arthur Tugume	National Agricultural Research Organisation (NARO)	2016-2020	Bill and Melinda Gates Foundation
6.	Cassava Double Haploid Research	\$20,429	Assoc. Professor Arthur Tugume	National Agricultural Research Organisation (NARO)	2017-2019	National Agricultural Research Organisation (NARO)
7.	Transmission Dynamics of African Swine Fever in an endemic setting at the livestock-wildlife Interface	\$958,426	Assoc. Professor Charles Masembe	Centre for Virus Research, University of Glasgow, United Kingdom	2015-2020	Wellcome Trust
8.	IUCEA-KfW Scholarship Programme	\$8,316	Dr. Peter Akoll			KfW Foundation
9.	Diversity Informatics Projects	\$60,000	Assoc. Prof. Anne Margaret Akoll	Museums of Kenya	2020 -2022	JRS Foundation
10.	Monitoring and Sustainable Management of Surface Fresh Water Sources (WASAF)	\$21,282	Dr. Ronald Semyalo	French Fund for Global Environment	2016-2020	French Fund for Global Environment and French Development Agency
11.	Transforming Water, weather, and climate information through In Situ observations for Geo-services in Africa (TWIGA)	\$166,273	Dr. Eric Sande Assoc. Prof. Florence D'ujanga	Technische Universiteit Delft, Netherlands Imperial College of Science Technology and Medicine, UK Kwame Nkrumah University of Science and Technology, Ghana Strathmore University, Kenya South African Weather Service	2018-2022	European Union
12.	Natural Products Research	\$144,474	Dr. Jane Namukobe		2018-2021	The African Academy of Sciences (AAS)
13.	EnPE Project	\$800,000	Dr. Betty Nagudi	University of Juba, South Sudan; University of Bergen, Norway	2016-2020	The Norwegian Agency for Development (NORAD)
14.	Sida Phase IV	SEK 39,000,000	Assoc. Prof. J.M. Mango	Linkoping University, Maladaren University, Royal Institute of Technology, Stockholm University and Uppsala University	2015-2022	Sida(21) PhD students and ten (7) post-docs are being trained



	<b>Research Contract / Grant</b>	<b>Research contract value</b>	<b>Principal Investigator</b>	<b>Collaborators</b>	<b>Project Duration</b>	<b>Funder</b>
15.	Assessing Quality of Food	\$13,000	Dr. Gabriel Kasozi		2019-2021	International Energy Atomic Agency
16.	Green Chemistry for Sustainable Chemical Processing	SEK 1,700,000	Dr. Emmanuel Tebandeke	Centre for Analysis and Synthesis – Dept. of Chemistry, Lund University, Sweden		ISP/ International Programme in Chemical Sciences
17	Water Resources - Intra-Africa Mobility Scheme	\$57,034	Assoc. Prof. George William Nyakairu		2020-2024	European Union Commission
18	Environmental Health	USD 36,079	Dr. Patrick Ssebugere	Helmholtz Zentrum München, Germany	2020 - 2022	The World Academy of Sciences
19	Capacity building in Environmental Sciences	Project supports training of MSc and PhD students	Dr. Patrick Ssebugere	Slovak University of Technology, Bratislava	2020 - 2022	ICM Erasmus plus
20	Engendering Promotion of Basic Sciences in East Africa	SEK 597,300	Dr. Betty Nanyonga Kivumbi	International Science Programme	2019-2021	ISP/SIDA
21	Eastern Africa Universities Mathematics Program (EAUMP)		Assoc. Prof. John M. Mango	Member universities in east and southern Africa	2020-2021	ISP/Sweden
22	Mathematics for Sustainable Development	NOK 19,900,000	Assoc. Prof. John M. Mango	University of Bergen, Norway; University of Dar es Salaam	2021-2026	To train 5PhDs at Makerere Universities and 6PhDs at University of Dar es Salaam

## Mak-RIF funded projects

The College submitted multiple research proposals for funding in COVID19 and Round2 calls by the Makerere University Research and Innovation Fund (Mak-RIF). After evaluations the following projects were successfully awarded:

### Projects Awarded Under the Special MAK-RIF COVID-19 Call

	Title	PI
1	Mathematical Model of COVID-19 dynamics in Uganda: Using a locally parameterized system to enhance intervention policies	Prof. Joseph Y.T. Mugisha
2	Using a mobile App for contact tracing and monitoring of symptoms for early detection of COVID-19 infection in a resource-limited setting	Dr. Saul Hannington Nsubuga
3	Complementary approaches to strengthen COVID-19 preventive measures among fishing communities	Dr. Akoll Peter
4	Smart Digital Laboratory of Chemical Sciences for Secondary and University Students	Dr. Ibrahim Karume
5	Engaging fishing communities to address the socio-cultural and behavioural risk factors that may facilitate transmission and spillover of COVID-19	Dr. Godfrey Kawooya Kubiriza
6	Mitigating the problems of possible Community Infections due to porous Border Points in the fight against COVID-19: A Case Study of a 57km stretch of Busia Border	Prof. John Magero Mango

### CoNAS MakRIF Round-2 Awardees

	Title	PI
1	Essential oil crops commercialization for sustainable Public health products development and rational promotion	Dr. Savina Asimwe
2	Deciphering vector-mediated transmission of Sweet potato mild mottle virus (SPMMV, Potyviridae) in cultivated sweetpotato	Assoc. Prof. Arthur Tugume
3	African swine fever virus (ASFV) severity and viral genomic structural features: opportunities for development of a vaccine in Uganda	Assoc. Prof. Charles Masembe
4	Enhancing Marketing of Fish and Fish Products through an Innovative Mobile and Web-based Platform (eFish Marketing)	Dr. Efitre Jackson
5	Development Of Value-added Phytogetic Feed Additives to replace Conventional Antibiotics in Chicken Feeds	Dr. Alice Nabatanzi
6	Solar Power: Training for Change, Transforming Skills and Attitudes amongst Rural Communities in Northern Uganda	Dr. Willy Okullo
7.	Building A Laboratory System For Quality Checks Of Solar Panels In Uganda	Assoc. Prof. Ireeta Tumps Winston
8.	Evaluating the biological and chemical contaminants in herbal medicinal products sold in Kampala, Uganda: Towards improving the quality of herbal medicine	Dr. Jane Namukobe
9.	Knowledge and perceptions of communities towards genetically modified food crop technology in Uganda.	Mr. Abubakar Sadik Mustafa
10.	Epidemic intelligence of bat-borne corona and other emerging zoonotic viruses	Dr. Kityo Robert Martin
11.	Edible insect farming for improved household income and food security among the refugees and host communities in northern Uganda	Dr. Karlmax Rutaro
12	Evaluating the accuracy of Molecular Bacterial Load Assay to detect Mycobacterium Tuberculosis and monitor treatment response to anti-Tuberculosis therapy in Uganda	Dr. Samuel Wamutu



*Stakeholders meeting with the Uganda National Oil Company (UNOC) team in the Chemistry Boardroom, CoNAS.*

A number of research projects were funded under the MakRIF Round 1 and still under implementation due to delays caused by Covid19 pandemic and lockdown, these include:

- An assessment to identify research and training laboratory equipment for petroleum geosciences and engineering for Higher Education Institutions in Uganda, led by Prof. Joseph Y.T. Mugisha;
- Identification of stable geological environments for sanitary landfills in Uganda's Upcoming Cities, led by Dr. Betty Nagudi.
- Integrated Remediation of Mercury Contaminated Soils in Artisanal and Small-scale Gold Mining Areas of Uganda, led by Dr. Emmanuel Tebandeke
- Presenting New Approaches to the Teaching and Learning of Mathematics, led by Dr. Sseviiri David
- Development of Bacterial systems for production of Industrial Enzymes: Proteases and Levansucrases, led by Dr. Apollo S.P. Balyeidusa
- Improving Makerere University Staff Health and Well-being through Streamlined Physical Activity Programmes, led by Dr. Annet Nankwanga
- Developing Multipurpose Phytonutraceuticals from indigenous wild edible fruits and vegetables for Mitigating Malnutrition among pregnant women and School going children, led by Dr. Alice Nabatanzi
- Development of a Safe and Efficacious Anti-malarial drug from Traditional medicine, led by Dr. Alice Nabatanzi

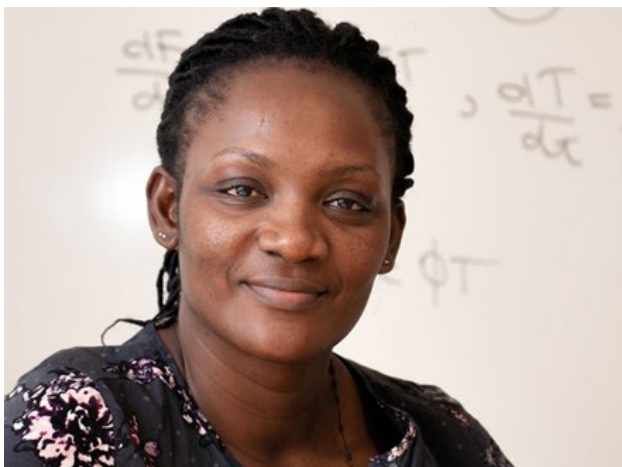


*Project team at site for the field petroleum research station in the MUBFS, Kibale National Park*



*The layout of the national University Petroleum Resources Database (UPRDB) System UPRDB*





*Dr. Betty Nanyonga*

The College of Natural Sciences prides itself of the various partnerships through which a lot of work is accomplished. A number of partnerships were initiated this year.

