

**MAKERERE**



**UNIVERSITY**

# **COLLEGE OF NATURAL SCIENCES**

**ANNUAL REPORT 2019**





### **Makerere University Vision**

To be a leading institution for academic excellence and innovations in Africa

### **Makerere University Core Values**

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

1. Allegiance to the institution
2. Integrity
3. Customer responsiveness
4. Professionalism
5. Openness to diversity

### **CoNAS Mission**

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

## Message from the Principal



I have the pleasure to present to you our Annual Report for the year 2019. It was a busy year for the College and a number of milestones were realized.

I would like to take this opportunity to thank the College administration (Deputy Principal, Deans and administrative staff) 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.

During 2019, the College hosted visitors with whom we partner to further our teaching, learning and research. A delegation from the China University of Petroleum (UPC) visited in January. Makerere University signed a Memorandum of Understanding with UPC in 2017 to leverage expertise their expertise to establish an Institute of Petroleum Geosciences and Engineering in Uganda to be hosted by CoNAS. Four academic staff have travelled to UPC to undertake PhD studies. Specialists from Okayama University, Japan; University of Manchester, UK; International Science Programme, Sweden visited to deliver public lectures/seminars organised by our College. The College of Natural Sciences co-hosted the World Science Day 2019 with the Ministry of Science, Technology and Innovations. It is our pride to leverage on these partners for further development of our knowledge, visibility and international engagement.

I am delighted to report that CoNAS realised major milestones in terms of research funding. The College won grants from the Makerere University Research and Innovations Fund supported by the Government of Uganda. The proposals awarded funding are aligned to the Uganda Vision 2040 and thus directly contribute to national development. In addition, a collaborative consortium of researchers led by Makerere University (Department of Zoology, Entomology and Fisheries Sciences (ZEFs), College of Natural Sciences (CoNAS) won a four-year CAD 2.7 million (7.6 b UGX) competitive research grant to implement “*Harnessing Dietary Nutrients of under-utilised fish and fish-based products in Uganda (NutriFish)*” project. NutriFish was launched in June 2019 and will work to increase availability, accessibility and consumption of under-utilized small fishes and processing by-products for sustainable food and nutrition security. Further a new grant of USD275,000 from the JRS Biodiversity Foundation was awarded to Department of Zoology, Entomology and Fisheries Sciences (ZEFs), College of Natural Sciences (CoNAS) to generate and make publicly accessible information on pollination carried out by bees in central Uganda. This project aims to increase the quantity, quality, and accessibility of data on bee pollinators in Uganda.

The College has continued to deliver on its mission of ‘*of creating and imparting knowledge in basic and applied sciences*’ endeavouring to produce graduates for various sectors of scientific and economic development of Uganda. The College continued to offer services to other Colleges by teaching branches of basic science relevant to their disciplines. From research work by staff and students, the college has registered research publications. As required by the National Council for Higher Education (NCHE) and University Senate, the College of Natural Sciences reviewed all its programmes (Bachelors, Masters and

PhD). The programmes were reviewed in consultation with stakeholders including potential employers of our graduates. The programmes were also aligned to current global trends to ensure that our students are able to fit in with requirements of job market whether in Uganda or globally.

Enhancing capacity building for our members of staff was realized through attainment of new qualifications at PhD level. Staff were able to attend workshops and seminars both at national and international level. I am happy to report that the College hosted various events to showcase research and innovations by our staff and students. The events play a major role in terms of public engagements, knowledge sharing, contribution to national development and confidence building for the students. The college realised a number of new recruitments to replace retiring staff and also fill gaps where staff had either resigned or died.

We look forward to hosting visitors from all-over the world that will meet in Uganda for the GARA-2020. The 5<sup>th</sup> Global African Swine Fever Scientific Conference (GARA-2020) will be held in Kampala, Uganda (April 14-16, 2020) under the theme ‘Advancing African Swine Fever Research by bridging the gaps with scientific information and tools’. **Makerere University** and the **Ministry of Agriculture, Animal Industry and Fisheries (MAAIF)** will co-host the meeting. The Global African Swine Fever Research Alliance brings together stakeholders from across the world with a mission: To establish and sustain global research partnerships that will generate scientific knowledge and tools to contribute to the successful prevention, control and where feasible eradication of African Swine Fever (ASF); and vision of a coordinated global research alliance enabling the progressive control and eradication of ASF.

Eight (8) staff retired after a long and dedicated service to CoNAS and Makerere University; I take this opportunity to recognise Prof. Hannington Oryem-Origa, Assoc. Professor Florence Mutonyi D’ujanga, Assoc. Professor Erasmus Barifaijo, Dr. Vianney Tiberindwa, Dr. Akisophel Kisolo, Mr. Michael Nganda, Mr. Stevens Lutwama and Ms. Florence Mulinda for the long and dedicated service. We also registered four (4) resignations and one (1) death of Ms. Ritah Nabacwa (R.I.P) who was a Senior Technician in the Department of Biochemistry and Sports Science. More staff are set to retire in early, 2020 and we have requested University Management to urgently advertise the vacant positions for smooth running of the college.

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. I extend my sincerest appreciation to the Deputy principal, Deans, Chairs of Department and all staff for your hard work through the year that has brought us thus far. I look forward to working with you in 2020.

As We Build for the Future



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 J.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**

David Ssevviiri, 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**

Perpetua Ipulet, 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. G. Ibanda

**College Communication Officer**

Ms. Zaam N.K. Ssali

E-mail: [pr@cns.mak.ac.ug](mailto:pr@cns.mak.ac.ug)

**CoNAS General Contact**

College of Natural Sciences

Makerere University

P.O. Box 7062

Kampala, Uganda

Tel: +256 414 532401

Website: [www.cns.mak.ac.ug](http://www.cns.mak.ac.ug)

**Schools:** School of Physical Sciences *Website:* <http://sps.mak.ac.ug>

School of Biosciences *Website:* <http://sbis.mak.ac.ug>



# Table of Contents

1	TEACHING AND LEARNING.....	3
1.1	PROGRAMMES.....	3
2	RESEARCH, INNOVATIONS AND PARTNERSHIPS.....	10
2.1	Projects.....	10
2.1.1	Projects funded under the Makerere University Research and Innovations Fund (RIF) ....	17
2.2	EVENTS THROUGH THE YEAR 2019 .....	18
2.2.1	Conferences.....	30
2.3	AWARDS.....	35
2.4	INNOVATIONS .....	37
2.5	PUBLICATIONS 2019 .....	38
3	SUPPORT SERVICES.....	43
3.1	Human Resource: Promotions and Appointments of CoNAS 2019 .....	43
3.2	Communication and Grants Office .....	43
3.3	Library services .....	44
4	INTRODUCTION.....	47
4.1	STRUCTURE OF THE COLLEGE .....	47
4.2	DEPARTMENTS IN THE COLLEGE OF NATURAL SCIENCES .....	48
4.3	ADMINISTRATIVE UNITS.....	52
4.4	UNITS SERVICED BY CoNAS .....	53
4.5	PHYSICAL INFRASTRUCTURE.....	53
4.6	SPECIALISED FACILITIES AND EQUIPMENT.....	54
	APPENDIX: STAFF LIST FOR 2019 .....	56

## List of Tables

Table 1: Registered Undergraduate Students in 2019 Aggregated by Gender .....	5
Table 2: Registered Graduate Students in 2019.....	6
Table 3: Total number of Graduands in 2019 compared with 2018.....	6
Table 4: Academic Staff numbers on ground in 2019 .....	7
Table 5: CoNAS Academic Staff qualifications by gender .....	8
Table 6: Running Projects.....	10
Table 7: Staff Changes in the College during 2019.....	43

## **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

NORAD – Norwegian Agency for Development Cooperation

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





# TEACHING AND LEARNING



# 1 TEACHING AND LEARNING

The College of Natural Sciences offers courses in basic and some aspects of Applied Sciences. Additionally, we have courses in Biochemistry for students from the College of Health Sciences and School of Veterinary Medicine. We also teach students from the College of Education and External Studies, College of Computing and Information Science and School of Statistics and Applied Economics a number of courses in Chemistry, Mathematics, and Physics.

In addition to the theoretical classes by our students, courses offered at the College are supplemented by laboratory based learning for practicals and e-learning. The department of biology also conducts field-based teaching to supplement the work in laboratories. This offers the students an appreciation of the work handled in class. Field attachments to ensure hands-on experience for the students has been introduced.

The College has a herbarium and museum that staff and students use for curation (preserving and preparing of materials). Work in the herbarium is conducted physically and electronically, since the facility was recently digitized. A botanical garden is also maintained for practical work. In addition, an aquarium with live fish is available for practical classes for the zoology and aquaculture students.

It should be noted that for purposes of furthering knowledge, research projects jointly handled by staff and students are conducted in all departments at graduate (Masters and PhD) level.

## 1.1 PROGRAMMES

CoNAS offers programmes at undergraduate and graduate levels i.e Bachelors, Masters and PhD. The programmes at present are:

### School of Biosciences

1. Bachelor of Science (Major or Minor in Biological Sciences – Zoology, Botany, Biochemistry) – 3years
2. Bachelor of Science in Fisheries and Aquaculture – 3years
3. Bachelor of Science in Biotechnology – 3years
4. Bachelor of Science in Sports Science – 3years
5. Master of Science in Botany – 2years

#### Specialisations

- a) Natural Resources Ecology and Conservation
- b) Plant Physiology
- c) Plant taxonomy and biosystematics
- d) Molecular biology and Genetics
- e) Microbiology and Plant Pathology

6. Master of Science in Zoology – 2years

Specialisations

- a) Parasitology
- b) Entomology
- c) Fisheries and Aquaculture
- d) Wildlife Ecology and Conservation

7. Master of Science in Biochemistry – 2years

Specialisations

- a) Nutrition Biochemistry
- b) Medical Biochemistry
- c) Environmental and Industrial Biochemistry

8. PhD in Botany – 3years

9. PhD in Zoology – 3years

10. PhD in Biochemistry – 3years

**School of Physical Sciences**

- 1. Bachelor of Science (Major or Minor in Physical Sciences – Mathematics, Physics, Geology, Chemistry) - 3years
- 2. Bachelor of Science in Industrial Chemistry – 3years
- 3. Bachelor of Science in Petroleum Geosciences and Production – 4years
- 4. Master of Science in Physics – 2years
- 5. Master of Science in Chemistry – 2years
- 6. Master of Science in Petroleum Geosciences – 2years
- 7. Master of Science in Geology – 2years
- 8. Master of Science in Mathematics – 2years
- 9. Master of Science in Mathematical Modelling – 2years
- 10. PhD in Mathematics (thesis) – 3years
- 11. PhD in Mathematics (Coursework and dissertation) - 4 years
- 12. PhD in Physics – 3years
- 13. PhD in Chemistry – 3years
- 14. PhD in Geology – 3years

