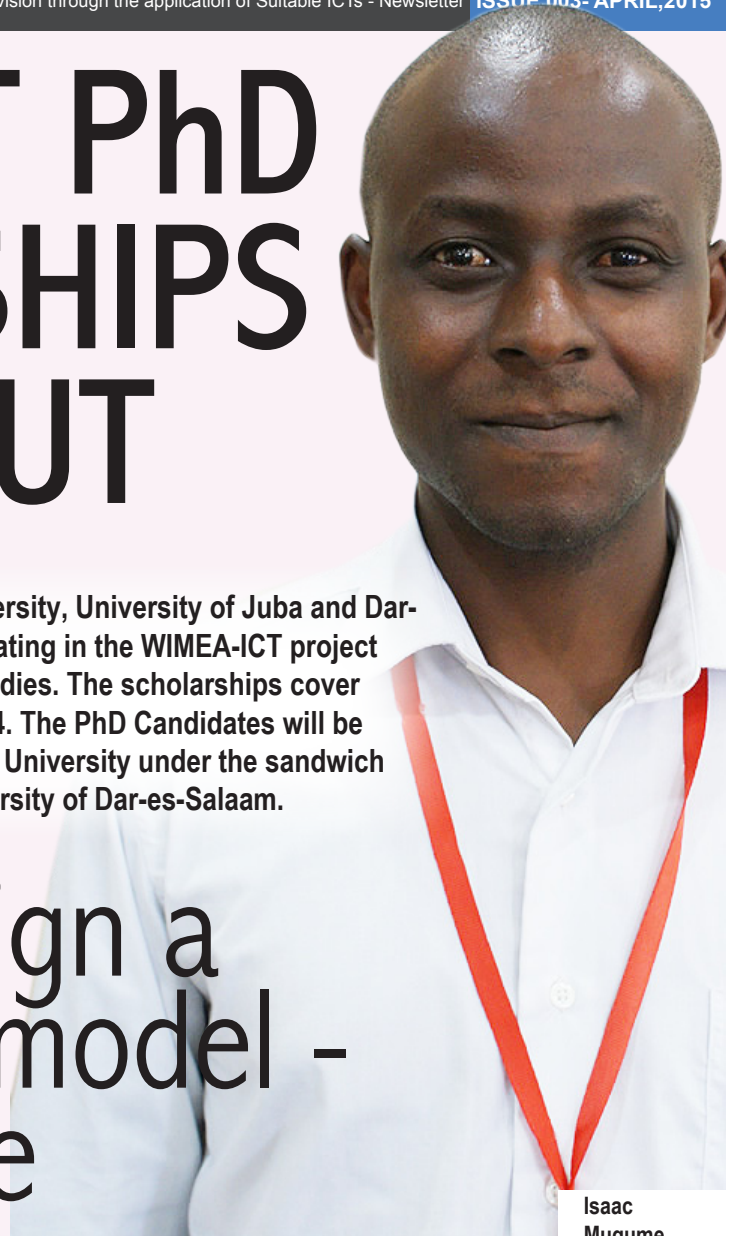


WIMEA-ICT PhD SCHOLARSHIPS ROLLED OUT

Eight academic staff members from Makerere University, University of Juba and Dar-es-Salaam Institute of Technology who are participating in the WIMEA-ICT project have received scholarships to pursue their PhD studies. The scholarships cover a period of four years beginning 1st December 2014. The PhD Candidates will be enrolled at both University of Bergen and Makerere University under the sandwich mode, while one candidate will be enrolled at University of Dar-es-Salaam.

I hope to design a new weather model - Isaac Mugume



Isaac Mugume

In 2004, Mugume started out as a secondary school Physics-Math teacher at Kabalenga S.S.S in Masindi District.

Having studied B.Sc./Edc Physics-Math at undergraduate level, he was able to join the

Meteorology department in October 2005 which was under the Ministry of Water, Lands and Environment at that time.

Later on, the department forwarded him along with 10 other colleagues on his team to study a Postgraduate Diploma

in Meteorology at Makerere University. He graduated in January 2009.

He also did an MBA at Makerere University with the intention to boost his administration and managerial skills.

In August 2010, Uganda

DOREEN'S TARGET IS THE END USER

Doreen Tuheirwe Mukasa is an assistant lecturer in the Department of Computer Science in the School of Computing and Informatics Technology (SCIT), Makerere University. She holds a Bachelor of Science degree from Makerere University and a Masters degree in Systems and Software Engineering from the University of Groningen in the Netherlands. Her research interests are in software architectures, service centric systems and mobile infrastructures.