1. Dr. Betty Nanyonga Kivumbi, a Senior Lecturer in the Department of Mathematics is working in partnership with a number of organisations/committees. This is an example of how our staff implement transfer and co-production of knowledge from their research work.

- a. Uganda COVID-19 Scientific Advisory Committee

- b. Collaborating with National Immunization Technical Advisory Group, on COVAX Deployment plan
  - c. Collaboration with IBM-Research Africa on COVID-19 Uganda Project
  - d. Member, Reference Group – Centre of Excellence for Sustainable Health (CESH)
  - e. Special Collaboration to Address COVID- 19 Pandemic — collaboration with Rwanda

2. Dr. Akoll Peter, Senior Lecturer in the Department of Zoology, Entomology and Fisheries Sciences (ZEFS) facilitated a three-day refresher training course in fish health management to the fisheries staff of Bugiri Local government. The course was aimed at preparing the staff for the upcoming UN-women supported project The project shall support women groups in Bugiri District local government to start fish cage farming earmarking installation of over twenty cages with capacity of 26000 fish per cage. The staff request for the training to remind themselves of the common fish pathogens, approaches to investigate causes of mortalities and management of the disease outbreak. The hands-on training was organised by ZEFS and held at Aquaculture Research and Development Centre, Kajjansi-National Fisheries Resources Research Institute, of National Agricultural Research Organisation.



*Dr. Peter Akoll (1<sup>st</sup> left) with participants*

3. Assoc. Prof. John Mango is working on a Partnership with the East African Centre for Mathematical Research (EACMaR) and the Inter-University Council for East Africa to support mathematical research in East Africa.

## Events, Workshops and Conferences

### Events

1. Stakeholders and experts met Imperial Golf View Hotel, Entebbe on the 9<sup>th</sup> to 10<sup>th</sup> March for a workshop held to finalise curriculum and set-up of the Institute of Forensic Sciences and Medicine at Makerere University. The coordinator of the Institute, Assoc. Professor Tumps Ireeta (Head of Physics, CoNAS). Participants at the meeting were drawn from Makerere University (College of Natural Sciences (CoNAS), College of Health Sciences (CHS), Academic Registrar's Department), Uganda People Defence Forces (UPDF), Uganda Police, Government Analytical Laboratory (GAL), Uganda Law Society and Internal Security Organisation (ISO) and Uganda Wildlife Authority (UWA). The Government of Uganda is working

in partnership with the Government of Turkey to establish the Institute. It is envisaged that the Institute will serve as a Centre of Excellence for forensic science and medicine in academics and service in Uganda, East & Central Africa region and beyond. Makerere University is collaborating with Cukurova University, Adana Turkey in this endeavour. Forensic Science is defined as 'the application of scientific principles and techniques to matters of criminal justice especially as relating to the collection, examination, and analysis of physical evidence'. A core team from CoNAS and CHS is now working to finalise the curriculum for the programmes proposed at the workshop. Three training programmes are proposed to start with: Master of Science in Forensic Chemistry & Toxicology; Master of Science in Forensic Biology & Genomics and Master of Science in Forensic Medicine.

2. A familiarisation tour of the TWIGA project installations was conducted in November 2020. Transforming Water, Weather and Climate Information through In-Situ observations for Geo-services in Africa (TWIGA) is a 4-year project (2018 - 2021) under EU Horizon2020 aimed to transform weather water data into value-added information services.



*Team visiting the TWIGA installations*



3. Africa Water Resources Mobility Network (2020-2024) project funded by the European Union Commission under Intra-Africa Mobility scheme was launched in November 2020.
4. Developing Policy Briefs Workshop was organized and held on the 16<sup>th</sup> October 2020 by NaFIRRI/ NARO, Nutreal Limited and NutriFish Project.
5. The Bee-Nutri-Medicine research project was launched on the 28<sup>th</sup> October 2020 at the National Livestock Resources Research Institute (NaLIRRI), Nakyesasa, Wakiso District. The project is 'Exploring stingless bee products for nutritional & medicinal values in Uganda'. The Principal Investigator, Dr. Moses Chemurot from the Department of Zoology, Entomology and Fisheries Sciences (ZEFs) is working with partners at NaLIRRI, Ministry of Agriculture Animal Industry and Fisheries (MAAIF), Golden Bees Limited, Kyambogo University and Dr. Ambrosoli Memorial Hospital to implement the research.



*The Principal Investigators of the Bee-Nutri-Medicine research Project (from right - Dr. Moses Chemurot and Dr. Kasangaki)*



*Participants at the Bee-Nutri-Medicine Project Launch*

6. The Access and benefit sharing – sustainable use of biodiversity (ABSbio) *Idea Competition in Uganda* was launched on the 26 October, 2020. The Department of Plant Sciences, Microbiology and Biotechnology - Makerere University together with its Partner Universities Leipzig University, Germany and IRGIB Africa University Benin are collaborating on the challenge. The competition targets young researchers and students to set-up solutions to biodiversity challenges and competitive business ideas. The aim of the competition is to develop and present innovative ideas for sustainable businesses and measures to address current biodiversity challenges based on scientific research.
7. Mr. Lugolole Robert, a student in the Department of Physics successfully defended his PhD thesis titled: *Development of a Sensible Heat Packed Bed Energy Storage System for Medium Temperature Applications*.



Mr. Robert Lugolole presenting his PhD thesis

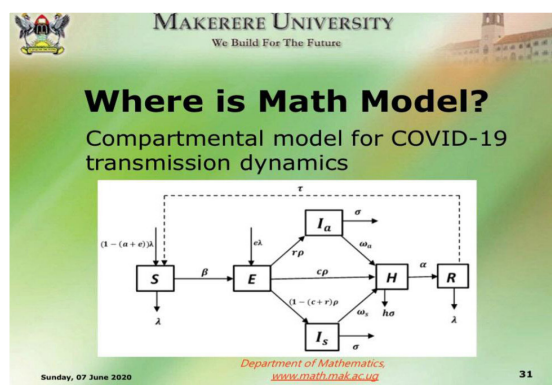
8. NutriFish Project Donates Enriched Maize meal to the Covid-19 National Taskforce: In response to the call to support fellow citizens by H.E. Yoweri Kaguta Museveni, President of Uganda, NutriFish Project donated 2.5 tonnes of maize meal enriched with mukene and amaranth (dodo) seeds. The donation worth 22 million Uganda shillings was handed over to Hon. Mary Karooro Okurut, Minister for General Duties in the Office of the Prime Minister, on the 4<sup>th</sup>, May 2020. NutriFish requested that the donation specifically be given to Mwanamugimu Nutrition Rehabilitation unit at Mulago Hospital. The fish and amaranth

(dodo seeds) enriched composite flour would be used to prepare meals for mothers whose children are admitted, thereby offering healthier meals in comparison to ordinary maize flour.



The NutriFish Team handing over donation to Hon. Mary Karooro Okurut

9. Makerere University presented a Covid-19 Intervention Model: On the 16th June 2020, a research team led by Makerere University presented a '**Mathematical Model of COVID-19 dynamics in Uganda: Using a locally parameterized system to enhance intervention policies**'. The aim of the research from which the model was developed was to study the dynamics of COVID-19 in Uganda and use the results to provide comprehensive forecast of the disease' trends.



The model endeavours to provide appropriate evidence-based policy support to government on the timing and nature of intervention measures. The research team that worked on the study is led by Prof. Joseph Y.T. Mugisha, a Professor of Biomathematics (Department of Mathematics, College of Natural Sciences).



Professor Mugisha is also the Principal of the College of Natural Sciences, Makerere University. Other members of the team are: Dr. Juliet Nakakawa Nsumba (Makerere University), Dr. Joseph Ssebuliba (Makerere University) Dr. Amos Ssematimba (Gulu University), and Dr. Cliff Richard Kikawa (Kabale University). The

Vice Chancellor – Makerere University, Professor Barnabas Nawangwe and the Deputy Vice Chancellor –Academic Affairs, Associate Professor Umar Kakumba attended the presentation.



*The research team with the Vice Chancellor – Professor Barnabas Nawangwe (1st left) and Deputy Vice Chancellor/Academic Affairs – Assoc. Professor Umar Kakumba (1st right)*

10. The Department of Physics hosted a delegation from Russia to talk about training in Nuclear Technology in Russian Universities on the 10<sup>th</sup> March 2020. The event was held from Physics Lecture Theatre. The specific requirements for the education side of the Nuclear Project development in Uganda for 2020 are to allocate scholarships for master level degrees in: nuclear energy and technology; Physics and Astronomy; Chemistry; Technology of materials; and Standardization and metrology.

11. The Department of Mathematics changed leadership at a ceremony held on the 5<sup>th</sup> March 2020; Dr. David Sseviiri handed over the instruments of office to Dr. Godwin Kakuba. The handover ceremony was witnessed by the Human Resources Officer of the College of Natural Sciences, Mr. Godfrey Makubuya, staff from the Department of Mathematics and other administrative staff from the College.