The student enrolment for the year 2019 was as follows:

**Table 1: Registered Undergraduate Students in 2019 Aggregated by Gender**

Programme	Gender/ Total	Year I	Year II	Year III	Year IV	Grand Total
BSCI.	F	26	36	40	n/a	102
	M	73	68	88	n/a	229
	<b>Total</b>	<b>99</b>	<b>104</b>	<b>128</b>	n/a	<b>331</b>
BSIC	F	13	22	11	n/a	46
	M	35	42	37	n/a	114
	<b>Total</b>	<b>48</b>	<b>64</b>	<b>48</b>	n/a	<b>160</b>
BSFA	F	7	8	4	n/a	19
	M	35	32	21	n/a	88
	<b>Total</b>	<b>42</b>	<b>40</b>	<b>25</b>	n/a	<b>107</b>
BETB	F	-	-	2	n/a	2
	M	-	-	2	n/a	2
	<b>Total</b>	<b>-</b>	<b>-</b>	<b>4</b>	n/a	<b>4</b>
BSPC	F	1	1	2	n/a	4
	M	6	8	9	n/a	23
	<b>Total</b>	<b>7</b>	<b>9</b>	<b>11</b>	n/a	<b>27</b>
BSCB	F	2	6	0	n/a	8
	M	10	17	15	n/a	42
	<b>Total</b>	<b>12</b>	<b>23</b>	<b>15</b>	n/a	<b>50</b>
BBPG	F	4	16	9	4	33
	M	32	27	31	24	114
	<b>Total</b>	<b>36</b>	<b>43</b>	<b>40</b>	<b>28</b>	<b>147</b>
BSBT	F	12	10	13	n/a	35
	M	26	19	22	n/a	76
	<b>Total</b>	<b>38</b>	<b>29</b>	<b>35</b>	n/a	<b>102</b>
<b>Total</b>		<b>282</b>	<b>312</b>	<b>306</b>	<b>28</b>	<b>928</b>



**Table 2: Registered Graduate Students in 2019**

Department	M.Sc.	PhD	Total
Biochemistry and Sports Science	2	-	2
Chemistry	6	-	6
Geology and Petroleum Studies	24	-	24
Mathematics	2	10	12
Physics	-	6	6
Plant Sciences, Microbiology	2	2	4
Zoology, Entomology and Fisheries Sciences	3	7	10
<b>Total</b>	<b>39</b>	<b>25</b>	<b>64</b>

**Table 3: Total number of Graduands in 2019 compared with 2018**

Programme	Gender		Graduates 2019	Graduates 2018
	M	F	Total	Total
BSCI	82	41	123	128
BSIC	22	12	34	41
BSFA	15	3	18	24
BETB	3	2	5	5
BSPC	9	2	11	8
BSCB	15	-	15	9
BBT	21	13	34	28
BBPG	22	4	26	49
MSc. Zoology	6	1	7	9
MSc. Petroleum Geosciences	1	4	5	1
MSc. Chemistry	3	2	5	14
MSc. Biochemistry	1	1	2	2
MSc. Physics	4	2	6	3
MSc. Mathematical Modelling	2	-	2	4
MSc. Mathematics	5	1	6	1
MSc. Botany	-	-	-	1
PhD in Zoology	1	1	2	1

PhD in Mathematics	1		1	1
PhD in Chemistry		1	1	-
PhD in Physics	-	-	-	1
<b>Total</b>	<b>213</b>	<b>122</b>	<b>303</b>	<b>330</b>

### **Staff by Rank:**

The College of Natural Sciences has a total of 157 academic staff; 6 of them are Professors, 16 are Associate Professors, 27 are Senior Lecturers, 55 are Lecturers and 50 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 2019**

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		1	3	4	8	2	1	19
Plant Sciences, Microbiology & Biotechnology		2	4	2	10	8	2	28
Physics		0	2	4	6	7	0	19
Mathematics		1	2	3	12	8	0	26
Chemistry		2	3	3	7	9	0	24
Geology and Petroleum Studies		0	2	4	4	4	0	14
<b>Total</b>		<b>6</b>	<b>16</b>	<b>27</b>	<b>55</b>	<b>50</b>	<b>3</b>	<b>157</b>

Key: P = Professor; AP = Associate Professor; SL = Senior Lecturer;

L = Lecturer; AL = Assistant Lecturer; TA = Teaching Assistant

### **Staff by Qualification/Gender:**

The College of Natural Sciences has a 107 staff who have completed their PhDs, of these 80 are male and 27 are female. Staff who have MSc are 50, of these 34 are male and 16 are female. The breakdown is shown in Table 2 below. Therefore, there 114 male academic staff and 43 female academic staff.

**Table 5: CoNAS Academic Staff qualifications by gender**

<b>Department of Plant Sciences, Microbiology and Biotechnology</b>			
PhD	Female	Male	
	10	10	<b>20</b>
MSc	3	5	<b>8</b>
<b>Department of Zoology, Entomology and Fisheries Sciences</b>			
PhD	Female	Male	
	4	13	<b>17</b>
MSc	1	1	<b>2</b>
<b>Department of Physics</b>			
PhD	Female	Male	
	3	11	<b>14</b>
MSc	0	5	<b>5</b>
<b>Department of Geology and Petroleum Studies</b>			
PhD	Female	Male	
	2	7	<b>9</b>
MSc	1	4	<b>5</b>
<b>Department of Chemistry</b>			
PhD	Female	Male	
	2	14	<b>16</b>
MSc	3	5	<b>8</b>
<b>Department of Biochemistry and Sports Science</b>			
PhD	Female	Male	
	4	10	<b>14</b>
MSc	6	7	<b>13</b>
<b>Department of Mathematics</b>			
PhD	Female	Male	
	2	15	<b>17</b>
MSc	1	7	<b>9</b>

**Total PhD = 107 (Male 80; Female 27)**

**Total MSc. = 50 (Male 34; Female 16)**



# RESEARCH, INNOVATIONS AND PARTNERSHIPS

## 2 RESEARCH, INNOVATIONS AND PARTNERSHIPS

In the year 2019, 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.

### 2.1 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 include:

**Table 6: Running Projects**

	<b>Research Contract / Grant</b>	<b>Research contract value</b>	<b>Principal Investigator</b>	<b>Collaborators</b>	<b>Project Duration</b>	<b>Funder</b>
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

	<b>Research Contract / Grant</b>	<b>Research contract value</b>	<b>Principal Investigator</b>	<b>Collaborators</b>	<b>Project Duration</b>	<b>Funder</b>
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

	<b>Research Contract / Grant</b>	<b>Research contract value</b>	<b>Principal Investigator</b>	<b>Collaborators</b>	<b>Project Duration</b>	<b>Funder</b>
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	Bioinnovate Africa Programme
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.	LEPI-POLL Project	\$70,106	Assoc. Professor Anne Akol	Museums of Kenya, National Museum of Tanzania	2017-2019	JRS Biodiversity Foundation



	<b>Research Contract / Grant</b>	<b>Research contract value</b>	<b>Principal Investigator</b>	<b>Collaborators</b>	<b>Project Duration</b>	<b>Funder</b>
9.	Material Science and Solar Energy for East & Southern Africa (MSSEESA)	\$95,853	Prof. Tom Oti	MSSEESA Chapters in Tanzania, Kenya Zambia and Rwanda	2014-2019	International Science Programme
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)



	<b>Research Contract / Grant</b>	<b>Research contract value</b>	<b>Principal Investigator</b>	<b>Collaborators</b>	<b>Project Duration</b>	<b>Funder</b>
14.	Chair for Petroleum Geosciences Programme	\$200,000	Department of Geology and Petroleum Studies	Ministry of Finance, Planning and Economic Development; Ministry of Energy and Mineral Development	2017-2020	The World Bank
15.	Sida Phase IV	(20) PhD students and ten (10) post-docs are being trained	Assoc. Prof. J.M. Mango	Linkoping University, Maladaren University, Royal Institute of Technology, Stockholm University and Uppsala University	2015-2020	Sida
16.	East African Universities Mathematics Programme (EAUMP)	This project supports training of MSc students as well as PhD students. It facilitates organization of summer schools in the region	Assoc. Prof. Juma Kasozi Dr. David Ssevviiri	Universities from Uganda, Kenya, Tanzania, Rwanda and Zambia	2008-2020	ISP/Sida
17.	Engendering Basic Sciences	Mentoring, strengthening and supporting the success of women in basic sciences	Dr. Betty K. Nanyonga			ISP/Sida
18.	Graduate Research Assistantships in Developing Countries (GRAID)	Tuition support for 2 PhD students	Dr. David Ssevviiri		2018-2021	IMU

	<b>Research Contract / Grant</b>	<b>Research contract value</b>	<b>Principal Investigator</b>	<b>Collaborators</b>	<b>Project Duration</b>	<b>Funder</b>
19.	Makerere University/Uganda Virus Research Institute Training Programme in Infection and Immunity (MUII)	Set-up a Hi-tech Bioinformatics Laboratory	Prof. JYT Mugisha	Uganda Virus Research Institute, CoVAB, CHS, University of Cambridge, UK		Wellcome Trust
20.	Access to Benefit Sharing-Sustainable Use of Biodiversity (absbio)		Prof. Ezeza Kakudidi, Dr. Patience Tugume, Mr. Godwin Anywar	Leipzig University, Makerere University and IRGIB Africa University in Benin	2019-2022	DAAD
21.	The geology of Western Rift xenoliths within the volcanics		Ms. Peggy Kulyanyingi	University of Towson and Pennsylvania State University, USA		
22.	Building capacity & research in Renewable Energy (CAPACITY 5)		Dr. Karidewa Nyeinga		2015 - 2020	NoRAD/EnPE
23.	Capacity Building in Sustainability and Environmental Management (CapSEM)		Dr. Karidewa Nyeinga		2016 - 2019	EU
24.	Domesticating Stingless Bees in Uganda		Dr. Moses Chemurot		2018-2020	NARO

	<b>Research Contract / Grant</b>	<b>Research contract value</b>	<b>Principal Investigator</b>	<b>Collaborators</b>	<b>Project Duration</b>	<b>Funder</b>
25.	Persistent Organic Pollutants in Breast Milk, Blood and Placental Tissues for Mothers Living in the Urban and Rural Areas of Uganda	\$45,000	Dr. Peter Ssebugere		2017-2019	Carnegie Cooperation of New York
26.	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
27	Establishing a Research Support (Grants) Office at the College of Natural Sciences, Makerere University	It will offer grant pre-award services to faculty in order to improve on chances for winning more sponsored research grants to the college and also build capacity of researchers	Fredrick J Muyodi		2019 - 2020	Carnegie Corporation of New York and IREX
28	Improved Agricultural Messaging to Prevent Losses due to Banana Xanthomonas Wilt (BXW) in Uganda and Tanzania		Fredrick J Muyodi	Makerere university, Michigan State University, USA and University of Dar es Salaam, Tanzania.	2019 - 2020	Alliance for African Partnerships (AAP), Michigan State University, USA.