"When I saw the advert for the scholarships, I googled WIMEA-ICT to get background information on the project. When I read about the project's problem case, and especially research component 4 that I specifically applied for, I considered WIMEA-ICT to be a good way to extend my masters research which had focused on how to get information from different services, combine it and present it as one service to an end user," says Mukasa.

One problem the WIMEA-ICT project cited is the dissemination of weather information which is necessary for use by people in different sectors say, agriculture, health, energy, construction and so on. Mukasa looks to contribute to efficiently disseminating weather information.

"I would like to explore ways of structuring weather information in a way that is useful to a farmer, which will be different from the format relevant to a fisherman, or an engineer or a construction worker. The farmer may be interested say in rainfall and how much it is, while a fisherman is perhaps just interested in information on wind," she says.

Mukasa's main objective is to take from weather repositories, structuring and formatting the information in an appropriate manner and to present it in the most efficient and simple ways to users.

And how far has she gone in her research, we ask her, "I participated in the national survey on Weather Information Dissemination Systems in Uganda in November last year along with the lead researchers on this project and the research paper will be out soon. I am working on having my complete proposal by June but currently working on my methodology section," she intimates.



Doreen
Tuheirwe



David Aggrey
Lukudu

QUESTION: Who are you?

ANSWER: My name is David Aggrey Lukudu, a lecturer in the College of Computer Science and Information Technology at the University of Juba. I hold a Master of Science degree in Computer Science from the Faculty of Mathematical Science, University of Khartoum, Sudan. My undergraduate studies were done at Mbarara University of Science and Technology in Uganda.

Q: What prompted you to apply for the PhD scholarships under the WIMEA-ICT project?

A: The well-designed program of the WIMEA-ICT project, which strictly focuses on deliverables in time is one of the magnets for attracting serious PhD students to work with them. Also, WIMEA-ICT is supporting weather management projects which in turn provide opportunities for carrying out researches on modeling and simulation which is my area of interest for further studies. WIMEA-ICT provides the chance for working out the research in a collaborative style and hence increase the chances of intensive research.

Q: What will be your area of

Improving the life of the communities in the Sudd region in Sudan will be a life time contribution to my nation

research focus?

A: I will mainly focus on the application of Computational Modeling and Simulation in predicting weather patterns with special focus on the effect of these patterns on the future of the great Sudd region in South Sudan.

Q: What do you hope to achieve at the end of your studies?

Q: Attaining a PhD in Computational Modeling and Simulation will be a dream come true. Improving the life of the communities in the Sudd region will be a life time contribution to my nation.

I WANT TO ADD VALUE TO INFORMATION DELIVERY-MWESIGWA

An Academic Librarian with a MSc. Information Systems & a Bachelor of Library and Information Science, Andrew Mwesigwa is specializing in management of information systems and digitization workflow management in order to add value to information delivery. He has conducted research in the field of information management, disseminated research findings at international conferences and engaged in international collaborations. All this has led to showcasing the value of academic librarianship to users of information.

Reflecting on why he got interested in applying for the WIMEA-ICT scholarships, Mwesigwa says, "In an age of climatic changes that have impacted communities globally, it is incumbent on the research community to investigate mitigation interventions. It is evident that Research and Development (R&D) has made a difference in the developed world. I would like to contribute to R&D efforts in the East African context."

He will focus on Weather Information Management Policy analysis: investigating the regulatory environment.

He projects that his research will have implications for Weather Information Management Policy formulation and related

business process re-engineering.

As a research leader and PhD student on the WIMEA-ICT project in charge of developing a Weather Data Repository (WDR), he can reliably report that he has so far prepared requirement analysis, deployed research assistants to assist in designing the WDR and presentation of the proposed WDR to UNMA stakeholders.

He was part of a stakeholders' meeting with UNMA that was held on April 10, 2015 to discuss the Integrated Weather Data System where the challenges faced by the Authority like scattered data sets were highlighted.

In addition the functionality of the proposed WDR were clarified to include: automated system notifications, advanced report generations and data quality assurance, which are actually benefits of this automated repository.

UNMA welcomed this idea going on to agree that it will be effectively in place by end of June 2015.

As far as the digitization activity at UNMA is concerned, Mwesigwa says there have been some delays at the procurement office due to the lengthy procurement process at Makerere University.

However, the mobile handheld scanners and a scan dock are available and this activity will be able to start by end of this June. Appointments are being made on which dates are suitable to have this process start.



Andrew
Mwesigwa

Meet Mary Nsabagwa, the web programmer



Mary
Nsabagwa

An asset to her department

What would interest a young lady in applying for a PhD scholarship under the WIMEA-ICT project? "

I am interested in embedded systems as well as designing real systems. I would like to implement systems out of my research and WIMEA-ICT gives me that opportunity," says Mary Nsabagwa.