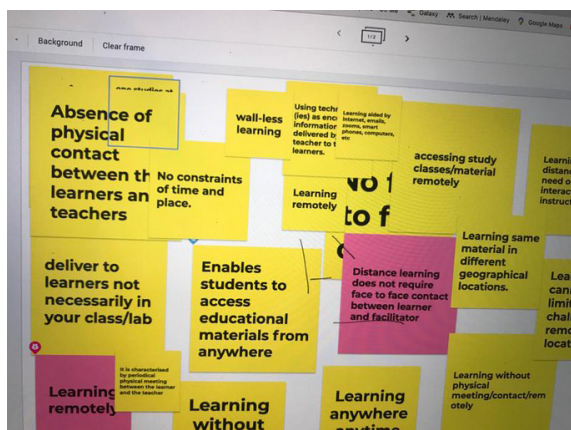


*Dr. Godwin Kakuba (Left) the new Head - Department of Mathematics, CoNAS receiving Instruments of office from former Head, Dr. David Sseviiri*

12. A dissemination seminar for a project titled, 'Designing and developing a cost-effective 3D-printed face shields for frontline healthcare workers fighting against the spread of Covid19 in Uganda' was held on the 17<sup>th</sup> December 2020.
13. In preparation for resumption of studies for the final year students and online learning for other continuing students, the academic staff of the CoNAS attended training on Open Distance and E-Learning (ODEL). The training was conducted by a team from the College of Education and



External Studies (CEES), Makerere University. The staff also received refresher training on use of the Makerere University E-learning Environment (MUELE) Platform where online courses are uploaded.



Screen showing some of the issues discussed during the ODEL Training

## Workshops and Conferences

1. Prof. Esezah Kakudidi - **Department of Plant Sciences, Microbiology and Biotechnology**
  - i) Natural Products Research Network for Eastern and Central Africa Uganda Chapter (NAPRECA). Virtual research seminar. THEME: Exploring Natural Products for Sustainable Health and Agriculture. 24<sup>th</sup> September 2020
  - ii) Uganda National Academy of Sciences 2020 Annual Scientific conference date: 22 - 23 October 2020; Virtual Meeting, THEME: National Resilience and Recovery: Pandemics, Emergencies, Crises, and Opportunities. Member of the organizing committee.
  - iii) State of the World's Plants and Fungi Virtual Symposium from 13 - 15<sup>th</sup> October 2020, hosted by Kew Royal Botanic Gardens; the aim was to present and discuss actions for protecting and sustainably using the world's plant and fungal biodiversity
2. The Department of Zoology, Entomology and Fisheries Sciences (ZEFS) hosted the Global African Swine Research Alliance (GARA) 2020 Global Scientific Meeting from August 24<sup>th</sup> to 26<sup>th</sup> 2020.
3. The Department of Plant Sciences, Microbiology and Biotechnology (Makerere University) together with its Partner Universities Leipzig University, Germany and IRGIB Africa University Benin launched the ABSbio *Idea Competition in Uganda* in October 2020. The aim of the competition is to develop and present innovative ideas for sustainable businesses and measures to address current biodiversity challenges based on scientific research.
4. A Seminar on '**Exploring stingless bee products for nutritional & medicinal values in Uganda (Bee-Nutri-Medicine)**' was hosted jointly by CoNAS and National Agricultural Research Organisation on the 18<sup>th</sup> October 2020.
5. **Dr. M. Owor** - Department of Geology and Petroleum Studies:
 

Participated in the National Validation Consultation Workshop on Knowledge Management and Capacity Building on Groundwater Management from 7 to 8 July 2020 at the Ministry of Water and Environment, Luzira, Kampala.
6. CoTRA Project under the EU: Intra-Africa Mobility Programme held their annual meeting from the 1<sup>st</sup> -5<sup>th</sup> December 2020. The meeting held via Zoom brought together partners from Uganda, Kenya, Malawi, South Africa, Democratic Republic of Congo and Austria.
7. **Dr. Patrick Ssebugere** - Department of Chemistry
  - i) The Thirteenth ANCAP Virtual Symposium organized from Dar es Salaam, Tanzania on December 22-23, 2020. Symposium theme: "Agriculture, Environment and Health Challenges in Africa".
  - ii) Science Diplomacy Alumni Review Workshop (online zoom) organized from Trieste, Italy, held November 9-12, 2020, supported by The World Academy of Sciences.
  - iii) TAIEX DEVCO Workshop on pesticides residue certification (webinar) organized in cooperation with Ministry of Internal Affairs / Directorate of Government Analytical laboratory of Uganda held on September 24-25, 2020. Funded by the Technical Assistance

and Information Exchange Instrument for the European Commission.

**8. Dr. Betty Nanyonga Kivumbi** – Department of Mathematics

- i). Organised the first MathCamp in Uganda in January 2020
- ii) Speaker/ Panelist: Next Einstein Forum - Global Gathering 2020. Addressing misinformation on research outcomes regarding infection projections and control, December 09, 2020 (Online)
- iii) COVID-19 Webinar for health workers, WHO. August 14, 2020.
- iv) Webinar on the response of African Science Academies to the COVID-19 Pandemic, Network of African Science Academies (NASAC), July 22, 2020.
- v) Participated in the “Theory of Change to accompany the feasibility study for the Africa-UK physics partnership project”. July 01, 2020. Webinar
- vi) Panelist for “Focusing on Mathematical Models & Analysis on COVID-19 Crisis” Webinar, June 17-18, 2020.
- vii) RUN4MATH Marathon to celebrate the International Day of Mathematics (IDM) March 2020.

**9. Assoc. Professor Fredrick Muyodi** – Deputy Principal, CoNAS

**i) Seminar / Workshop: 5<sup>th</sup> - 7<sup>th</sup> March 2020.**

Assoc. Prof. Fredrick J Muyodi as Co-Principal Investigator and a team from College of Natural Sciences, Makerere University; Assist Professor Julia Bello Bravo as PI from Michigan State University (MSU) USA and Dr. F. Rutechura a co-PI from the University of Dar es Salaam held a seminar and several meetings on the funded exploratory travel grant from the Alliance for African Partnership (AAP). As part of the grant, attended meetings at Makerere University and then a seminar in Mbarara. Also visited Banana farmers in Mbarara and Bushenyi Districts. The project title is “Improved Agricultural Messaging to Prevent Losses due to Banana Xanthomonas Wilt (BXW)

in Uganda and Tanzania”. The team was working together to draft a long and short-term Strategic Plan of Action.

**ii) Seminar / Workshop: 9<sup>th</sup> to 11<sup>th</sup> March 2020.**

Assoc. Prof. Fredrick J Muyodi as Co-Principal Investigator and a team from College of Natural Sciences, Makerere University; Assist Professor Julia Bello Bravo as PI from Michigan State University (MSU) USA and Dr. F. Rutechura a co-PI held a seminar in Bukoba and several meetings on the funded exploratory travel grant from the Alliance for African Partnership (AAP). As part of the grant, attended meetings and visited Banana farmers in Karagwe and Biharamuro counties. The project title is “Improved Agricultural Messaging to Prevent Losses due to Banana Xanthomonas Wilt (BXW) in Uganda and Tanzania”. The team was working together to draft a long and short-term Strategic Plan of Action.

**10. Assoc. Prof. John M. Mango** – Department of Mathematics

- i) Organised the Steering Committee Meeting for the East African Centre for Mathematical Research, held in Kampala; 9<sup>th</sup> to 10<sup>th</sup> January 2020.
- ii) Presented a paper as Guest Speaker at the African Mathematics Conference held in Nairobi, 19<sup>th</sup> to 20<sup>th</sup> November 2020.

## Awards and Trainings

**Dr Alice Nabatanzi** – Department of Plant Sciences, Microbiology and Biotechnology

1. Completed Post-Doc at University of Pretoria, South Africa, December 2020
2. Completed TUKS Young Research Leader Programme, at University of Pretoria, South Africa

**Dr. Patience Tugume** - Department of Plant Sciences, Microbiology and Biotechnology

1. Green Entrepreneurship Massive Online Course (MOOC) (2<sup>nd</sup> November to 11<sup>th</sup> December 2020) offered by The United Nations Development Programme (UNDP), Convention on Biological Diversity, EcoEnterprises Fund, FaithInvest, Fordham University's Gabelli School of Business,

Lehigh University, Regional Activity Centre for Sustainable Consumption and Production, SEED, and The GEF Small Grants Programme.

**Prof. Eseza Kakudidi** - Department of Plant Sciences, Microbiology and Biotechnology

1. Green Entrepreneurship Massive Online Course (MOOC) (2nd November to 11th December 2020) offered by The United Nations Development Programme (UNDP), Convention on Biological Diversity, EcoEnterprises Fund, FaithInvest, Fordham University's Gabelli School of Business, Lehigh University, Regional Activity Centre for Sustainable Consumption and Production, SEED, and The GEF Small Grants Programme

**Ms. Susan Kigozi, Mr. Willy Kasule and Ms. Judith Nayebara** – Department of Geology and Petroleum Studies

1. Trained on Machine learning using R-programming Language from 28 September to 9 October 2020. The training organized by the AfriWatSan Research Project was aimed at the use of R software for water quality data analysis and generating models from this data.

**Ms. Zaam Ssali** – Principal Communication Officer, CoNAS

1. Zaam is a participant of the online **University Administration Support Program (UASP) Research Management and Leadership Course**, funded by the Carnegie Corporation of New York and administered by IREX. The training began in October 2020 and will be concluded in June 2021.

**Dr. Betty Nanyonga Kivumbi** – Department of Mathematics

1. Short Certificate Course on Gender Based Analysis of Vector- Borne diseases and Climate Change. University of Witwatersrand, Johannesburg, South Africa, September – October 2020.

