

# One Health Central and Eastern Africa OHCEA Uganda Chapter

## One Health Front-runners 2017



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# Acknowledgments

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**M**akerere University School of Public Health (MakSPH) and College of Veterinary Medicine, Animal Resources and Biosecurity (COVAB) would like to specially acknowledge funding from USAID through Emerging Pandemic Threats-2 Project, One Health Workforce (OHW) project and One Health Central and Eastern Africa (OHCEA), that have made the implementation of the Activities of Year 3 possible.

We would like to acknowledge the technical support given from the United States partners at University of Minnesota and Tufts University, the Thematic Leads on Research and Training, Partnerships, Students One Health and Innovation Clubs and the Regional Manager at the OHCEA Regional Secretariat. The time and effort that the Lead Faculty from MakSPH and COVAB spent championing and directing the implementation of the one health activities is duly recognized and appreciated.

We also thank the various members of academic staff in Makerere University College of Veterinary Medicine, Animal Resources and Biosecurity (COVAB), College of Health Sciences (CHS), College of Humanities and Social Sciences (CHUSS) who supported the technical, consultations and managerial aspects of this project and participated in mentoring the students in the One Health Approach. We indeed appreciate the Principals of CHS and COVAB, Deans of the School of Public Health (MakSPH), School of Veterinary Medicine and Animal Resources (SVAR) and School of Biosecurity and Bio-laboratory Sciences (SBLs) for the support they rendered to OHCEA, academic staff and students during the period the Activities were operational.

In a very special way we wish to recognize and appreciate the efforts and inputs the Principal Investigator and CEO of OHCEA, Prof William Bazeyo and Co- Principal Investigator, Prof. John David Kabasa for guidance, support and mentorship and conducive environment and a platform for carrying out the OHI activities.

Furthermore, we are indebted to Local Government in the Districts where OHCEA and the teams of university students together with Faculty engaged the communities in One Health activities e.g. Kampala, Wakiso, Mukono, Masaka, Kasese, Bundibugyo, Arua, Nakaseke, Kiboga, Nakasongola, Mbale, Bukedea, Butaleja and Tororo, especially the offices of the Chief Administrators Office (CAO), Resident District Commissioner (RDC), District Health Office (DHO), District Veterinary Office (DVO) among others. Institutions that supported our graduate fellows e.g. Amref Health Africa, IDI-Global Health, AFRISA, ResilientAfrica Network (RAN)

Lastly, we express our deep gratitude for the generous support given by the Ministry of Health (MoH), Ministry of Agriculture and Animal Industry (MAAIF), Ministry of Water and Environment (MWE), Uganda Wildlife Authority (UWA), the National One Health Platform, the EPT-2 partners with Global Health Security Agenda (GHSA) projects funded by USAID: PREDICT-2, FAO-ECTAD, Preparedness and Response and the USAID Mission, Uganda.

**W**elcome to the first issue of the One Health Front Runners. We have highlighted a series of activities that took place in 2017. These were multi-sectoral and interdisciplinary emphasizing the one health approach.

We had a series of educational activities involving community engagements, outbreak investigations and many more. We also partnered with the government to identify one health training needs among others.

The key players in the implementation of these activities were; under graduate, graduate students, faculty, government ministries and USA university partners.

*The OHCEA Uganda Office*





*Interactive discussion by Dr. Tamale Andrew (COVAB) during a sensitization session on outbreak investigation and emergency during the 2017 cohort intake. The group is preparing to present their outputs*

## Background to One Health Central and Eastern Africa

### OHCEA Vision

A global leader in One Health approaches to sustainable health for healthy productive animals, prosperous communities and productive ecosystems.

### OHCEA Mission

To drive transformational change for continuous improvement of health and well-being of humans, animals and ecosystems through multidisciplinary research, training and community service.

One Health is a multidisciplinary and multi-sectoral collaborative undertaking to attain optimal health for our people, our animals (domestic and wild) and our environment.