### **2.1.1 Projects funded under the Makerere University Research and Innovations Fund (RIF)**

The College submitted over 60 research proposals in September 2019 for funding by the Makerere University Research and Innovation Fund. After evaluations the following projects were successfully awarded for implementation:

- 1) An assessment to identify research and training laboratory equipment for petroleum geosciences and engineering for Higher Education Institutions in Uganda, Principal Investigator Prof. Joseph Y.T. Mugisha;
- 2) Integrated Remediation of Mercury Contaminated Soils in Artisanal and Small-scale Gold Mining Areas of Uganda, Principal Investigator Dr. Emmanuel Tebandeke
- 3) Presenting New Approaches to the Teaching and Learning of Mathematics, Principal Investigator Dr. Ssevviiri David
- 4) Development of Bacterial systems for production of Industrial Enzymes: Proteases and Levansucrases, Principal Investigator Dr. Apollo S.P. Balyeidusa
- 5) Improving Makerere University Staff Health and Well-being through Streamlined Physical Activity Programmes, Principal Investigator Dr. Annet Nankwanga
- 6) Optimisation of Radiation Dose in Paediatric Computed Tomography (CT). A Study to Establish National Diagnostic Reference Levels (NDRLs) for Paediatric CT in Uganda, Principal Investigator Dr Gertrude Ayugi
- 7) Utilising the Potential of ornamental fish species for training and smallholder business income generation development in Uganda Principal Investigator Dr. Juliet Kigongo Natabi
- 8) Harnessing the nutrient composition of poultry slaughterhouse by-products for fish feed production in Uganda –(PoshFeed), Principal Investigator Dr. Godfrey Kubiriza
- 9) Documentation, Bioactivity and Phytochemistry of selected Herbal Medicines used by Local Communities in Family Planning Management in Uganda, Principal Investigator Ms. Adia Madina Mohammed
- 10) Developing a microbial-based product for remediation of oil-contaminated soils, Principal Investigator Prof. Hannington Oryem Origa
- 11) Enthusiasing Society through Star Gazing and Telescope Observations to Unveil Cultural Astronomy in Uganda, Principal Investigator Dr. Bosco Oruru
- 12) Practicals to the Home for the Rural Student (PTTH-RS) Principal Investigator: Taddeo Ssenyonga
- 13) Upscaling mushroom seed (spawn) production in Uganda Principal Investigator: Perpetua Ipulet (PhD)

## 2.2 EVENTS THROUGH THE YEAR 2019

Staff and students of the College participate, attend and host events including conferences as a means to share information, knowledge transfer, and networking. The events and conferences through 2019 included thus.

### **The Makerere University Council Chairperson visit to CoNAS**

The Makerere University Council Chairperson, Mrs. Lorna Magara visited the College of Natural Sciences (CoNAS) on 12th September 2019. She toured the college and held a meeting with college administration including Principal, Deputy Principal, Deans, Heads of Department (HoDs), and heads of administrative units.



**The Chairperson, Makerere University Council – Mrs. Lorna Magara (4<sup>th</sup> from right) with the CoNAS Leadership**

This was a continuation of a familiarisation tour by the new council that took office in December 2018; CoNAS was the seventh college visited of the ten that constitute Makerere University.

### **NutriFish Project Launched**

The **Harnessing dietary nutrients of under-utilised fish and fish-based products in Uganda (NutriFish)** project was launched on the 27th of June 2019 by Prof. Bernard Bashaasha (Principal – College of Agricultural and Environmental Sciences) who represented Prof. Barnabas Nawangwe, Vice Chancellor of Makerere University. NutriFish is a three-year CAD2.7million (UGX7.6bn) project and will be implemented by a collaborative consortium of researchers led by Makerere University (Department of Zoology, Entomology and Fisheries Sciences (ZEFs), College of Natural Sciences (CoNAS) in partnership with the National Fisheries Resources Research Institute (NaFIRRI) of the National Agricultural Research Organization (NARO); NUTREAL Uganda Limited; and McGill University, Canada.



**Prof. Bernard Bashaasha, CultuAF2 officials and project team launching the NutriFish Project**

The project is co-funded by the 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 (CultuAF2). The Principal Investigator of NutriFish is Dr. Jackson Efitre, Senior Lecturer at ZEFs. NutriFish aims to address the nutritional needs of the Ugandan population particularly the vulnerable groups who need high-quality nutritious diets but cannot afford expensive nutrient-rich foods.

### **Curriculum Review of Programmes**

As required by the National Council for Higher Education (NCHE) and University Senate, the College of Natural Sciences reviewed all its programmes (Bachelors, Masters and PhD). The programmes were reviewed in consultation with stakeholders including potential employers of our graduates.





**Prof. Joseph Mugisha, Principal College of Natural Sciences opening the Curriculum Review Meeting**

The programmes were also aligned to current global trends to ensure that our students are able to fit in with requirements of job market whether in Uganda or globally.

### **19<sup>th</sup> EAUMP Mathematics Summer School**

The 19<sup>th</sup> Summer School of the East African Universities Mathematics Programme (EAUMP) was held from the 15<sup>th</sup> to 30<sup>th</sup> July 2019 and officially opened by the Deputy Vice Chancellor – Academic Affairs, Prof. Umar Kakumba. The summer school hosted by the Department of Mathematics attracted participants from Uganda, Kenya, Rwanda, Tanzania, Zambia, Nigeria, Egypt, Sudan, Botswana, France and United Kingdom.



**Participants at the 19<sup>th</sup> EAUMP Mathematics Summer School**

The funders of the summer school include Makerere University; Uppsala University, Sweden; International Science Programme (ISP); SIDA; London Mathematical Society and Centre International de Mathématiques Pures et Appliquées (CIMPA).

### **Diversity of Lepidoptera Pollinators in Mabira Central Forest Reserve in Mukono/Buikwe Districts**

A project that aimed at assessing the **Diversity of Lepidoptera Pollinators in Mabira Central Forest Reserve in Mukono/Buikwe Districts** was concluded in December 2019. The project started in Jan 2017 supported by a grant from the JRS Biodiversity Foundation through the National Museums of Kenya. The forest provides a home for over 140 species of butterflies and moths that provide pollination services to crops being cultivated in and around the forest and the wild plant communities of the forest which are used by both people and wildlife. The list of these species has been published to the GBIF network ([www.gbif.org](http://www.gbif.org)) from where they can be viewed.

### **Viral Bioinformatics and Genomics Training #ViroGen19**

A hands-on training course in Viral Bioinformatics and Genomics attended by participants from 13 countries across Africa was held at the Infectious Diseases Institute, Makerere University, Campus, Kampala from the 23<sup>rd</sup> – 28<sup>th</sup> June 2019. The course was organized by the College of Natural Sciences (CoNAS led by Charles Masembe), Makerere University in collaboration with MRC-University of Glasgow Centre for Virus Research (led by Sreenu Vattipally), and supported by the Wellcome Trust and African Union Commission. The course



provided a working knowledge of viral genome sequence analysis and interpretation of genomics data generated from large scale sequencing platforms; and establishment of networks for development of future collaborative projects. The countries represented at the training included: Uganda, Kenya, Nigeria, Republic of South Africa, Tanzania, Senegal, Cameroon, Gabon, Ivory Coast, Egypt, Democratic Republic of Congo, Zambia and Botswana. The instructors and speakers at the course were drawn from Uganda, United Kingdom, Kenya and Tanzania.

### **Makerere University hosts a delegation from China University of Petroleum**

On 7th January 2019, the Vice Chancellor of Makerere University, Prof. Barnabas Nawangwe hosted a delegation from China University of Petroleum (UPC). This meeting follows the previous visits between Makerere University and UPC at which a Memorandum of Understanding (MOU) was signed in 2017 between the two institutions aimed at leveraging expertise at UPC to establish an Institute of Petroleum Geosciences/Engineering at Makerere University. The delegation was led by the Vice Chancellor, China University of Petroleum, Prof. Yao Jun, accompanied by the Director International Affairs, China University of Petroleum, prof. Huang Fang, Deputy Dean School of Geosciences, Prof. Pei Yangwen, Deputy Dean School of Petroleum Engineering, Prof. Yang Shaochun, Department of Petroleum Geology of School of Geosciences, and Prof. Sun Renyuan, Department of Reservoir Engineering, School of Petroleum Engineering.



### **The Delegation from China University of Petroleum in a meeting with the Vice Chancellor**

The meeting was also attended by the Principal of College of Natural Sciences (CoNAS), Prof. J.Y.T Mugisha, the Principal of College of Engineering, Design Art and Technology, the Principal of College of Business and Management Sciences (CoBAMS), Assoc. Prof. Eria Hisali, The Deputy Vice Chancellor Academic Affairs, Assoc. Prof. Umaru Kakumba, Makerere University management members, staff from CoNAS, Makerere

University Public Relations team and officials from Sunmaker Energy Uganda Limited led by the Principal, Mr. Ma Bo and Deputy Principal, Duan Xiaofei.

### **AU Team Monitoring Visit of ASF-RESIST Action at CoNAS**

A team from the African Union (AU) led by Dr. Monica Ebele Idinoba accompanied by Ms. Khadidiatou Meissa Gaye visited the ASF-RESIST action from the 23rd April to 26th April 2019 at the College of Natural Sciences (CoNAS) to review progress of the action since its inception in 2018. The African Union supported by the European Union awarded a research grant of USD 1,249,988 to a consortium of scientists led by the College of Natural Sciences (CoNAS), Makerere University to implement a research action aimed at ‘Developing innovative and sustainable approaches to prevent the spread of African Swine Fever (ASF) in Africa (ASF-RESIST)’.



**ASF-RESIST team with evaluation team from AU**

The Principal Investigator (PI) of ASF-RESIST is Dr. Charles Masembe, an Associate Professor in the Department of Zoology, Entomology and Fisheries Sciences (ZEFS).

### **Old Space Vs New Space Seminar hosted by Department of Physics**

The Department of Physics hosted Mr. Maeda George from Japan on 24/06/2019 who gave a presentation on Space Science giving an account of old space vs new space. The peak of Old Space occurred in 1969 when the United States of America put a man on the surface of the Moon and return him safely to Earth. This year, 2019, is the 50th anniversary of that event. But what happened after the success of NASA's Apollo program? As many of you know, the public lost interest in space, and humanity's activities in space went into deep freeze for a long time. I am profoundly aware of that space "ice age" because I lived through it; I was born in 1959.