**Dr. Patrick Ssebugere** – Department of Chemistry

1. Wuppertal Online Course – Wuppertal Annual Course on Loss Prevention and Safety Promotion in the Chemical Process Industries held September 7-30, 2020 organized from the University of Wuppertal, Germany. Supported by the Foreign Office of the Federal Republic of

Germany and Organisation for the Prohibition of Chemical Weapons (OPCW).

## Awards

1. As part of the 100 years of existence to celebrate the geological activities across Uganda, the Directorate of Geological Survey and Mines, Ministry of Energy and Mineral Development has honoured the Department of Geology and Petroleum Studies, CoNAS, Makerere University with an Award of Recognition.



*Award of Recognition to the Department of Geology and Petroleum Studies, CoNAS, Makerere University from the Directorate of Geological Survey and Mines, Ministry of Energy and Mineral Development*

2. A new species of butterflies (*Megahepystis akiteae* sp. n.) was named after Dr. Perpetra Akite, a Lecturer in the Department of Zoology, Entomology and Fisheries Sciences. This recognition was awarded in lieu of her entomology and ecology research work with moths and butterfly.





Dr. Pepetra Akite and the species named after her is shown below



*Megaherpystis akiteae* sp. n.

**Reference:** Leif Aarvik (2020). Review of *Megaherpystis* Diakonoff, 1969 (Lepidoptera, Tortricidae) with description of 23 new species. *Norwegian Journal of Entomology* 67, 151–188

I am more than honored to have a new species to science named after me. The hallmark of my 2020!

Lets welcome the newest Akite.

*Megaherpystis akiteae* sp. n.

**Distribution.** Uganda.

**Etymology.** The species is named after Perpetra Akite, Kampala, Uganda, who was one of the organizers of the Afrotropical Lepidoptera Workshop in Kibale National Park in 2014.



3. **Mr. Godwin Anywar**, an Assistant Lecturer, Department of Plant Sciences, Microbiology and Biotechnology was inducted as a Fellow of the National Academy of Sciences.



Mr. Godwin Anywar



Dr. Robert Kityo and the species named after him



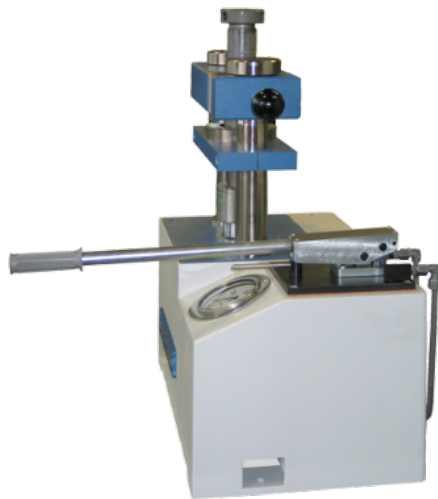
- 4. Department of Geology and Petroleum Studies,** Funding from the Geological Laboratory Support Fund was used to procure the following workshop and laboratory equipment:



*4" x 5" Laboratory Jaw Crusher 911MPEJC 100 plus accessories for processing raw field geological materials.*



*Bench Top X-Ray Fluorescence Spectrometer - Epsilon 1 XRF analyzer used for analysis of any type of sample in many industry segments such as cement, cosmetics, environmental, food, forensics, metals and coatings, mining and minerals, nanomaterials, petrochemicals, pharmaceuticals, polymers and RoHS-2.*



*TP 20 Manual Pellet Press for making pellets for the desk Epsilon 1 XRF analyzer. This manually operated hydraulic press allows all the compacting operations common in the laboratory to be carried out.*

- 5. Ms. Caroline Namanya** was awarded the BGF grant for her PhD studies. Caroline is studying for a PhD in Mathematics at the Department of Mathematics (College of Natural Sciences), Makerere University in Uganda. She was nominated for the grant by one of her advisors Professor Michael Wemyss, University of Glasgow, UK. The subject of the research project, co-supervised by Professor David Sseviiri from Makerere University, is Chamber Structures of 3-Fold Flops.



*Ms. Carol Namanya*

BGF grants are funded by generous donations from all the Breakthrough Prize winners. Every year, the award of full PhD grants goes to three students engaged in a PhD degree in the mathematical sciences in a developing country.

## Innovations

**Solar Tent-Dryer:** The NutriFish project, led by the Department of Zoology, Entomology and Fisheries Sciences, College of Natural Sciences, Makerere University, has introduced a simple but effective Solar Tent drying technology that will help improve drying of small fishes. This particular Solar Tent Dryer, the first of its kind in Uganda, is a greenhouse-like structure constructed with bricks and a simple wooden frame that is wrapped with transparent polythene plastic sheet. It works through natural convection where the sun's heat is trapped inside and dries the fish are that are spread racks covered with mesh shelving thus drying the fish faster, even during rainy season. Unlike other solar dryers used for drying fruits and cereals that are small, the fish solar dryer on Lake Victoria is large and has a capacity of drying up to 850 kg of fresh mukene during a single drying cycle. NutriFish researchers are continuing to modify and optimize the solar tent dryer design to enhance its efficiency with regard to the balance between ventilation and warmth. Once optimized, the project expects to up-scale the innovation out to the rest of the country and within the East African region.



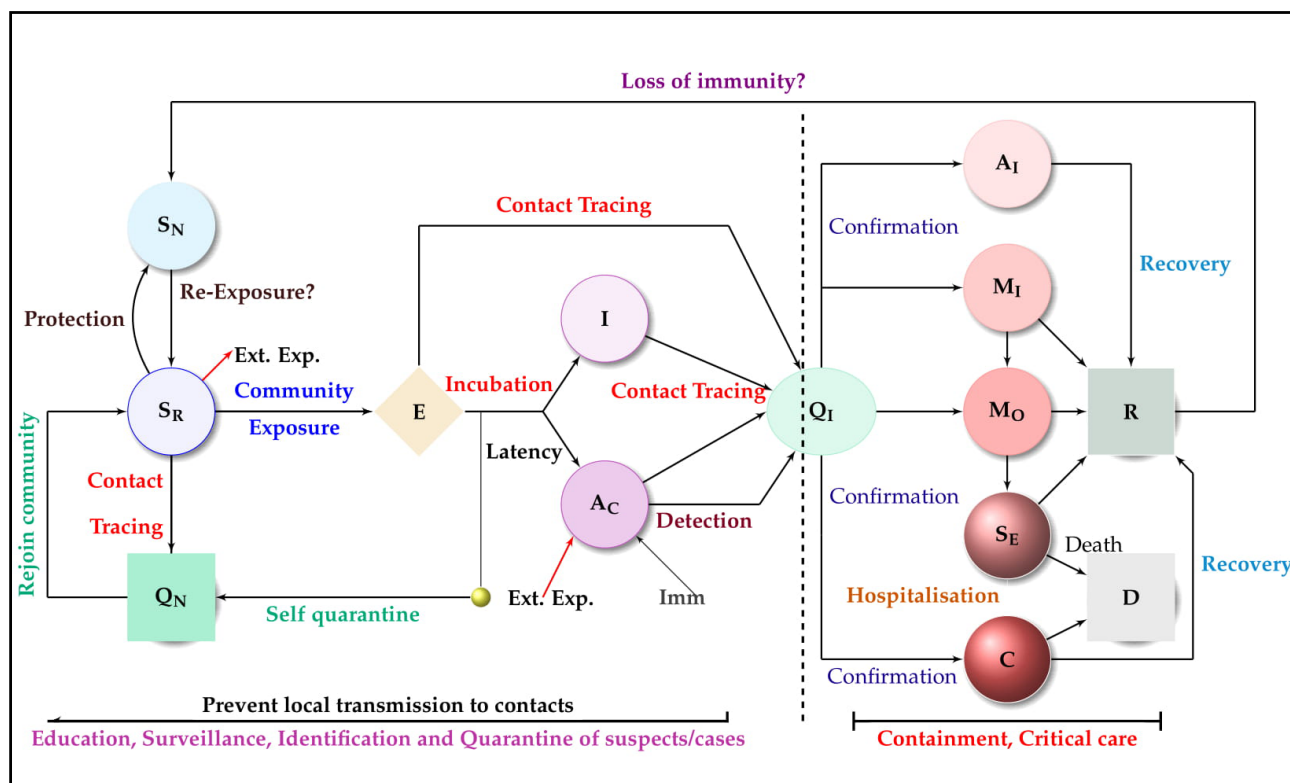
*The newly built Solar-tent Dryer at Kiyindi Landing Site, Buikwe District on the shores of Lake Victoria*



*Dr. Jackson Efitre (PI- NutriFish Project) handing over keys of the Solar-tent Dryer to Kiyindi Fishers Community*

Practicals to the Home for the Rural student (PI – Dr. Taddeo Ssenyonga): Laboratory Practicals in Sciences are very key in teaching so that the student/pupil is practically oriented and is able to enhance his/her acquired knowledge from the theory learned to be able to solve problems in real-life situations. The Department of Physics and generally all the other Departments in the College of Natural Sciences have over the years noted that the students who join the University are not well prepared in their practical skills. Most of these students, especially from rural areas, have confessed that they had never done any laboratory practical in their student lives and are just seeing some of the equipment they had seen in the textbooks at the university for the first time. Also, the poor performance in sciences at secondary schools could be attributed to the lack of practicals being done at those lower levels. This project is intended to provide solutions to the above noted problems. It is piloted in Buyende district, Kagulu subcountry and the following schools St. James Kagulu S.S.S, Irundu Modern S.S, Irundu Central, Kagulu Hills, Irundu Good Shepherd, Divine S. S., Modern S. S. and Irundu Progressive are participating in the project.