An assistant lecturer at the College of Computing and Information Sciences, Makerere University, Nsabagwa has a Bachelor of Science in Computer Science from Makerere University and a Masters of Engineering in Computer Science and Technology from Hunan University P.R.C.

"My Masters research was in Data Storage and particularly on improving Iscsi protocol.

I like programming and have been involved in many projects most of which are web-related," she says.

She has been involved in the supervision of final

year Software Engineering students' (embedded systems) projects including the automated security system using RFID, green house monitoring systems, air quality monitoring system, fire detection and reporting systems, automatic lighting control among others.

Although the department of Networks has had a course on Embedded Systems, Nsabagwa noted that many students have picked interest in designing embedded systems and yet there is a shortage of lecturers specialized in it. She knows she will be an asset to the department.

Her research focus will be in custom designing of cheap and reliable weather stations, which can operate within the African Context.

When she is done with her studies, she would like to see weather stations in Uganda automated, maintenance made easy and for regions that have not been equipped with up to standard weather stations to be equipped. These stations shall be custom made and very cheap to get and maintain.

Triphonia's mathematics to take her places

QUESTION: Tell us about yourself

ANSWER: I am an Assistant Lecturer at Dar es Salaam Institute of Technology. I have a Bachelor degree in Mathematics with Education, which I got from Tumaini University, Iringa and a Masters in Mathematical modelling at University of Dar-es-Salaam. My Masters research was in Mathematical Modelling of Cholera Dynamics with some intervention strategies in Tanzania. This was to determine the impact of sanitation, chlorination and public health education in Tanzania. The results showed that sanitation and public health efforts in Tanzania can eliminate cholera from the population.

For the past three years, I have been teaching a course in Computing using mathematical software for engineers, how to use Mat LAB and numerical methods to solve engineering problems.

Q: What got you interested in applying for the PhD scholarships under WIMEA-ICT?

A: One of the research areas of the project is Numerical Weather Prediction (NWP) modeling (particularly the Weather Research and Forecasting (WRF) model). NWP is one

of the real life applications that intersects Mathematics and Meteorology that has always been my interest. I want to use mathematical and numerical models to model real life events and this scholarship is within this area of interest.

I have a strong mathematical and computational background. My bachelor and master's degree in mathematics has given me an experience in modeling real life events in different fields such as ecology, epidemiology and environments

Q: What will be your area of research focus?

A: Numerical Weather Prediction Modeling

Q: What do you hope to achieve at the end of your studies?

A: My goal is to become an expert on weather predictions using mathematical and numerical models to forecast future behaviour of our countries. This scholarship will also give me strong skills and experience in manipulating huge data sets and exploiting outputs from mathematical and numerical model simulations using a super computer facility at DIT.



Triphonia

Kondela goes wireless



Emmanuel Kondela

Emmanuel Kondela is an assistant lecturer in the Department of Computer Studies at Dar-es-Salaam Institute of Technology. He holds a Bachelor of Engineering degree in Design Electronic Computing Systems and Technology from Kursk State Technical University (Russia) and Master of Engineering in Computer Science and Technology from Central South University (China). While in Russia, he worked in the Laboratory of Construction of Electronic Computing Systems. In China, he worked in the Laboratory of Multimedia Technology.

His interest in applying for the WIMEA-ICT course stems from his desire for growth.

"I wish to have international exposure, acquire more knowledge and skills based on real-time embedded systems. This is an opportunity for me to achieve that," he says.

He intends to focus on design and deployment of a real-time wireless sensor network in large scale for environmental observation.

"I expect to study various aspects of real-time wireless sensor networks and produce fruitful results such as the quality-of-service in wireless sensor networks. I would like to link quality estimation and scalable data processing to scheduling algorithms, analysis

methods, component-based real-time systems, hierarchical scheduling, power management, software concurrency in languages and real-time middle ware," he says.

He further hopes to investigate sensor network and applications in environmental and energy conservation. He also wants to study the following challenges:

*What are the fundamental challenges in implementing real-time large-scale sustainable wireless sensor network?

*Which research and technical issues must be addressed to design and implement a real-time large-scale sustainable wireless sensor network?