**Mr. Maeda George with staff and students from the Department of Physics**

However, a robust recovery is finally underway, since about 2005. This recovery is called by many as New Space. And it is very different from Old Space. I will discuss this revolutionary paradigm shift. And this shift is important to all of humanity. Because of New Space, all countries, including the country of Uganda, can participate in space. In a nutshell, New Space has vastly lowered the barriers to getting involved in space. Therefore, I hope your country will passionately embrace this golden opportunity to explore and to exploit outer space for your own national needs.

### **Biochemistry Seminar Series - The Yeast Industrial Machine: Uganda's Share in Africa**

Mr. Moses Musisi presented at seminar hosted by the Department of Biochemistry and Sports Science on the 7<sup>th</sup> November 2019. Mr. Musisi has worked at Nile Breweries Limited as Brewmaster for the last 20 years and was behind several innovations at Nile Breweries.





**Participants listening to Mr. Musisi's presentation**

He is an alumni of Makerere University where he completed a BSc Zoology and Botany. He also holds a MSc Biochemistry (University of Vienna) and Diploma in Brewing (UK).

#### **ISP Research Management Workshop hosted by the Department of Chemistry**

Assoc. Prof. Cecilia ÖMAN, Deputy Programme Director, International Science Programme (ISP) Uppsala University, Sweden was hosted by the Department of Chemistry to facilitate the research management workshop (14<sup>th</sup> – 16<sup>th</sup> October 2019). The purpose of the workshop was to give a training on research management approach based on HR&S tool Real-time outcome evaluation planning (ROPE). Participants included ISP research teams and networks; University senior and mid management, technicians in charge of scientific equipment, library staff, graduate students and other interested stakeholders.



**Dr. Cecilia Oman presenting at the ISP workshop**

### **Pollinators Project Exhibitions and Public Engagement**

The Diversity of Lepidoptera Pollinators in Mabira Central Forest Reserve in Mukono/Buikwe Districts project mounted three pollination exhibitions: at the annual Jinja Agricultural Show (2019), a temporary exhibition (August – November 2019) at the Uganda National Museum and the World Food Day 2019. These exhibitions were mounted to inform the public about the contribution of insect pollinators and pollination to enabling food security and nutrition. In addition, to provide guidance on what each person can do to support pollinator biodiversity. A policy dialogue meeting to discuss pollination, the first of a series of planned engagements with decision makers, was held at the launch of the temporary exhibition on 22 August 2019. The consensus was that pollination was indeed a valuable ecosystem service that Uganda must invest in to promote all agricultural endeavor and ecosystem resilience.

### **Visit and Collaboration from University of Manchester**

Prof. Philip Martin and students from the Manchester University, UK (School of Chemical Engineering and Analytical Sciences) visited the Department of Chemistry from the 24<sup>th</sup> June to 15<sup>th</sup> July. Professor Martin delivered a public lecturer while the students undertook laboratory activities, industrial visits and interaction with Makerere University counterparts on design projects. This follows previous visits

in 2018 by Professors Andrew Masters and Xiaolei Fan from Manchester University. The two institutions have an agreement on research and teaching collaborations.

### **ASF-Resist Action Partners Meet in Glasgow, UK**

The ASF-RESIST partners converged at the Centre for Virus Research (CVR), University of Glasgow, UK for the action's second annual review and planning. The meeting held from the 2<sup>nd</sup> – 3<sup>rd</sup> December 2019 was attended by members from Makerere University, National Veterinary Institute of Nigeria, National Veterinary Institute - Sweden, BecA-ILRI Hub – Kenya and CVR. The ASF-RESIST action granted \$1.2m by the African Union and European Union Commission was launched in 2018 and will end in 2021.



**Participants at the ASF-RESIST Glasgow Meeting**

Principal Investigator (PI) - Assoc. Prof. Charles Masembe and Makerere team members attended the meeting. The Principal of CoNAS – Prof. Joseph Y.T. Mugisha and Principal Communication Officer of CoNAS – Zaam Ssali also attended the meeting.

### **World Science Day 2019**

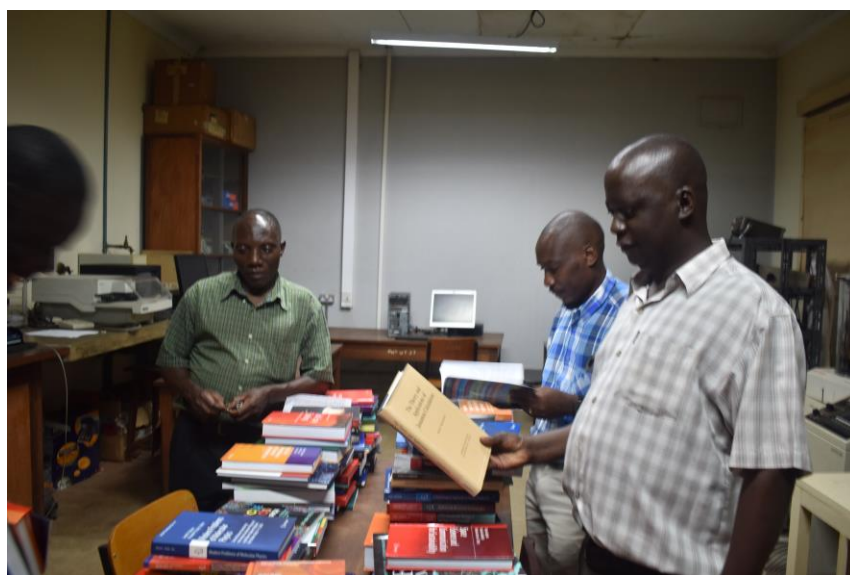
The College of Natural Sciences co-hosted the World Science Day 2019 with the Ministry of Science, Technology and Innovations. The world science celebrations also organised an exhibition of innovations by students as well as recognition of winners of the Biotechnology Awards.



**Hon. Elioda Tumwesigye (3<sup>rd</sup> from left), Minister for Science Technology and Innovations and Prof. Joseph Mugisha (4<sup>th</sup> from left), College of Natural Sciences with organising team at the World Science Day Celebrations for 2019**

### **ISP and AIP Donate Books to Physics Department**

The Department of Physics received reading material (over 100books) from the International Science Programme (ISP) in collaboration with the American Institute of Physics (AIP).





Dr. Denis Okello, a lecturer in the department handed them over to the HoD Assoc. Prof. Tumps Ireeta (photos attached). The Chair Department of Physics – Assoc Professor Ireeta (2<sup>nd</sup> from right) receiving the books from Dr. Denis Okello (1<sup>st</sup> right)

### **Orientation of Undergraduate Fresher Students AY2019/2020 and Graduate Students**

The College of Natural Sciences (CoNAS) leadership met the undergraduate fresher students on the 7<sup>th</sup> August 2019. Every year fresher students are oriented at the College following an orientation at the University level. The students are informed of the university processes; they are also cautioned about what affects studies. Arising from discussions at the College Academic Boarding meeting it was agreed that the orientation for CoNAS graduate students be held at the College level which had not been done in previous academic years. The Graduate students meeting was held on the 5<sup>th</sup> September 2019.



**Fresher students attending the orientation meeting**

### **PhD Public Defenses**

- a) Dr. Nkambo Mujibu successfully defended his thesis for a PhD in Zoology titled **BIO-PHYSICAL SUITABILITY OF SALINE CRATER LAKES OF WESTERN UGANDA FOR ARTEMIA PRODUCTION** on 24<sup>th</sup> October 2019.
- b) Dr. Wokiya Denis successfully defended his thesis for a PhD in Mathematics titled **CAUCHY PROBLEM FOR A NON-LINEAR STATIONARY HEAT EQUATION** on 22<sup>nd</sup> October 2019.



- c) Dr. Nnamuyomba Proscovia successfully presented her thesis for a Phd in Chemistry titled **BIOKINETICS OF POLLUTANT ACCUMULATION IN MARKETED CAT-FISH (CLARIAS WERNERI) AND SILVER FISH (RASTRENEOBOLA ARGENTEA)** on 24<sup>th</sup> October 2019.

### **Half-day Microbio Seminar**

The Department of Plant Sciences, Microbiology and Biotechnology in CoNAS hosted a half-day "Microbio" seminar featuring 3 local experts at Makerere University and a visiting scientist from Okayama university, Japan. Makerere University (through CoNAS and CAES) have an on-going 5-year MoU with Okayama University (through her Institute of Plant Sciences and Resources, IPSR) signed in November 2016. The presentations at the seminar were:

- a) Lanthanide as a new life metal in microbiology. By: Assoc. Prof. Akio Tani, Institute of Plant Sciences and Resources (IPSR), Okayama University.
- b) Transmission dynamics of African swine fever in an endemic setting at the livestock-wildlife interface. By: Assoc. Prof. Charles Masembe, Dept. of Zoology, Entomology and Fisheries Sciences, CoNAS, Makerere University.
- c) Sustaining sweet potato productivity through exploiting reversion from sweet potato virus infections. By: Dr. Peter Wasswa, Dept. Agricultural Production, CAES, Makerere University.
- d) Overcoming Xanthomonas wilt and rehabilitation of banana plantations in East and Central Africa. By: Assoc. Prof. Arthur K. Tugume, Dept. of Plant Sciences, Microbiology and Biotechnology, CoNAS, Makerere University.



**Participants at the Microbio Seminar**

### **2.2.1 Conferences**

- Professor Eseza Kakudidi attended the following conferences:

- Science, Technology and innovations (STI) symposium, by the Ministry of Science, Technology and Innovation, 19 June 2019 at Makerere University.
- Access to Benefit Sharing-Sustainable Use of Biodiversity (absbio)" project kick-off seminar at Leipzig University German 3rd – 5th July 2019
- Dr. Patrick Ssebugere attended the following conferences and workshop:
  - 3rd International Conference on Toxicology and Clinical Toxicology, held November 11 – 12, 2019 in London, United Kingdom. Paper presented (oral): Prenatal exposure levels of polybrominated diphenyl ethers in mother-infant pairs and their transplacental transfer characteristics in Uganda.
  - The 47th World Chemistry Congress of IUPAC, held July 7 – 12, 2019 in Paris, France. Paper presented (poster): Organochlorine pesticides in honey from areas surrounding an abandoned store in Masindi District, western Uganda: a risk assessment of dietary intake.
  - Forensic Chemistry and Toxicology Workshop, held November 5-8, 2019 in Kampala, Uganda. Supported by Makerere University and Cukorova University.
- Dr. Patience Tugume attended the following trainings, workshops and conferences:
  - DIES/CREST online training course for supervisors of doctoral candidates at African Universities-. Organized by CREST- Centre for Research on Evaluation of Science & Technology (University of Stellenbosch) & DIES – Dialogue on Innovative Higher Education Strategies. Funded by DAAD- German Academic Exchange Service and Federal Ministry for Economic Cooperation & Development. October 2018- February 2019.
  - Biodiversity Informatics Training Curriculum on measuring and quantifying ecosystem services and essential biodiversity variables. Funded by JRS Biodiversity Foundation. Co-hosted by University of Oxford & The Centre of Excellence in Biodiversity & Natural Resource Management at University of Rwanda. September 16th -27th 2019. Lemigo Hotel Kigali
  - The 18th Symposium of Natural Products Research Network for Eastern & Central Africa (NAPRECA), Heliopolis University, Cairo, Egypt 7 -9 Dec 2019.
  - DIES/CREST Alumni Networking workshop on Research and Capacity Development in Doctoral Supervision at African Universities at CREST, 5th- 9th November 2019 Stellenbosch University.
  - Symposium at the kick- off event of the project: Access and Benefit sharing- sustainable use of biodiversity (ABSbio) 3rd- 5th July 2019, at Leipzig University, Germany.
- Dr. Moses Chemurot and others attended the following conferences and workshops:
  - Chemurot, M., Wanyingi, J., Mugume, S., Isabirye-Basuta, G., Rutazaana, U., Bakuneeta, C., Karogo, G., Baranga, D., Aine-Omucunguzi, A., Sande, E. and Takeshi, F. 2019-Oral presentation: Is habitat disturbance in Itwara and Matiri forests affecting primate populations? Analysis of

threats. 12th International Symposium on Primatology and Wildlife Science in the Japan Monkey Centre, Inuyama, Japan from 20-22 September 2019.