**Uganda Covid-19 Working Model:** Dr. Betty Nanyonga Kivumbi serving on the Uganda COVID-19 Scientific Advisory Committee designed the Uganda Covid-19 working model, this demonstrates the partnership between Higher Education Institutions and policy.



The Uganda Covid-19 Working Model

**Access and Benefit Sharing-Sustainable use of Biodiversity (ABSBio) (Prof. Esezah Kakudidi, Dr. Patience Tugume, Mr. Godwin Anywar:** project at Makerere University coordinated at the Department of Plant Sciences, Microbiology & Biotechnology, in partnership, Inter Regional University of Industrial engineering Biotechnology and Applied Sciences (IRGB) - Africa University in Benin & Leipzig University in Germany – the overall coordinator of the project.

ABSBio launched an online bio-based innovative business idea competition in October 2020. The aim of the business idea is to promote sustainable use of biodiversity with the potential to positively contributing to the triple bottom line (people, planet and profit). The project is sponsored by DAAD with financial support from the Federal Ministry of Economic Cooperation and Development- Germany.





# HUMAN RESOURCES

The College of Natural Sciences has a total of 155 academic staff; 5 of them are Professors, 12 are Associate Professors, 27 are Senior Lecturers, 56 are Lecturers and 52 Assistant Lecturers. There are 3 Curators (2

in the Department of Plant Sciences, Microbiology and Biotechnology and 1 in Department of Zoology, Entomology and Fisheries Sciences.

**Table 4: Academic Staff numbers on ground in 2020**

DEPARTMENT / UNIT		P	AP	SL	L	AL	Curators	Total
Biochemistry and Sports Science	Biochemistry	0	0	5	8	6	0	19
	Sports Science	0	0	2	0	6	0	8
Zoology, Entomology & Fisheries Sciences		0	3	5	7	3	1	19
Plant Sciences, Microbiology & Biotechnology		1	3	2	11	8	2	27
Physics		1	1	3	6	7	0	18
Mathematics		1	2	3	11	8	0	25
Chemistry		2	2	3	9	9	0	25
Geology and Petroleum Studies		0	1	4	4	5	0	14
Total		5	12	27	56	52	3	155

**Key:** P = Professor; AP = Associate Professor; SL = Senior Lecturer; L = Lecturer; AL = Assistant Lecturer; TA = Teaching Assistant

**Table 5: Staff Changes during 2020:**

NAMES	RANK	DEPARTMENT/UNIT
<b>Retirements</b>		
Dr. Deborah Baranga	Professor	Zoology, Entomology and Fisheries Sciences
Dr. Sylvester Nyakaana	Professor	Plant Sciences, Microbiology and Biotechnology
Mr. Michael Nganda	Lecturer	Mathematics
Dr. Erasmus Barifaijo	Associate Professor	Geology and Petroleum Studies
Dr. Steven Allan Nyanzi	Associate Professor	Chemistry
Dr. Hannington Oryem-Origa	Professor	Plant Sciences, Microbiology and Biotechnology
Ms. Deborah Nampiima	Lab Assistant	Zoology, Entomology and Fisheries Sciences
Ms. Rachael Nabwami	Cleaner	Biochemistry and Sports Science
Mr. Steven Opeesha Ochepa	Lab Attendant	Plant Sciences, Microbiology and Biotechnology
<b>Contracts Ended</b>		
Dr. Shahasi Yusuf Athman	Lecturer	Plant Sciences, Microbiology and Biotechnology
<b>Promotions</b>		
Dr. Florence Mutonyi D'Ujanga	Professor	Physics
Dr. Peter Akoll	Senior Lecturer	Zoology, Entomology and Fisheries Sciences
<b>Recruitments</b>		
Dr. Mahadi Ddamulira	Lecturer	Mathematics
Dr. Paula Iragaba	Lecturer	Plant Sciences, Microbiology and Biotechnology



NAMES	RANK	DEPARTMENT/UNIT
Dr. Reuben Ssali	Lecturer	Plant Sciences, Microbiology and Biotechnology
Mr. Bernard Matovu	Assistant Lecturer	Zoology, Entomology and Fisheries Sciences
Mr. Mwongyera Hillary	Assistant Lecturer	Geology and Petroleum Studies
Mr. Patrick Mulindwa	Assistant Lecturer	Chemistry
Mr. Denis Mutebi	Assistant Lecturer	Geology and Petroleum Studies
<b>Transfers</b>		
Mr. Edward Lwanga	Driver	Geology and Petroleum Studies from School of Gender and Women Studies
Ms. Nazziwa Passy Lwanga	Messenger	From Department of Mathematics to Directorate of Internal Audit
<b>Resignations</b>		
Dr. John Mulindwa Kitayimbwa	Lecturer	Mathematics
Mr. Emmanuel Musisi	Principal Technician	Biochemistry and Sports Science
Mr. Enock Emodok	Lab Assistant	Geology and Petroleum Studies
<b>Death</b>		
Ms. Leticia Gimbo	Sanitary Cleaner	Zoology, Entomology and Fisheries Sciences

The College awarded plaques to staff for service as leaders, those recognised are:

	NAME	POSITION OF LEADERSHIP
1	Prof. John Mango Magero	Deputy Principal
2	Prof. Hannington Oryem-Origa	Deputy Principal
3	Prof. Juma Kasozi	HoD, Mathematics and Dean – School of Physical Sciences
4	Prof. Muhammad Ntale	HoD, Chemistry
5	Prof. Florence Mutonyi Dujanga	HoD, Physics
6	Dr. Joseph Kyambadde	HoD, Biochemistry&Sports Science
7	Prof. Anne Margaret Akol	HoD, Zoology
8	Dr. Perpetua Ipulet	HoD, Plant Sciences
9	Dr. John Vianney Tiberindwa	HoD, Geology and Petroleum Studies
10	Dr. David Sseviiri	HoD, Mathematics
11	Prof. Maud Kamatenesi Mugisha	Dean – School of Biosciences
12	Prof. Fredrick Muyodi	Dean – School of Biosciences
13	Prof. Winton Tumps Ireeta	HoD, Physics
14	Dr. John Wasswa	HoD, Chemistry

## Conclusion

Work at the College of Natural Sciences is going on well, however the challenge of Covid19 pandemic and lockdown greatly affected work at the College in terms of delays in teaching and research projects. The University Council and Management approved ODEL/MUELE to alleviate the delays in teaching, however upload of teaching material has been slow and some of the students aren't able to attend with complaints of non-affordability of IT equipment and data. It is our hope that 2021 will bring better tidings.



# APPENDIX



## CoNAS Academic and Administrative Units

### Departments in the College of Natural Sciences

The mandate of the College of Natural Sciences (CoNAS) is to carryout teaching, research and extension services in the basic sciences. This is possible through the expertise and specialisation of staff spread in the seven departments of the college.

### Department of Biochemistry & Sports Science

This is composed of two units, Biochemistry and Sports Science. Prior to transformation of Makerere as a collegiate university, the units were separate departments; however they joined to form a department because of the mutual science that connects the two subjects.

- 1) **Biochemistry Unit:** The mandate of the Biochemistry unit is to impart knowledge, laboratory skills, research skills and experience in biochemistry to diverse group of students pursuing science, medical, veterinary, pharmacy, nursing, agriculture and food science degrees. Also the mission for the unit is to provide transformative, innovative teaching, learning, research in biochemistry and community service responsive to changing needs of the nation and region.
- 2) **Sports Science unit** prepares students for a successful career in kinesiology, health and wellness, human fitness and performance, recreation and event management fields. The program equips students with the knowledge, skills and values needed for career in areas of physical activity and health, exercise physiology, sports management and coaching, biomechanical analysis, kinder-kinetics, geriatrics and gerontology, special mobility, nutrition and rehabilitation. Students gain a foundation needed for graduate training in professional service provision and research.

### Department of Chemistry

The department is one of the oldest at Makerere University established in 1944. The department is responsible for the teaching and research of Chemistry throughout the University. Chemistry is a science whose

applications cut across many disciplines and this can simply be illustrated by the use of the name preceded by a suffix or a qualifying adjective to signify its application: for example, biochemistry, geochemistry, neurochemistry, agricultural chemistry, industrial chemistry and medicinal chemistry. These applications naturally mean that chemistry is a forerunner to various disciplines which need to draw on its services in one way or another. The mission of the department is to produce competitive graduates, create new knowledge, and rigorously promote excellence in chemistry and related studies.

### Department of Geology and Petroleum Studies

The department is unique in terms of its set-up, history and the way it has evolved to its existence to-date. Geology is the study of the origin, evolution, composition and structure of the earth and it draws upon all basic sciences. This subject was first taught at Makerere in the Faculty of Science in 1968. It was a component in the Department of Geography but later became a fully-fledged Department in 1969. In 2010, the Makerere University Council renamed the Department of Geology as the Department of Geology and Petroleum Studies. This was geared towards targeting knowledge and skills training to support petroleum exploration and future production activities that had taken off in the Albertine Graben. The department is identified as a Centre of Excellence for Geosciences and Petroleum by the Northern Corridor States. Currently the department welcomes students from within and outside the region who can specialize in Geosciences disciplines of choice. Deliberate Departmental efforts together with vibrant student organizations attract support from local and international institutions for specialized software, library and laboratory materials and facilities, hands-on trainings, fieldwork, research, internship and employment; these include academic and government institutions, geological, mining, water, oil and gas companies as well as service organizations. The mission of the department is to create and impart knowledge in both pure and applied geology to society through innovative teaching, research and services, taking into perspective global needs.