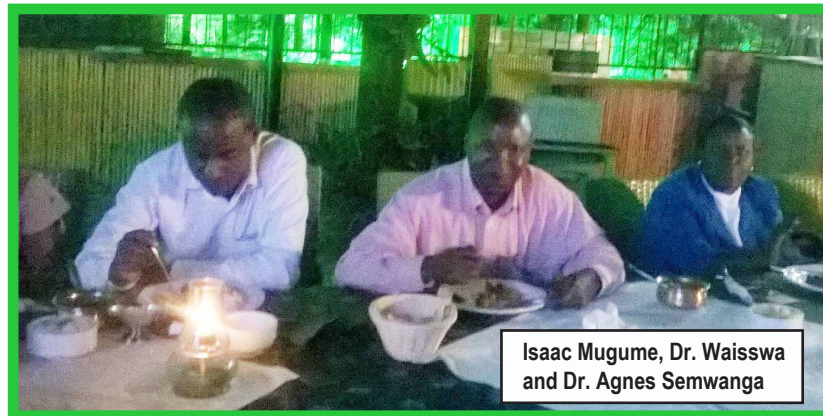
*Where are the potential design spaces of future real-time wireless sensor network research?

*How to efficiently and effectively integrate the physical word, real-time wireless sensor network and internet such that we can efficiently monitor the environment and then derive usable knowledge?

At the end of his studies, Kondela would like to be an expert in the field of real-time wireless sensor networks.

I want to provide consultancy, research and to teach in various institutions. I also hope to help our farming communities and aviation and meteorological agencies regarding real-time weather stations

A dinner fit for academicians



Isaac Mugume, Dr. Waisswa and Dr. Agnes Semwanga



Dora Bampangana and Doreen Tuheirwe enjoy a light moment



Dinner time

On April 2, 2015, the WIMEA-ICT PhD candidates in Uganda dined with their supervisors and mentors. The dinner,

which was organised by Dr. Agnes Semwanga (the WIMEA-ICT's gender specialist) was aimed at developing links and better interactions between the students with their mentors and supervisors. It was during this dinner that Dr. Peter Wakholi shared some of the experiences of studying in Bergen, Norway.

WHAT STUDENTS NEED FOR NORWAY

Norway, particularly the city of Bergen, is multi-cultural. For a PhD student to successfully complete their course at the University of Bergen, they must accumulate the required credits through passing a number of courses and to publish at least two peer-reviewed research papers.

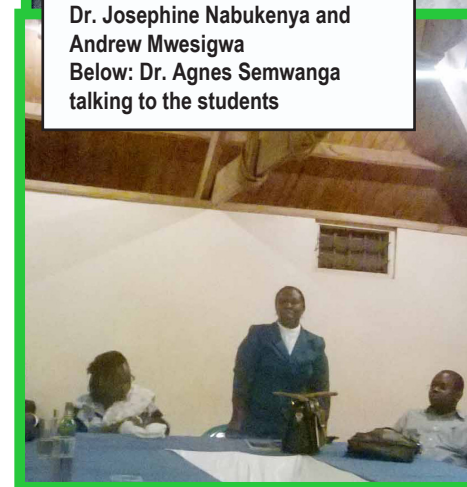
For this to happen, the student must maintain a good relationship with their supervisors and work hard.

WHAT ARE THE EXPECTATIONS FROM THE STUDENTS ON THE PROJECT?

Students are expected to be fully committed and finish their study in time. They were advised to let go of the other attachments elsewhere and also reduce on their teaching load so as to have full concentration on their studies. They need to establish good relations with their supervisors and mentors so that they can ask questions



From left: Dr. Julianne Sansa Otim, Dr. Josephine Nabukenya and Andrew Mwesiwa
Below: Dr. Agnes Semwanga talking to the students



and share information regarding their success and challenges in their study. They must take the lead and remind their supervisor and not the supervisor chasing after them concerning their PhD.

WHAT ARE THE EXPECTATIONS FROM THE SUPERVISORS AND MENTORS?

Supervisors need to respond to their students' consultations and queries. Keep timelines and monitor their students' progress.

QUICK CHECKLIST: WHAT PROSPECTIVE PHD STUDENTS IN BERGEN NEED TO KNOW

- A student visa is required in order for one to study in Norway. Students need to start working on it two months in advance because Norway Visas take long.
- Owning a rain suit is helpful because of the frequent rains in the country.
- One needs credit cards because most of the transactions are done via credit cards, with some places declining cash and access to forex being very limited.
- Most shops are not open over the weekend.
- Residing in international students' residence e.g. Fantoft is recommended and due to the high demand for such residences one needs to make early bookings.
- During the period of residence, apartments should be taken care of properly otherwise the security deposit will not be reimbursed.
- Always speak up, Norwegians consider keeping quiet stupid.
- Enjoy the recreations such as mountain climbing.

WIMEA-ICT: Improving **W**eather **I**nformation **M**anagement in **E**ast **A**frica for effective service provision through the application of suitable **I**CTs

UNIVERSITETET I BERGEN
Geofysisk institutt



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