- Chemurot, M. 2019-Oral presentation. Honeybee pests in Uganda: Distribution, effects and management. The National Apiculture Congress 2019 held at Katikati Restaurant, Kampala Uganda on 28th August 2019.
- Chemurot, M., Wanyingi, J., Mugume, S., Isabirye-Basuta, G., Rutazaana, U., Bakuneeta, C., Karogo, G., Baranga, D., Aine-Omucunguzi, A., Sande, E. and Takeshi, F. 2019-Oral presentation. Livelihood options preferred by communities and threats to Red Colobus in Itwara and Matiri forests, Uganda. African Primatological Society in Entebbe, Uganda from 2-6th September 2019.
- Dr. Nyeinga Karidewa attended the following conferences:
  - CapSEM Sustainability symposium, held on 12-14 September 2019 at MUBS. Project participants were from Norway, Holland, Portugal, India, Nepal and Uganda. Karidewa Nyeinga and John Mary Kiberu (from Department of Geology and Petroleum Studies) led the Makerere team which made four presentations on various topics related to sustainability.
  - Karidewa Nyeinga attended the training on Life Cycle Analysis funded by CapSEM EU, NTNU, Aalesund, Norway, 19 -25 January, 2019.
- Dr. Martin Owor attended the following conferences and workshops:
  - Dr. Michael Owor attended the IAH Congress 22-27 September 2019 in Malaga Spain. He together with others presented a paper titled 'Permeability of the crystalline basement in Uganda - evidence from approximately 600 pumping tests and implications for solar pumping'.
  - Dr. Michael Owor attended the Groundwater Quality Conference in Liege Belgium 9-12 September 2019. He presented a paper, 'Geochemical footprints in the groundwaters of Uganda: a national-scale analysis'.
  - Dr. Michael Owor participate in the UPGro Hidden Crisis Project Meeting and Workshop, 10-13 June 2019, Edinburgh, UK.
  - Dr. Michael Owor participated in the Technical Committee, Uganda Water and Environment Week, Entebbe, 18-22 March 2019.
  - Dr. Michael Owor and Dr. Betty Nagudi participated in the EnPe Secretariat Seminar at NTNU, 25 February - 1 March 2019, Trondheim, Norway.
- Dr. John Mary Kiberu attended the following conferences:
  - Dr. John M. Kiberu and Mr. Ivan Mukiibi attended an exchange program on environmental sustainability with Kathmandu University, Nepal, 21-25 June, 2019.
  - Dr. J. M. Kiberu attended the CapSEM Symposium and Final meeting; Transition to sustainability progress. 11-13 September, 2019, Makerere University Business School, Nakawa, Uganda.

- Dr. John M. Kiberu attended the training on Life Cycle Analysis funded by CapSEM EU, NTNU Aalesund, Norway, 19 -25 January, 2019.
- Dr. Simon Echegu participated in the skills development dialogue for the oil and gas sector organized by the Petroleum Authority of Uganda. The dialogue brings together all institutions involved in training related to oil and gas. The dialogue is currently at the final stages of registering her Constitution under the name Oil and Gas Trainers Association of Uganda (OGTAU). The association will be a unilateral voice for the trainers.
- Ms. Susan T. Kigozi and team attended the following training and workshops:
  - Ms. Susan.T. Kigozi, Mr. Willy Kasule and Mr. Robert Sessanga Robert participated in Capacity Building Training Workshop in the use and maintenance of the DR 6000 spectrophotometer facilitated by Hach Company at Public Health and Environmental Engineering Laboratory, CEDAT Makerere University from 25 February to 1 March 2019.
  - Ms. Susan.T. Kigozi and Mr. Robert Sessanga received training in ISO 17025: 2017 Laboratory Quality Management Systems facilitated by MiChem Dynamics, Pretoria, South Africa from 16 - 20 September 2019.
- Dr. Kevin Aanyu and Dr. Betty Nagudi attended the following workshops:
  - Dr. Kevin Aanyu and Dr. Betty Nagudi attended a training for Members of the Vice Chancellor’s Standing Roster of 100 to Investigate Sexual Harassment, at Royal Suites, Bugolobi, 28 - 29 August 2019.
  - Dr. Kevin Aanyu participated in a Writing Workshop organized by the Sustainable Futures in Africa (SFA) Network, to develop a toolkit to help international, interdisciplinary research teams with the fundamental challenges related to partnerships of the Global North and Global South; 04-08 March 2019, at the University of Glasgow, Scotland.
  - Dr. Betty Nagudi attended “UNATCOM Annual Review 2019” conference on 7th August 2019 at Imperial Royal, Kampala.
- Mr. Lauben Twinomujuni participated in the following projects:
  - Mr Lauben Twinomujuni was consulted as well site geologist – borehole siting, supervision, core analysis for marble evaluation in the Moroto region from February-March 2019.
  - Mr Lauben Twinomujuni participated in an environmental audit for Kabale airport construction project in Hoima addressing geology and oil issues during September 2019.
- Mr. Moses Kasaka and Mr. Willy Kasule attended GBC Scientific Equipment Training on the 13 September 2019.
- Assoc. Professor Winston Ireeta Tumps attended the following Schools, Workshops and Conference:

- Career Accelerator For Optical Communications School, Optical Society of America Foundation from 12th to 16th January 2020 at the National 4-H Conference Center, Maryland, Washington D.C., USA
  - 10th International Conference of the African Materials Research Society (AMRS 2019) from 10th - 13th December 2019 at the Nelson Mandela African Institute of Science and Technology, Arusha, Tanzania.
  - International Summer School in Subsea Optical Fiber Communications from 4th to 10th August 2019 in Joensuu, Finland.
  - Joint Education and Training in Optics and Photonics (ETOP) and Photonics North (PN) 2019 Conferences from 20th to 24th May 2019 at Quebec City Convention Center, Quebec, Canada.
- Dr. Akoll, Dr. Semyalo and Ms. Zaam Ssali attended the CoTRA Intra Africa Mobility meeting attended by all partner institutions at University of Rhodes, South Africa.



**CoTRA Team attending meeting at University of Rhodes, South Africa**

- Assoc. Professor Fredrick Muyodi attended the following conferences:
  - Assoc. Prof. Fredrick J Muyodi was invited by China University of Mining and Technology-Beijing (CUMTB) to participate in the 110th Anniversary and also to attend the Chinese-Foreign University Forum. This was preceded by a number of meetings and presentations with various relevant schools where collaboration with CONAS and Makerere University in general was explored. The theme of the Forum was “University Missions in the Era of Clean Energy”. He made presentations at the forum attended by 500 participants which included university Presidents, Vice Presidents, among others. Dates 8TH – 11th November 2019.

- Assoc. Prof. Fredrick J Muyodi was been invited to participate in the African Research Universities Alliance (ARUA) annual international conference on the theme “Africa and the Fourth Industrial Revolution: Defining a Role for Research Universities” in Nairobi, Kenya in November 2019. He was also invited to participate in associated IREX-led events at the ARUA conference which convene alumni of the University Administration Support Program Research Management Fellowship, of which he is a successful alumnus. Conference dates: 18-20 November 2019.
- Assoc. Prof. Fredrick J Muyodi, as Co-Principal Investigator of Makerere University on the funded exploratory travel grant from Alliance for African Partnership (AAP), was invited to visit Michigan State University (MSU) for a seminar. As part of the funded grant, attended several meetings at the MSU campus reviewing objectives and outcomes of the proposal entitled “Improved Agricultural Messaging to Prevent Losses due to Banana Xanthomonas Wilt (BXW) in Uganda and Tanzania. We will work together to draft our long and short-term Strategic Plan of Action and determine the activities that will take place in Tanzania and Uganda in February. Dates: November 2-14, 2019.
- Assoc. Professor Juma Kasozi attended the following workshops:
  - Workshop on PhD students’ supervision held at African Centre of Excellence in Data Science (ACE-DS), Gikondo Campus, University of Rwanda, Kigali from the 23<sup>rd</sup> – 27<sup>th</sup> September 2019.
  - IUCEA Workshop on developing bench marks for Mathematics for the region from the 18<sup>th</sup> – 24<sup>th</sup> August 2019 at Ngurdoto Mountain Lodge in Arusha, Tanzania.
  - 4<sup>th</sup> Networking Meeting for Sida and ISP funded PhD Students and Post-docs in Mathematics held at Pyramid Hotel, Bishoftu, Ethiopia from the 4<sup>th</sup> – 10<sup>th</sup> August 2019.
  - Workshop on the Status of Science Education and Performamce in the Secondary Sciences in National Examinations held on 16<sup>th</sup> May, 2019 at Forest Cottages, Bukoto, Kampala.

## **2.3 AWARDS**

### **Drake Ssempijja wins Mandela Washington Fellowship**

Mr. Drake Ssempijja was awarded the prestigious Mandela Washington Fellowship of the Young African Leaders Initiative (YALI). The fellowship tenable at the Leadership in Civic Engagement Institute, University of Georgia, USA. Drake is an Assistant Lecturer in the Department of Zoology, Entomology and Fisheries Sciences at CoNAS. The Mandela Washington Fellowship was established in 2014 by the U.S. Department of State and has to-date supported 3,700 young leaders from sub-Saharan Africa. The fellowship is a flagship





**Drake Ssempijja (2<sup>nd</sup> from right) with other participants of the YALI**

program of YALI aimed at empowering young African leaders through academic coursework, leadership training, mentoring, networking, professional opportunities, and local community engagement.