### Department of Mathematics

The department is responsible for the teaching and research in Mathematics throughout the University. Every single employer wishes to have an employee who is

a problem solver. As such, a mathematician can become many things. Among them are: a teacher, lecturer, computer programmer, banker, epidemiologist, actuary, stock broker, research scientist and financial director. With a first degree in Mathematics, one can pursue a master's degree in other disciplines such as Computer Science, Engineering and Statistics. The Department works closely with the Uganda Mathematical Society (UMS) in promoting mathematical competence at all levels of education, and promoting its use in public life.

The mandate of the department is to teach and do research in mathematics and promote the use of mathematics in daily life; and the mission is to provide world class teaching, cutting edge research and contribute to the academic growth of the subject, locally, regionally and internationally.

### **Department of Physics**

This department started in 1952. Training in Physics lays foundations for the quest of knowledge and finding solutions for national development. Physicists are needed in various employment sectors such as Education, Telecommunications, Financial Institutions, Natural Resources and Manufacturing sectors to mention but a few. Integrating laboratory work into theory in our current programmes produces graduates who are practically oriented and are able to use the acquired knowledge to solve problems in real-life situations. Our students work in the transmission stations of most of the telecommunication companies like MTN, Airtel, Orange and UTL. They also work in Uganda National Bureau of Standards as well as Civil Aviation Authority at the Control Tower mainly. With Physics the sky is the limit since you have the basic foundations to work anywhere. We have also had students who have started their own businesses because of the practical and hands on exposure at the department. They have workshops that repair radios, TVs, Fridges, Phones and other electronic gadgets. The mission of the department is to be the leader in teaching and carrying out research in Physics. The mission of the department is to create and impart knowledge in physics to society through training, research and community extension services for sustainable development.

### **Department of Plant Sciences, Microbiology & Biotechnology**

The department started in 1957, and includes the Herbarium established in 1945 and the Botanic garden

in 1946. At the formation of colleges in 2011, the department had been merged with that of Zoology to form the department of biology due to the long-standing commonality between the two units. However, the department was split in 2015 and renamed Department of Plant Sciences, Microbiology and Biotechnology (PMB), to reflect the academic knowledge and skills taught in the department. Over the years, the department has developed staff expertise in Ecology, Taxonomy and Systematics, Curation and Herbaria, Physiology, Genetics, Plant Pathology, Microbiology (Bacteriology, Mycology and Virology), Molecular Biology, Biotechnology, Ethnobotany, Ethnopharmacology and Conservation Biology.

Graduates of the department are scientists, practitioners; in specialized areas in Agriculture, Environment, Natural Resources, Wildlife, Pharmacy and Pharmaceutics, Public governance among others. PMB is committed to achieving learning and training environment for students that are second to none in the region and, in doing so, provide the resources necessary for academic staff to reach their full potential.

The mission of the department is to be the most pre-eminent Department of Plant Sciences, Microbiology and Biotechnology not only in the East African region but also in Africa.

### **Department of Zoology, Entomology & Fisheries Sciences**

Zoology is a branch of biology that deals with the study of animals, animal-like organisms and their interactions with people and the environment. The department traces its origin from the Department of Biology at the University of East Africa, where Makerere was a constituent college. Botany and zoology were merged to form the Department of Biology in 2011 at the formation of colleges. The unit was split in 2015 and zoology renamed Department of Zoology, Entomology and Fisheries Sciences (ZEFS) to reflect the expertise, changing trends in knowledge and its application for socio-economic development.

Graduates of the department have career opportunities in government, industry, private sector enterprise and research institutions linked to biomedical and agricultural applications, tourism, fisheries, water, environment, among others. Many of the department's graduates to-date work in/for government, academia, research organisations in Uganda and internationally and the private sector.



The mandate of the department is to conduct research and teaching in basic and applied biological sciences focusing on the broad diversity of animals (terrestrial and aquatic life including microorganisms) that allow for socioeconomic development' charts the way for the department. ZEFS' mission is to provide quality training and research excellence that addresses the needs and challenges associated with the zoological, insect and fisheries sciences.

## **Administrative Units**

### **i) College Accounts Office**

The College Accounts Office is headed by a Bursar who is responsible for the financial administration and planning at the college and maintains college books of accounts. The office works under the guidance of the University Bursar.

### **ii) College Communication Office**

At the formation of colleges in 2011, communication offices were established with the principal objective to complement and supplement the traditional function of the Public Relations Office of Makerere University. The Communication Office at the College is headed by a Principal Communication Officer supported by a Web Administrator. The general role of the office is to promote the college image through branding, marketing, management of partnerships, improve information dissemination and online presence.

### **iii) College Human Resource Office**

The Human Resource Office at the College is a representation of the University Director of Human Resources. The office keeps custody of staff records and secretariat of the College Appointments Committee.

### **College Library**

The College Library is a unit of the Main Library of the University at the College headed by a Librarian. The unit supports the role of the University Library which is mandated to collect, develop, disseminate, manage, control and coordinate all library and information services of Makerere University. Within this structure, each department in the college also has a book-bank where students and staff can access material specific to particular department.

### **iii) College Registry Office:**

The College Registry Office is headed by a College Registrar who serves as a representative of the University Academic Registrar. The College Registrar is supported by School Registrars. The office keeps custody of student academic records and serves as secretariat to academic boards of the schools and college.

### **iv) College Procurement Office:**

This office is responsible for management of the supply chain for the college, procurement and disposal services. The office is also the secretariat to the College Procurement Committee. The Procurement Officer is in-charge of this Office.

## CoNAS Staff List

### Department of Mathematics

No.	Name	Title	Education	Status
<b>Academic Staff</b>				
1	Prof. Joseph Y.T. Mugisha	Professor (Principal, CoNAS)	PhD	Permanent
2	Dr. John Magero Mango	Assoc. Professor	PhD	Permanent
3	Dr. Juma Kasozi	Assoc. Professor	PhD	Permanent
4	Dr. David Sseviiri	Senior Lecturer	PhD	Permanent
5	Dr. Betty Kivumbi Nannyonga	Senior Lecturer	PhD	Permanent
6	Dr. Godwin Kakuba	Senior Lecturer (HOD)	PhD	Permanent
7	Dr. Saul Hannington Nsubuga	Lecturer	PhD	Permanent
8	Dr. Ismail Geoffrey Mirumbe	Lecturer	PhD	Permanent
9	Dr. Joseph Ssebuliba	Lecturer	PhD	Permanent
10	Dr. Hassan. Ddumba	Lecturer	PhD	Permanent
11	Dr. Henry Kasumba	Lecturer	PhD	Permanent
12	Dr. Alex S. Bamunoba	Lecturer	PhD	Permanent
13	Dr. Fred Mayambala	Lecturer	PhD	Permanent
14	Dr. Alex Behakanira Tumwesigye	Lecturer	PhD	Permanent
15	Dr. Onesole Kurama	Lecturer	PhD	Permanent
16	Dr. Mahadi Ddamulira	Lecturer	PhD	Contract
17	Dr. Juliet Nakakawa	Assistant Lecturer	PhD	Permanent
18	Dr. Denis Wokiye	Assistant Lecturer	PhD	Permanent
19	Mr. Wilber Grace Naigambi	Lecturer	MSc.	Permanent
20	Mr. Yasin Kikabi	Assistant Lecturer	MSc	Permanent
21	Mrs. Betty Nabiyonga Kirenga	Assistant Lecturer	MSc.	Permanent
22	Mr. Hassan Wasswa Kayondo	Assistant Lecturer	MSc	Permanent
23	Mr. David Ddumba Walakira	Assistant Lecturer	MSc.	Permanent
24	Mr. Nathan Muyinda	Assistant Lecturer	MSc.	Permanent
25	Mr. Innocent Ndikubwayo	Assistant Lecturer	MSc.	Permanent
<b>Support Staff</b>				
27	Nakku Goretti	Admin Secretary II		Permanent
28	Wandera Abel	Library Assistant		Permanent
29	Habarurema Andrew	Cleaner/Messenger		Permanent
30	Nassuuna Jennifer	Cleaner/Messenger		Permanent
31	Namembwa Agnes	Cleaner/Messenger		Permanent

## Department of Chemistry

No.	Name	Title	Education	Status
<b>Academic Staff</b>				
1	Prof. Jolocam Mbabazi	Professor	PhD	Contract
2	Prof. Robert Byamukama	Professor	PhD	Permanent
3	Dr. George William Nyakairu	Assoc. Professor	PhD	Permanent
4	Dr. Muhammad Ntale	Assoc. Professor (Dean, SPS)	PhD	Permanent
5	Dr. John Wasswa	Senior Lecturer (HOD)	PhD	Permanent
6	Dr. Gabriel Kasozi	Senior Lecturer	PhD	Permanent
8	Dr. Betty B. Naziriwo	Senior Lecturer	PhD	Permanent
7	Dr. Emmanuel Tebandeke	Lecturer	PhD	Permanent
9	Dr. Hassan Kisiki Nsamba	Lecturer	PhD	Permanent
10	Dr. Jane O. Namukobe	Lecturer	PhD	Permanent
11	Dr. Patrick Ssebugere	Lecturer	PhD	Permanent
12	Dr. Kenneth Arinaitwe	Lecturer	PhD	Permanent
13	Mr. James Sekamatte	Lecturer	MSc.	Permanent
14	Dr. Ibrahim Karume	Lecturer	PhD	Permanent
15	Dr. Job Samuel Kasule	Lecturer	PhD	Permanent
16	Dr. Edward Mubiru	Lecturer	PhD	Permanent
17	Dr. Dan Egesa	Assistant Lecturer	PhD	Permanent
18	Mr. Peter Ernest Maiki	Assistant Lecturer	MSc.	Permanent
19	Ms. Madina Mohammed Adia	Assistant Lecturer	MSc.	Permanent
20	Mr. Solomon Yiga	Assistant Lecturer	MSc.	Permanent
21	Mr. Richard Ochieng	Assistant Lecturer	MSc.	Permanent
22	Ms. Florence Nantaba	Assistant Lecturer	MSc.	Permanent
23	Mr. Fahad Matovu	Assistant Lecturer	MSc.	Contract
24	Ms. Ruth Mbabazi	Assistant Lecturer	MSc.	Contract
25	Mr. Patrick Mulindwa	Assistant Lecturer	MSc.	Contract
<b>Technicians</b>				
25	Mr. Bonny Balikuddembe	Principal Technician		Permanent
26	Mr. Stephen Mulinda	Senior Technician		Permanent
27	Mr. Geoffrey Jjagwe Nkalubo	Senior Technician		Permanent
28	Mr. Tebadanya Susane	Technician I		Permanent
29	Mr. Tindyebwa Samuel	Technician I		Permanent
30	Mr. Peter Kavuma	Technician II		Permanent
31	Mr. Dan Sensamba	Technician II		Permanent



32	Mr. Edward Mukasa	Technical Assistant	Permanent
<b>Support Staff</b>			
33	Ms. Margaret Nabachwa	Copy Typist	Permanent
34	Mr. Steven Masongole	Lab Assistant	Permanent
35	Mr. John Kasozi Muliika	Lab Assistant	Permanent
36	Mr. Jackson Amanyana	Lab Assistant	Permanent
37	Mr. Moses Mutenyo	Lab Assistant	Permanent
38	Mr. Tom Adriko	Lab Attendant	Permanent
39	Mr. Joseph Tumwekwasi	Lab Attendant	Permanent

### Department of Geology and Petroleum Studies

No.	Name	Title	Education	Status
<b>Academic Staff</b>				
1	Dr. A. Muwanga	Assoc. Professor	PhD	Contract
2	Dr. J.V. Tiberindwa	Senior Lecturer	PhD	Permanent
3	Dr. M. Owor	Senior Lecturer / HOD	PhD	Permanent
4	Dr. B. Nagudi	Senior Lecturer	PhD	Permanent
5	Dr. A. G. Batte	Senior Lecturer	PhD	Permanent
6	Dr. J. M. Kiberu	Lecturer	PhD	Permanent
7	Dr. K. Aanyu	Lecturer	PhD	Permanent
8	Dr. Simon Echegu	Lecturer	PhD	Permanent
9	Ms. P.Kulyanyingi	Lecturer	MSc.	Permanent
10	Mr. W. Kawule	Assistant Lecturer	MSc.	Permanent
11	Mr. L. Twinomujuni	Assistant Lecturer	MSc.	Permanent
12	Mr. Mukiibi Ivan Ssewanyanga	Assistant Lecturer	MSc.	Permanent
13	Mr. Hillary Mwongyera	Assistant Lecturer	MSc.	Contract
14	Mr. Denis Mutebi	Assistant Lecturer	MSc.	Contract
<b>Part-time Lecturers</b>				
15	Mr. Joseph Okello	Assistant Lecturer	MSc.	
16	Ms. Asenath Kwagalakwe	Assistant Lecturer	MSc.	
17	Mr. John-Vianney Tiberindwa	Lecturer	PhD	
<b>Technicians</b>				
17	Ms. Susan Kigozi	Chief Technician		Permanent
18	Mr. Moses Kasaka	Principal Technician		Permanent
19	Mr. Willy Kasule	Technician		Contract
<b>SUPPORT STAFF</b>				
20	Ms. Tumwebaze Jeninah	Senior Copy Typist		Permanent
21	Mr. Edward Lwanga	Driver		Permanent

22	Ms. Ssekamanya Grace	Lab Assistant	Permanent
23	Mr. Charles Bagaramba	Cleaner	Permanent
24	Mr. John Obua Okullo	Cleaner	Permanent
25	Ms. Christine Auma	Cleaner	Permanent

## Department of Physics

No.	Name	Title	Education	Status
<b>Academic Staff</b>				
1	Dr. F. D'Ujanga	Professor	PhD	Contract
2	Dr. W. T. Ireeta	Assoc. Professor (HOD)	PhD	Permanent
3	Dr. T.J. Ssenyonga	Senior Lecturer	PhD	Permanent
4	Dr. W. Okullo	Senior Lecturer	PhD	Permanent
5	Dr. D. Okello	Senior Lecturer	PhD	Permanent
6	Dr. N. Ssebiyonga	Lecturer	PhD	Permanent
7	Dr. N. Karidewa	Lecturer	PhD	Permanent
8	Dr. Bosco Oruru	Lecturer	PhD	Permanent
9	Dr. N. Kwarikunda	Lecturer	PhD	Permanent
10	Dr. Daniel Mukiibi	Lecturer	PhD	Probation
11	Dr. D. Muyimbwa	Lecturer	PhD	Permanent
12	Dr. A. E. Zawedde	Assistant Lecturer	PhD	Permanent
13	Dr. G. Ayugi	Assistant Lecturer	PhD	Permanent
14	Mr. B.F. Twinamasiko	Assistant Lecturer	MSc.	Permanent
15	Mr. J.P. Eneku	Assistant Lecturer	MSc.	Permanent
16	Mr. S. Tusiime	Assistant Lecturer	MSc.	Permanent
17	Mr. A. Okello	Assistant Lecturer	MSc.	Permanent
18	Mr. Sembiito Alex	Assistant Lecturer	MSc.	Contract
<b>Technicians</b>				
19	Mr. Michael Musoke	Ag. Chief Technician		Permanent
20	Ms. Mercline Nayibinga	Principal Technician		Permanent
21	Mr. Ronald Nteziryeme	Senior Technician		Permanent
22	Mr. Michael Okiror	Technical Assistant		Permanent
23	Mr. Moses Kawumba	Lab Assistant		Permanent
<b>Support Staff</b>				
24	Ms. Lydia Bingi Ahimbisibwe	Admin Secretary II		Permanent
25	Mr. Robert Kasozi	Lab Attendant		Permanent
26	Mr. Alamanzani Lwanga	Security Guard		Permanent
27	Ms. Nakiwuge Daisy	Cleaner/Messenger		Permanent
28	Ms. Yowanina Namusisi	Cleaner		Permanent

29	Ms. Irene Namalwa	Cleaner		Permanent
30	Ms. Lydia B. Basingwire	Cleaner		Permanent
31	Ms. Stella Kobusingye	Cleaner		Permanent

## Department of Biochemistry and Sports Science

### Biochemistry Unit

No.	Name	Designation	Education	Status
<b>Academic Staff</b>				
1	Dr. Joseph Kyambadde	Senior Lecturer; Dean School of Biosciences	PhD	Permanent
2	Dr. Joseph Fuuna Hawumba	Senior Lecturer	PhD	Permanent
3	Dr. Agnes Masawi Nandutu	Senior Lecturer	PhD	Permanent
4	Dr. Peter California Vuzi	Senior Lecturer ; (HOD)	PhD	Permanent
5	Dr. Vincent Pius Alibu	Senior Lecturer	PhD	Permanent
6	Dr. Dan Isabirye	Lecturer	PhD	Permanent
7	Dr. Apollo Simon P. Balyeidhusa	Lecturer	PhD	Permanent
8	Dr. Denis Matovu Kasozi	Lecturer	PhD	Permanent
9	Dr. Barbara Nerima	Lecturer	PhD	Contract
10	Dr. Rhona Baingana	Lecturer	PhD	Permanent
11	Dr. Julius Mulindwa	Lecturer	PhD.	Permanent
12	Dr. Joel Isanga	Lecturer	PhD	Permanent
13	Dr. Samuel W.Wamutu	Lecturer	PhD	Permanent
14	Dr. Karlmax Rutaro	Assistant Lecturer	PhD	Permanent
15	Mr. Moses Okol	Assistant Lecturer	MSc.	Permanent
16	Mr. Robert Gumisiriza	Assistant Lecturer	MSc.	Permanent
17	Ms. Hellen Butungi	Assistant Lecturer	MSc.	Permanent
18	Mr. John Omara	Assistant Lecturer	MSc.	Permanent
19	Ms. Claire Aguttu	Assistant Lecturer	MSc.	Permanent
<b>Technicians</b>				
20	Mr. Ambrose Mukisa Kamugisa	Chief Technician		Permanent
21	Mr. Godfrey Mugenyi	Senior Technician		Permanent
22	Mr. Elia Musali	Technical Assistant		Permanent
23	Ms. Prossy Namande	Lab Assistant		Permanent
24	Mr. Francis Ssemujju	Lab Attendant		Permanent
<b>Support Staff</b>				
26	Mr. George Kaleera	Cleaner		Permanent
27	Ms. Beatrice Shillah Khainza	Cleaner		Permanent
28	Ms. Robinah Nakanwagi	Cleaner		Permanent



29	Mr. Kabibi Patrick	Cleaner	Permanent
30	Ms. Margaret Babikinamu	Cleaner	Permanent
31	Ms. Robinah Kyomukama	Sanitary Cleaner	Permanent