#### **Younger Investigator Fellowship awarded to Godwin Anywar**

Mr. Godwin Anywar was awarded a Young Investigator Fellowship for the 19th International Congress of the International Society of Ethnopharmacology. Godwin is an Assistant Lecturer in the Department of Plant Sciences, Microbiology and Biotechnology at CoNAS. The award was honouring his scientific contribution on ‘Indigenous Traditional Knowledge and Practices used by Herbalists in the Treatment of Opportunistic Infections in HIV/AIDS in Uganda’ and ‘Investigation of Anti-malarial, Genotoxic and Antibacterial Properties of African Medicinal Plants traditionally used in Western and Central Uganda’. The work from his investigations was presented at the 19th Congress of the International Congress that took place in Dresden, Germany on the 12th – 14th June 2019.

#### **Dr. Michael Owor on Oil and Gas Sector Skills Council**

Dr. Michael Owor was nominated by the Vice Chancellor as a Member of the Oil and Gas Sector Skills Council of the Ministry of Education and Sports to represent Makerere University from 6 September 2019 for 3 years. Dr. Owor is the Chair of the Department of Geology and Petroleum Studies at CoNAS.

**Dr. Patrick Ssebugere – Guest Scientist**

Dr. Ssebugere was awarded a research fellowship by TWAS-DFG as a Guest Scientist, Helmholtz Zentrum München, Germany from January 2019 – April 2019.

**Physics Student awarded at ICTP**

Mr. John Bosco Ssebandeke, MSc Physics student was awarded as the best performing Diploma student in Earth Systems Physics, 2019 at The Abdus Salam International Centre for Theoretical Physics.

**Assoc. Professor Ireeta elected to Africa Materials Sciences Board**

Assoc. Professor Ireeta was nominated and elected to become a Board Member of the African Materials Research Society effective 1st September 2019.

## 2.4 INNOVATIONS

Students from the Department of Geology and Petroleum Studies participated in the exhibition and career seminar under the theme “*Skilling students; a way to boost Uganda’s resource*”; an event graced by students from other universities as well as professionals from the Oil and Gas sector. The students exhibited several projects:

- i. Stratigraphy project which was about a petroleum system containing a source rock, reservoir rock, trap and fault/anticline;
- ii. Geology project which aimed at bringing the field closer in terms of rock samples in relation to petroleum exploration;
- iii. Development project which was a model of the general overview of an oil field;
- iv. Drilling project which was about the components of drilling fluids;
- v. Drilling project having a drill rig prototype;
- vi. Geophysics project concerned with the generation of motion of seismic waves in strata;
- vii. HSE project which was aimed at making students aware of the necessary safety precautions to take while in the field.





Hon. Elioda Tumwesigye – Minister for Science, Technology and Innovations meeting students at the World Science Day Celebrations exhibition.

## 2.5 PUBLICATIONS 2019

### Zoology, Entomology and Fisheries Sciences

1. H Ochieng, J Okot-Okumu & R Odong (2019). **Taxonomic challenges associated with identification guides of benthic macroinvertebrates for biomonitoring freshwater bodies in East Africa: A review.** African Journal of Aquatic Science, DOI:10.2989/16085914.2019.1612319
2. Léopold K. Mulumba-Mfumu Claude Saegerman, Linda K. Dixon, Kapanga C. Madimba, Charles, Masembe et al (2019). **African swine fever: Update on Eastern, Central and Southern Africa.** *Transboundary and Emerging Diseases*, <https://doi.org/10.1111/tbed.13187>
3. **Chemurot, M.,** de Graaf, D.C. (2019). The first detection of *Braula coeca* in honey bee colonies in Uganda. *Journal of Apicultural Research*.
4. **Chemurot, M.,** de Graaf, D.C. (2019). Honeybee colony performance in two agro-ecological zones of Uganda is influenced by land-use type around apiary. *Livestock Research for Rural Development*. Volume 31, Article #103. <http://www.lrrd.org/lrrd31/7/moses31103.html>

## Chemistry

1. **Florence Nantaba, John Wasswa, Henrik Kylin, Wolf-Ulrich Palm, Hindrik Bouwman, Klaus Kümmerer** (2019). **Occurrence, distribution, and ecotoxicological risk assessment of selected pharmaceutical compounds in water from Lake Victoria, Uganda.** *Chemosphere*, <https://doi.org/10.1016/j.chemosphere.2019.124642>
2. Omwoma, S.; Mbithi, M. B.; Pandelova, M.; **Ssebugere, P.**; Lalah, O. J.; Kueppers, S.; Wang, Y., Bi, Y.; Henkelmann, B.; Schramm, K-W. Comparative exposomics of persistent organic pollutants (PCBs, OCPs, MCCPs and SCCPs) and polycyclic aromatic hydrocarbons (PAHs) in Lake Victoria (Africa) and Three Georges Reservoir (China). *Science of The Total Environment*, 2019, 695: 133789.
3. Matovu, H.; Sillanpää, M.; **Ssebugere, P.** Polybrominated diphenyl ethers in mothers' breast milk and associated health risk to nursing infants in Uganda. *Science of The Total Environment*, 2019, 692, 1106-1115.
4. **Ssebugere, P.**; Sillanpää, M.; Matovu, H.; **Mubiru, E.** Human and environmental exposure to PCDD/Fs and dioxin-like PCBs in Africa: A review. *Chemosphere* 2019, 223, 483-493.
5. Matovu, H.; Ssebugere, P.; Sillanpää, M. Prenatal exposure levels of polybrominated diphenyl ethers in mother-infant pairs and their transplacental transfer characteristics in Uganda (East Africa). *Environmental Pollution*, 2020, 258: 113723

## Plant Sciences, Microbiology and Biotechnology

1. **Tugume, P.**, Buyinza, M., & **Kakudidi, E. K.** (2019). Non-timber forest products markets: actors and income determinants. *Researchjournali's Journal of Forestry* 6(1), 1-19, <http://www.researchjournali.com/pdf/4851.pdf>
2. **G. Anywar, E. Kakudidi, R. Byamukama, H. Oryem-Origa** et al. **Indigenous traditional knowledge of medicinal plants used by herbalists in treating opportunistic infections among people living with HIV/AIDS in Uganda.** *Journal of Ethnopharmacology*, DOI: 10.1016/j.jep.2019.112205
3. Mulugo, L. W., C. Galabuzi, G. N. Nabanoga, N. Turyahabwe, G. Eilu, J. Obua, **E. Kakudidi, et al.** (2019). Cultural knowledge of forests and allied tree system management around Mabira Forest Reserve, Uganda. *J. For. Res.* DOI 10.1007/s11676-019-00961-6
4. Galabuzi, C, G. Eilu, L. Mulugo, **E. Kakudidi**, J. R. S. Tabuti & N. Sibelet. (2019). Strategies for empowering the local people to participate in forest restoration. *Agroforest Syst.* DOI 10.1007/s10457-014-9713-6
5. **Tugume, P.**, M. Buyinza and **E. K. Kakudidi** (2019) Creating Awareness of The Value of Non-Timber Forest Products to Rural Communities Around Mabira Central Forest Reserve, Uganda. *Forestry Ideas*, 25, No 1 (57): 119–135
6. **Tugume, P.**, & Nyakoojo, C.(2019) Ethno-pharmacological survey of herbal remedies used in the treatment of paediatric diseases in Buhunga Parish, Rukungiri District, Uganda. *BMC Complementary and Alternative Medicine* 19:353 <https://doi.org/10.1186/s12906-019-2763-6>
7. Nambejja, C., **Tugume, P.**, Nyakoojo, C., & Kamatgenesi-Mugisha, M. (2019). Medicinal plant species used in the treatment of skin diseases in Katabi Sub-County, Wakiso District, Uganda. *Ethnobotany Research & Applications* 18:20.

## Biochemistry and Sports Science

1. Evan Atwijukire, **Joseph Funa Hawumba**, Yona Baguma, Ephraim Nuwamanya et al (2019). **Starch quality traits of improved provitamin A cassava (*Manihot esculenta* Crantz)**. Heliyon 5 (2019) e01215, doi: 10.1016/j.heliyon.2019.
2. **Robert Gumisiriza, Joseph Funa Hawumba, Apollo S. P. Balyeidhusa**, Mackay Okure, Oliver Hensel (2019). **Processing of East African Highland Green Bananas: Waste Generation and Characterization as a Potential Feedstock for Biogas Production in Uganda**. American Scientific Research Journal for Engineering, Technology, and Sciences (ASRJETS), <http://asrjetsjournal.org> , ISSN(print) 2313-4410, ISSN(online)2313-4402

## Mathematics

1. Mbabazi, Fulgensia Kamugisha; **Mugisha, J. Y. T.**; Kimathi, M. (2019). Hopf-Bifurcation analysis of Pneumococcal Pneumonia with time delays. *Abstract and Applied Analysis* 1 – 21 **doi.org/10.1155/2019/3757036**
2. Francis Mugabi, **Joseph Mugisha**, Betty Nannyonga, Henry Kasumba & Margaret Tusiime (2019) Parameter-dependent transmission dynamics and optimal control of foot and mouth disease in a contaminated environment. *Journal of the Egyptian Mathematical Society*. 27:53, 1-21
3. **G. I. Mirumbe** and **J. M. Mango**. **On the convolution of some analytic functionals via the Fourier transform**. International Journal of advanced Applied Mathematics and Mechanics. Volume 6(3), 2019, Pages 42-50.
4. Amornrat Sangsuwan, Kamsing Nonlaopon, Somsak Orankitjaroen and **G.I.Mirumbe**, **The generalized solutions of the nth order Cauchy-Euler equation**, MDPI journal of Mathematics Vol. 7 Issue Number 10, 2019, <https://doi.org/10.3390/math7100932>
5. Juma Kasozi (2019). Maximisation of Dividends in an Insurance Portforlio with Debt Obligation for Exponential Claims. Far East Journal of Mathematical Sciences (FJMS), Vol. 116 Number 2, pages 141-156. <http://dx.doi.org/10.17654/MS116020141>

## Geology and Petroleum Studies

1. **Batte, A.G.** and Rumpker, G. (2019) Spatial mapping of b-value heterogeneity beneath the Rwenzori region, Albertine rift: Evidence of magnetic intrusions. *Journal of Volcanology and Geothermal Research*, 381:238-245.
2. Cuthbert et al. includes **Owor, M.** (2019). Observed controls on resilience of groundwater to climate variability in Africa. *Nature*, Vol 572, 8 August 2019. <https://doi.org/10.1038/s41586-019-1441-7>.
3. Guma, B., **Owor, M.** and **Muwanga, A.** (2019). Hydrogeological characteristics of the Albertine Graben, Uganda: evidence from geophysical and hydraulic testing. *Journal of African Earth Sciences*, 150, 224-238.

4. Nayebara, J.G. Owor, M., Kulabako, R., Campos, L.C., Fottrell, E. and Taylor, R.G. (2019). WASH conditions in a small town in Uganda: how safe are on-site facilities? *Journal of Water, Sanitation and Hygiene for Development*. DOI: <https://doi.org/10.2166/washdev.2019.070>.