## Sports Science Unit

No.	Names	Title	Education	Status
<b>Academic Staff</b>				
1	Dr. Annet Nankwanga	Senior Lecturer	PhD	Permanent
2	Dr. Sandra Birabwa Kasoma	Senior Lecturer	PhD	Permanent
3	Mr. Douglas D. Bamweyana	Assistant Lecturer	MSc.	Permanent
4	Mr. Besweri Wandera	Assistant Lecturer	MSc.	Permanent
5	Ms. Bernadette Nakabazzi	Assistant Lecturer	MSc.	Permanent
6	Ms. Lilian Mugisha	Assistant Lecturer	MSc.	Contract
7	Ms. Winfred Nakazibwe	Assistant Lecturer	MSc.	Contract
8	Mr. Stephen Kidega Oola	Assistant Lecturer	MSc.	Contract

## Department of Zoology, Entomology and Fisheries Sciences

No.	Name	Title	Education	Status
<b>Academic Staff</b>				
1	Dr. Fredrick J. Muyodi	Assoc. Professor (Deputy Principal)	PhD	Permanent
2	Dr. Anne M Akol	Associate Professor	PhD	Permanent
3	Dr. Charles Masembe	Associate Professor	PhD	Permanent
4	Dr. Samuel Mugisha	Senior Lecturer	PhD	Permanent
5	Dr. Eric Sande	Senior Lecturer / HOD	PhD	Permanent
6	Dr. Gladys Namuswe Bwanika	Senior Lecturer	PhD	Permanent
7	Dr. Jackson Efitre	Senior Lecturer	PhD	Permanent
8	Dr. Peter Akoll	Senior Lecturer	PhD	Permanent
9	Dr. John.J. Kisakye	Lecturer	PhD	Permanent
10	Dr. Ronald D. Ssemyalo	Lecturer	PhD	Permanent
11	Dr. Robinson Odongo	Lecturer	PhD	Permanent
12	Dr. Godfrey K. Kubiriza	Lecturer	PhD	Permanent
13	Dr. Moses Chemurot	Lecturer	PhD	Permanent
14	Dr. Rose Nalwanga	Lecturer	PhD	Permanent
15	Dr. Perpetra Akite	Lecturer	PhD	Permanent
16	Dr. Juliet Nattabi Kigongo	Assistant Lecturer	PhD	Permanent
17	Mr. Drake Ssempijja	Assistant Lecturer	MSc.	Contract
18	Mr. Bernard Matovu	Assistant Lecturer	MSc.	Contract

19	Dr. Robert Kityo	Museum Curator	PhD	Permanent
Technicians				
20	Ms. Noeline Ndagire	Chief Technician		Permanent
21	Mr. Eustace Niyonzima	Principal Technician		Permanent
22	Ms. Virginia Namagala	Senior Technician		Permanent
23	Mr. Alex Walyeyo	Technician		Permanent
Support Staff				
24	Ms. Geraldine Bwete	Stenographer		Permanent
25	Mr. David Ssedyabane Nsubuga	Lab Assistant		Permanent
26	Mr. Joshua Mucunguzi	Lab Assistant		Permanent
27	Ms. Deborah Nampiima	Lab Assistant		Permanent
28	Ms. Gertrude Babirye Namuli	Cleaner		Permanent
29	Ms. Juliet Nabatanzi	Cleaner		Permanent
30	Ms. Mercy Atwijukye	Cleaner		Permanent
31	Mr. Adam Kintu	Cleaner		Permanent
32	Ms. Asumpta Katusiime	Cleaner/Messenger		Permanent
33	Ms. Mary Nakayiza	Sanitary Cleaner		Permanent

### Department of Plant Sciences, Microbiology and Biotechnology

No.	Name	Title	Education	Status
Academic Staff				
1	Dr. Esezah Kakudidi	Professor	PhD	Contract
2	Dr. Arthur K. Tugume	Assoc. Professor (HoD)	PhD	Permanent
3	Dr. Patrick Mucunguzi	Assoc. Professor	PhD	Permanent
4	Dr. James Kalema	Assoc. Professor	PhD	Permanent
5	Dr. Perpetua Ipuet	Senior Lecturer	PhD	Permanent
6	Dr. Esther Katuura	Senior Lecturer	PhD	Permanent
7	Dr. Clement Nyakoojo	Lecturer	PhD	Permanent
8	Dr. Esther Nakamatte	Lecturer	PhD	Permanent
9	Dr. Anthony M. Nsubuga	Lecturer	PhD	Permanent
10	Dr. Dorothy Ndagire	Lecturer	PhD	Permanent
11	Dr. Collins. E. Bulafu	Lecturer	PhD	Permanent
12	Dr. Jamilu Ssenku	Lecturer	PhD	Permanent
13	Dr. Patience Tugume	Lecturer	PhD	Permanent
14	Dr. Alice Nabatanzi	Lecturer	PhD	Permanent
15	Dr. Savina Asiimwe	Lecturer	PhD	Permanent
16	Dr. Paula Iragaba	Lecturer	PhD	Contract
17	Dr. Reuben Sali	Lecturer	PhD	Contract
18	Mr. Allan Ochieng	Assistant Lecturer	MSc	Permanent

19	Mr. Cyprian Osinde	Assistant Lecturer	MSc	Permanent
20	Ms. Margaret Atim	Assistant Lecturer	MSc	Permanent
21	Ms. Teddy M. A. Tindyebwa	Assistant Lecturer	MSc	Permanent
22	Mr. Sadiq A. Mustafa	Assistant Lecturer	MSc	Permanent
23	Ms. Lydia Nabyonga	Assistant Lecturer	MSc	Permanent
24	Mr. Godwin Anywar	Assistant Lecturer	MSc.	Permanent
25	Mr. Samuel Ojelel	Assistant Lecturer	MSc.	Permanent
<b>Curators</b>				
	Dr. Mary Namaganda	Principal Assistant Curator	PhD	Permanent
	Dr. Paul Ssegawa	Herbarium Curator	PhD	Permanent
<b>Technicians</b>				
	Mr. Moses Zziwa	Principal Technician		Permanent
	Mr. David Muhereza	Senior Technician		Permanent
	Mr. Christian Abba	Technical Assistant		Permanent
<b>Support Staff</b>				
	Ms. Grace Wandera	Copy Typist		Permanent
	Mr. Steven Opeesa Ochepa	Lab Attendant		Permanent
	Mr. Richard Mfitnukiza	Cleaner		Permanent
	Mr. Robert Kirugge	Groundsman		Permanent
	Mr. Stanley Ofwono	Lab Assistant		Permanent
	Mr. Ssekandi Fred	Groundsman		Permanent

## Staff Principal's Office

No.	Name	Designation
Administrative Staff		
1	Ms. Hellen Ssali Kalema	College Registrar
2	Ms. Anne Kabuya Lubuya	Asst. College Registrar
3	Mr. Albert Baine	Asst. College Registrar
4	Mr. Deo Ibanda	College Procurement Officer ( <i>also serves CEDAT</i> )
5	Ms. Sarah Nakayima	College Librarian
6	Ms. Zaam Namuli Ssali	College Communication Officer
7	Ms. Mariam Kasemiire	College Web Administrator
8	Mr. Andrew Bruno Malagala	College Bursar
9	Mr. Godfrey Makubuya Kigongo	College Human Resource Officer
10	Ms. Loyce Amoding	Administrative Secretary
11	Mr. Moses Kasagga	Computer Technician
12	Ms. Samalie Nampewo Sekitte	Administrative Assistant/Sec. Dean Biosciences
13	Ms. Emily Namatovu	Secretary/Dep. Principal



14	Ms. Juliet Zzaake	Secretary/ Dean SPS
15	Ms. Miriam Ndimala	Accounts Clerk
<b>Support Staff</b>		
16	Ms. Kemigisha B.M.	Library Assistant
17	Mr. James M. Sserwada	Workshop Assistant
18	Mr. Phillip Kagoro Mujwisa	Driver
19	Mr. Joseph Sennyonga	Messenger
20	Mr. Timothy Katuramu	Clerical Officer
21	Mr. Charles Kiyingi	Machine Operator
22	Mr. Charles Munyamasoko	Cleaner
23	Ms. Allen Ssanyu Nalyazi	Cleaner
24	Ms. Margaret Namwase	Cleaner
25	Ms. Ruth Nakaggwa	Sanitary Cleaner
26	Ms. Robinah Namutebi	Sanitary Cleaner
27	Ms. Annet Nakintu	Sanitary Cleaner
28	Ms. Jane Namande	Cleaner
29	Ms. Birungi Josephine	Messenger/ Cleaner (Deputy Principal)
30	Mr. Steven Mugisa	Cleaner
31	Ms. Regina Nakabuye	Cleaner
32	Ms. Edisa Nandego	Cleaner
33	Mr. Mugisa Robert Tito	Lab Assistant

## CoNAS Strategic Goals 2020 - 2030

**Goal 1:** To increase the capacity of the College to train scientists for the country, the region and beyond.

**Goal 2:** To increase the number of demand driven high quality science programmes.

**Goal 3:** To strengthen demand driven scientific research and make the college more relevant to national development.

**Goal 4:** To improve the operational efficiency of the College.

**Goal 5:** To create a conducive academic environment for students and staff.

**Goal 6 -** To maintain high academic standards that are recognized internationally.







• **CoNAS General Contact**  
• College of Natural Sciences  
• Makerere University  
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• Kampala, Uganda  
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