#### Physics

1. Robert Lugolole, Ashmore Mawire, **Denis Okello**, Katlego A. Lentswe, **Karidewa Nyeinga**, Adedamola B. Shobo. 2019. *Experimental analyses of sensible thermal energy storage systems during discharging*. *Journal for Sustainable Energy Technologies and Assessment*; Vol.35, pp.117-130. <https://doi.org/10.1016/j.seta.2019.06.007>
2. Mavuto H. Banda, **Karidewa Nyeinga**, **Denis Okello**. 2019. *Performance Evaluation of 830 kWp Grid-Connected Photovoltaic Power Plant at Kamuzu International Airport-Malawi*. *Energy for Sustainable Development*; Vol.51, pp.50-55. <https://doi.org/10.1016/j.esd.2019.05.005>
3. **Karidewa Nyeinga**, **Denis Okello**, Ole Jorgen Nydal. 2019. *A ray tracer model for analysis of solar concentrating systems*. *Journal of Energy in Southern Africa*; Vol.30, No.1, pp.8-20. DOI: <http://dx.doi.org/10.17159/2413-3051/2019/v30i1a5267>





**SUPPORT SERVICES**

### 3 SUPPORT SERVICES

#### 3.1 Human Resource: Promotions and Appointments of CoNAS 2019

The College human resource base comprises of Academic, Technical, administrative and support staff. During the year 2019, the College registered new appointment, loss of staff through retirement, resignations and death as presented in the following table. The college management has requested University management to urgently advertise the positions.

**Table 7: Staff Changes in the College during 2019**

NAMES	RANK	DEPARTMENT/UNIT
<b>Retirements</b>		
Florence Mutonyi D'ujanga	Associate Professor	Physics
Dr. Akisophel Kisolo	Senior Lecturer	Physics
Mr, Michael Nganda	Lecturer	Mathematics
Dr. John-Vianney Tiberindwa	Senior Lecturer	Geology and Petroleum Studies
Dr. Erasmus Barifaijo	Associate Professor	Geology and Petroleum Studies
Dr. Hannington Oryem-Origa	Professor	Plant Sciences, Microbiology and Biotechnology
Mr. Stevens Lutwama	Technician I	Biochemistry and Sports Sciences
Ms. Florence Mulinda	Laboratory Assistant	Biochemistry and Sports Science
<b>Resignations</b>		
Mr. Robert Tugume	Assistant Lecturer	Geology and Petroleum Studies
Dr. James Egonyu	Lecturer	Zoology, Entomology and Fisheries Sciences
Dr. Ivan Lule	Lecturer	Chemistry
Ms. Catherine J. Nuwagaba	Laboratory Assistant	Biochemistry and Sports Science
<b>Death</b>		
Ms. Ritah Nabacwa	Senior Technician	Biochemistry and Sports Science

#### 3.2 Communication and Grants Office

At the beginning of 2019 the College Communication Office was designated to house the Grants Office with the following terms of reference:

- Organise write-shops for staff for proposal development
- Organise trainings for staff
- Provide market intelligence to staff by looking for funding opportunities (the college for starters will subscribe to portals/platforms where funding agency information is available)
- Checking compliance issues as given by funding agencies
- Call for feedbacks and opinion from staff regarding service by the office
- Prepare institutional data and available research infrastructure required by staff applying for grants as it forms the background for proposals
- Assist staff in editing proposals, packaging, track deadlines etc.
- Keeping records of all proposals processed and submitted for funding
- Create a database of key industry and relevant stakeholders with interest in research collaboration with CoNAS
- Maintenance of the research administration/information website

The office in its first year of operation achieved the following:

- The newly established Grants Office was. The equipment includes: meeting table and 4 chairs, a filing cabinet, a coloured printer, a scanner, a computer system that is fully loaded and connected to the internet.
- The College has acquired a DUNS number and registered on the SAM system (<https://grants.gov>). This will allow the college to apply directly for grants instead of use of agents or other institution numbers.
- Staff in the office subscribed to NCURA and SRAI to facilitate access research to management resources.
- Bi-weekly grant calls are shared with CoNAS staff to keep them abreast with opportunities available.
- A Grants/Project Website was developed ([www.conas-projects.mak.ac.ug](http://www.conas-projects.mak.ac.ug)) as a one-stop centre for research information in the college. We have also created an e-mail account for the office ([projects@cns.mak.ac.ug](mailto:projects@cns.mak.ac.ug))
- Academic Staff in the College have been categorised in their research interests and specialities. This is intended to guide support to their research work.
- A detailed work-plan and budget was submitted to University Management for funding.
- The college registered as a member on a regional researching funding platform i.e. <https://fundsbeeline.com> this allows the office to receive notification on new funding opportunities which are shared with staff.

### **3.3 Library services**

The College of Natural Science library has a collection of approximately 25,000 information materials constituting of monographs, journals, serials and archival materials. Before the collegiate system, each of the departments in the College had its own library or book-bank where departmental – specific scientific information has been kept for only its staff and students, and usually manned by technicians. With the advent of a collegiate system and deployment of a professional librarian, all these libraries have been merged to compose one college library. Scientific information materials in the College of Natural Science remains unprocessed, hence an information gap to the numerous scientific research. A stock-taking of the library collection was undertaken in 2019.







Makarere University  
COLLEGE OF NATURAL SCIENCES

# STRUCTURE OF CoNAS

## **4 INTRODUCTION**

CoNAS is proud to be 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 carryout 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:

### **4.1 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.

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.

## 4.2 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.

- a) **Biochemistry** is the study of the Chemistry of life. It is the science that deals with the chemical process of life. Biochemists describe and explain, in molecular terms, all chemical processes of living cells– Structure-function– Metabolism and regulation including how life began. The principal biomolecules studied by biochemists are: Carbohydrates, Lipids, Proteins, Nucleic acids (DNA & RNA) etc. As a unit of CoNAS, Biochemistry strives to produce graduates equipped with knowledge and practical skills to solve societal problems through innovative research thus contributing to national development.

Graduates of biochemistry work in various manufacturing industries such as foods, beers, and soft drinks industries, Pharmaceutical/Biotechnology Laboratories, academic and research Laboratories. *Biochemists* in hospitals and clinical laboratories *are* responsible for investigating and diagnosing patient illnesses. The biochemists test patient samples and interpret the results for other medical staff.

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.

- b) **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.

There are plans to upgrade the unit into a department and eventually into an institute as a centre of excellence in the region. Development plans for a Sports Science complex are also in the pipeline.

The Unit has a mandate to teach research, innovate and carry out outreach activities in the area of physical activity and proper therapeutics. The mission for this unit is to provide transformative innovative teaching, learning, research and community out-reach services responsive to dynamic national and regional needs’.

### **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.

Students of Chemistry have career opportunities in pharmaceuticals, research labs, forensic labs, food and manufacturing industries, chemical engineering, renewable energy etc. The department is a recent beneficiary of ADB funding through the Government of Uganda to refurbish the Chemistry building and its laboratories which is a welcome development to ensure that our graduates receive world class training.

The mandate of the department is to be a nationally-recognized model for developing robust thinkers and problem solvers through experiential learning opportunities involving laboratory practice, research and professional development in chemistry and related studies. 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 mandate 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 Pharmaceuticals, 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.

## **4.3 ADMINISTRATIVE UNITS**

### **4.3.1.1 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.

### **4.3.1.2 College Communication Office and Grants 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.

Within the Communication Office, a new **College Grants Office** is under establishment. The proposal to establish a grants office in the college had been on for the last 4 years. Because the need for this office is very high, the College included it in its new strategic plan (2020 – 2030) as a key support service. With support from IREX and Carnegie Corporation of New York, the college has kick-started the establishment of the Grants Office currently in the communication office. It will for a start offer pre-award services to its faculty in order to improve on chances for winning more sponsored research grants to the college.

### **4.3.1.3 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.

### **4.3.1.4 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.

#### **4.3.1.5 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.

#### **4.3.1.6 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.

### **4.4 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.

### **4.5 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.

However, most of the facilities of the college were built in the 1960s with equipment and infrastructure of that time. Today, there are high advancements in technology and science thus more infrastructure development is required for all departments in CoNAS. The refurbishments realised in Chemistry and Plant Sciences are considered a beginning but more is required to match the global trends in scientific technology for the college. There is a proposal for a new building for the college incorporating a Library, an auditorium,



conference facilities, ICT facility and a cafeteria for staff and students. It had been thought that the ADB funding would cater for the proposed building but this wasn't possible due to the shortage of funds.

#### **4.6 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 to be 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) **College Library:** While the college has a library, it can only sit 20 people at a time and the collection is very old and limited to cater for the demands of both staff and students (undergraduate and graduate)
- e) Hi-tech Bioinformatics Laboratory
- f) The Natural History Museum and Aquarium
- g) Computer Laboratories and ICT facilities
- h) Solar Energy and Seismic Network
- i) Science Workshop
- j) Seismic Laboratory
- k) Petroleum Exploration and Production Laboratory
- l) Biological Field Station in Kibaale National Park
- m) Research labs** in all the departments, however these require expansion and new equipment to cater for the increasing number of students.



## **APPENDIX: STAFF LIST FOR 2019**

**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 Ssevviiri	Senior Lecturer ( HOD)	PhD	Permanent
5	Dr. Betty Kivumbi Nannyonga	Senior Lecturer	PhD	Permanent
6	Dr. Godwin Kakuba	Senior Lecturer	PhD	Permanent
7	Dr. John Mulindwa Kitayimbwa	Lecturer	PhD	Permanent
8	Dr. Saul Hannington Nsubuga	Lecturer	PhD	Permanent
9	Dr. Ismail Geoffrey Mirumbe	Lecturer	PhD	Permanent
10	Dr. Joseph Ssebuliba	Lecturer	PhD	Permanent
11	Dr. Hassan. Ddumba	Lecturer	PhD	Permanent
12	Dr. Henry Kasumba	lecturer	PhD	Permanent
13	Dr. Alex S. Bamunoba	Lecturer	PhD	Permanent
14	Dr. Fred Mayambala	Lecturer	PhD	Permanent
15	Dr. Alex Behakanira Tumwesigye	Lecturer	PhD	Permanent
16	Dr. Onesfole Kurama	Lecturer	PhD	Permanent
17	Dr. Juliet Nakakawa	Assistant Lecturer	PhD	Permanent
18	Dr. Denis Wokiyi	Assistant Lecturer	PhD	Permanent
19	Mr. Michael Nganda	Lecturer	MSc.	Contract
20	Mr. Wilber Grace Naigambi	Lecturer	MSc.	Permanent
21	Mr. Yasin Kikabi	Assistant Lecturer (PhD Study Leave)	MSc	Permanent
22	Mrs. Betty Nabiyonga Kirenga	Assistant Lecturer	MSc.	Permanent
23	Mr. Hassan Wasswa Kayondo	Assistant Lecturer (PhD Study Leave)	MSc	Permanent
24	Mr. David Ddumba Walakira	Assistant Lecturer	MSc.	Permanent
25	Mr. Nathan Muyinda	Assistant Lecturer (PhD Study Leave)	MSc.	Permanent
26	Mr. Innocent Ndikubwayo	Assistant Lecturer (PhD Study Leave)	MSc.	Permanent
<b>SUPPORT STAFF</b>				
27	Nakku Goretta	Administrative Secretary II		Permanent
28	Wandera Abel	Library Assistant		Permanent
29	Nazziwa Passy Lwanga	Cleaner/Messenger		Permanent
30	Habarurema Andrew	Cleaner/Messenger		Permanent
31	Nassuuna Jennifer	Cleaner/Messenger		Permanent
32	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. Steven Allan Nyanzi	Assoc. Professor	PhD	Contract
4	Dr. George William Nyakairu	Assoc. Professor	PhD	Permanent
5	Dr. Muhammad Ntale	Assoc. Professor (Dean, SPS)	PhD	Permanent
6	Dr. John Wasswa	Senior Lecturer (HOD)	PhD	Permanent
8	Dr. Gabriel Kasozi	Senior Lecturer	PhD	Permanent
7	Dr. Betty B. Naziriwo	Senior Lecturer	PhD	Permanent
9	Dr. Emmanuel Tebandeke	Lecturer	PhD	Permanent
10	Dr. Hassan Kisiki Nsamba	Lecturer	PhD	Permanent
11	Dr. Jane O. Namukobe	Lecturer	PhD	Permanent
12	Dr. Patrick Ssebugere	Lecturer	PhD	Permanent
13	Dr. Kenneth Arinaitwe	Lecturer	PhD	Permanent
14	Mr. James Sekamatte	Lecturer	MSc.	Permanent
15	Dr. Ibrahim Karume	Lecturer	PhD	Permanent
	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 (PhD Study in-service)	MSc.	Permanent
23	Mr. Fahad Matovu	Assistant Lecturer	MSc.	Contract
24	Ms. Ruth Mbabazi	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 Amanyanya	Lab Assistant		Permanent
37	Mr. Moses Mutenyo	Lab Assistant		Permanent
38	Mr. Tom Adriko	Lab Attendant		Permanent
39	Mr. Joseph Tumwekwasize	Lab Attendant		Permanent

**Department of Geology and Petroleum Studies**

NO.	NAME	TITLE	Education	STATUS
<b>Academic Staff</b>				
1	Dr. E. Barifaijo	Assoc. Professor	PhD	Contract
2	Dr. A. Muwanga	Assoc. Professor	PhD	Contract
3	Dr. J.V. Tiberindwa	Senior Lecturer	PhD	Permanent
4	Dr. M. Owor	Senior Lecturer / HOD	PhD	Permanent
5	Dr. B. Nagudi	Senior Lecturer	PhD	Permanent
6	Dr. A. G. Batte	Senior Lecturer	PhD	Permanent
7	Dr. J. M. Kiberu	Lecturer	PhD	Permanent
8	Dr. K. Aanyu	Lecturer	PhD	Permanent
9	Dr. Simon Echegu	Lecturer	PhD	Permanent
10	Ms. P.Kulyanyingi	Lecturer	MSc.	Permanent
11	Mr. W. Kawule	Assistant Lecturer	MSc.	Permanent
12	Mr. L. Twinomujuni	Assistant Lecturer	MSc.	Permanent
13	Mr. R. Tugume	Assistant Lecturer	MSc.	Permanent
14	Mr. Mukiibi Ivan Ssewanyanga	Assistant Lecturer	MSc.	Probation
<b>Part-time Lecturers</b>				
15	Mr. Joseph Okello	Assistant Lecturer		
16	Ms. Asenath Kwagalakwe	Assistant Lecturer		
<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. Enock Emodock	Lab Assistant		Permanent
22	Mr. Ssekamanya Grace	Lab Assistant		Permanent
23	Mr. Charles Bagaramba	Cleaner		Permanent
24	Mr. John Obua Okullo	Cleaner		Permanent
25	Mr. Christine Auma	Cleaner		Permanent

**Department of Physics**

No.	Name	Title	Education	Status
<b>Academic Staff</b>				
1	Dr. F. D'Ujanga	Assoc. 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 Nteziyeme	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	Administrative 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	Permanent
10	Ms. Rhona Baingana	Lecturer	MSc.	Permanent
11	Dr. Julius Mulindwa	Lecturer	PhD.	Probation
12	Dr. Joel Isanga	Lecturer	PhD	Permanent
13	Dr. Samuel W.Wamutu	Lecturer	PhD	Permanent
14	Mr. Karlmax Rutaro	Assistant Lecturer	MSc.	Probation
15	Mr. Moses Okol	Assistant Lecturer	MSc.	Probation
16	Mr. Robert Gumisiriza	Assistant Lecturer	MSc.	Permanent
17	Ms. Hellen Butungi	Assistant Lecturer ( <i>PhD Study Leave</i> )	MSc.	Permanent
18	Mr. John Omara	Assistant Lecturer	MSc.	Permanent
19	Ms. Claire Aguttu	Assistant Lecturer	MSc.	Permanent
Technicians				
20	Mr. Ambrose Mukisa Kamugisa	Chief Technician		Permanent
21	Mr. Emmanuel Musisi	Principal Technician		Permanent
22	Mr. Godfrey Mugenyi	Senior Technician		Permanent
23	Mr. Elia Musali	Technical Assistant		Permanent
24	Ms. Prossy Namande	Lab Assistant		Permanent
25	Mr. Francis Ssemujju	Lab Attendant		Permanent
Support Staff				
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. Racheal Nabwami	Cleaner		Permanent
32	Ms. Robinah Kyomukama	Sanitary Cleaner		Permanent

### Sports Science Unit

No.	Names	Title	Education	Status
Academic Staff				
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. Deborah Baranga	Professor	PhD	Contract
2	Dr. Fredrick J. Muyodi	Assoc. Professor (Deputy Principal)	PhD	Permanent
3	Dr. Anne M Akol	Associate Professor	PhD	Permanent
4	Dr. Charles Masembe	Associate Professor	PhD	Permanent
5	Dr. Samuel Mugisha	Senior Lecturer	PhD	Permanent
6	Dr. Eric Sande	Senior Lecturer / HOD	PhD	Permanent
7	Dr. Gladys Namuswe Bwanika	Senior Lecturer	PhD	Permanent
8	Dr. Jackson Efitre	Senior Lecturer	PhD	Permanent
9	Dr. Peter Akoll	Lecturer	PhD	Permanent
10	Dr. John.J. Kisakye	Lecturer	PhD	Permanent
11	Dr. Ronald D. Ssemyalo	Lecturer	PhD	Permanent
12	Dr. Robinson Odongo	Lecturer	PhD	Permanent
13	Dr. Godfrey K. Kubiriza	Lecturer	PhD	Permanent
14	Dr. Moses Chemurot	Lecturer	PhD	Permanent
15	Dr. Rose Nalwanga	Lecturer	PhD	Probation
16	Dr. Perpetra Akite	Lecturer	PhD	Probation
17	Ms. Juliet Natabi Kigongo	Assistant Lecturer	MSc.	Permanent
18	Mr. Drake Ssempijja	Assistant Lecturer	MSc.	Contract
19	Dr. Robert Kityo	Museum Curator	PhD	Permanent
<b>Technicians</b>				
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
<b>Support Staff</b>				
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. Fabiano Ebonga	Lab Assistant		Permanent
29	Ms. Gertrude Babirye Namuli	Cleaner		Permanent
30	Ms. Juliet Nabatanzi	Cleaner		Permanent
31	Ms. Mercy Atwuukye	Cleaner		Permanent
32	Mr. Adam Kintu	Cleaner		Permanent

33	Ms. Asumpta Katusiime	Cleaner/Messenger		Permanent
34	Ms. Mary Nakayiza	Sanitary Cleaner		Permanent
35	Ms. Lettice Gimbo	Sanitary Cleaner		Permanent

#### Department of Plant Sciences, Microbiology and Biotechnology

No	Name	Title	Education	Status
<b>Academic Staff</b>				
1	Prof. Hannington Oryem-Origa	Professor	PhD	Contract
2	Prof. Sylvester Nyakaana	Professor	PhD	Permanent
3	Dr. Esezah Kakudidi	Professor	PhD	Contract
4	Dr. Arthur K. Tugume	Assoc. Professor	PhD	Permanent
5	Dr. Patrick Mucunguzi	Assoc. Professor	PhD	Permanent
6	Dr. James Kalema	Assoc. Professor	PhD	Permanent
7	Dr. Perpetua Ipulet	Senior Lecturer (HoD)	PhD	Permanent
8	Dr. Esther Katuura	Senior Lecturer	PhD	Permanent
9	Dr. Clement Nyakoojo	Lecturer	PhD	Permanent
10	Dr. Esther Nakamate	Lecturer	PhD	Permanent
11	Dr. Anthony M. Nsubuga	Lecturer	PhD	Permanent
12	Dr. Dorothy Ndagire	Lecturer	PhD	Permanent
13	Dr. Shahasi Yusuf Athman	Lecturer	PhD	Contract
14	Dr. Collins. E. Bulafu	Lecturer	PhD	Permanent
15	Dr. Jamilu Ssenku	Lecturer	PhD	Permanent
16	Dr. Patience Tugume	Lecturer	PhD	Permanent
17	Dr. Alice Nabatanzi	Lecturer	PhD	Permanent
18	Dr. Savina Asiimwe	Lecturer	PhD	Permanent
19	Mr. Allan Ochieng	Assistant Lecturer (Studying PhD in-service)	MSc	Permanent
20	Mr. Cyprian Osinde	Assistant Lecturer (Studying PhD in-service)	MSc	Permanent
21	Ms. Margaret Atim	Assistant Lecturer	MSc	Permanent
22	Ms. Teddy M. A. Tindyebwa	Assistant Lecturer	MSc	Permanent
23	Mr. Sadiq A. Mustafa	Assistant Lecturer (Studying PhD in-service)	MSc	Permanent
24	Ms. Lydia Nabyonga	Assistant Lecturer	MSc	Permanent
25	Mr. Godwin Anywar	Assistant Lecturer	MSc.	Permanent
26	Mr. Samuel Ojelel	Assistant Lecturer (Studying PhD in-service)	MSc.	Permanent
<b>Herbarium Staff</b>				
27	Dr. Mary Namaganda	Principal Assistant Curator	PhD	Permanent

28	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

#### Staff Principal's Office

No.	Name	Designation
<b>Administrative Staff</b>		
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
5	Ms. Sarah Nakayima	College Librarian
6	Ms. Zaaam 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