The United States Agency for International Development (USAID) Emerging Pandemic Threats phase-two (EPT-2) program, through the One Health Workforce (OHW) project has supported OHCEA (One Health Central and Eastern Africa; ([www.ohcea.org](http://www.ohcea.org))) to implement activities that support the One Health education approach in Makerere University. Our partners at the University of Minnesota (Project Lead) and Tufts University regularly provide support.

OHCEA was initiated in 2010, is an international network in eight countries in Eastern, Central and Western Africa, rooted in 24 Institutions in 16 Universities including Makerere University School of Public Health (MakSPH) in the College of Health Sciences (CHS) and College of Veterinary Medicine, Animal Resources and Biosecurity (COVAB). In 2017 a third Institution, Mbarara University of Science and Technology has joined the Network. The overall goal of OHCEA in Uganda is to develop a One Health higher education system that will produce a One Health graduate with transformative knowledge and ability to prevent and mitigate infectious disease outbreaks

# Capacity Building and Strengthening in the pre-service workforce



*Collaborative Stakeholders Meeting to solicit the views of the Business sector with regards to the Exe MPH-MBA curriculum development.  
22nd September 2017 – Kabira Country Club*

It is common for teaching on most degree courses on the university to be conducted within a single school or college. This limits discussion and collaboration across disciplines, hindering shared understanding and vision and coordinated outcomes or solutions to health challenges within our community. One Health education delivered through curriculum change, joint lectures and experiential learning to multidisciplinary student classes fosters the practice of 'doing-things-together' i.e. team building, learning principles together, problem-solving together, simulating together and practicing together etc. Multi-disciplinary training allows for areas of synergy to be identified as well as appreciating the roles the other professions play in infectious disease prevention and control.

This will result in a change in the mind-set, skills and knowledge of the future one health workforce (university students), and help instilling the one health practice in the minds of the students

OHCEA has previously supported MakSPH and COVAB to strengthen undergraduate and graduate courses at MakSPH and COVAB by including one health competencies (2013-2016). There has also been a short course to enhance the capacity of lecturers design and develop courses (2016).

OHCEA is now involved creating new a curriculum- the Executive MPH-MBA (Masters Public Health-Masters Business Administration) This unique master's program, which will draw students from Business, Veterinary Medicine, and Public Health, creating graduates who work in the field responding effectively to emerging pandemic threats, but also having business skills. In addition, the program will enable students practice public health as a business.



*Collaborative discussion on curriculum development by staff a MakSPH and visiting lectures from University of Minnesota : Prof. John Finnegan, Assoc. Prof Caroyln Porta and Prof Katey Pelican.*





*The 2017 cohort participants in the One Health Institute Course on One Health Concepts and Infectious Disease Management*

## Teaching of Principals in One Health to Undergraduate and Graduate Students

A total of 30 undergraduate students and 8 graduate students selected competitively across 8 colleges and schools in Makerere University underwent 16 days of sensitization on selected one health concepts and core competencies. The following Colleges involved: CHS, COVAB, CHS CAES: (6 students each). Other Colleges of CONAS COBAMS, CEDAT, CEES, COSIS, (had 2 students each).

Seven Modules namely,

- (i) Leadership in Infectious Disease Management;
- (ii) Gender in Risk Management;
- (iii) Health Policy Analysis;
- (iv) Bio-risk management;
- (v) Disease outbreak investigation & Emergency Response;
- (vi) Antimicrobial resistance and
- (vii) Community Engagement.

Teaching involved interdisciplinary theoretical lectures, group engagements, discussions, case studies, role plays, and disease and outbreak situation simulation delivered by interdisciplinary and cross-sectoral teams of faculty (from **COVAB, MakSPH and CHUSS**) with support from the Government Ministries and our U.S based partners from **University of Minnesota and Tufts University**.





Various interactive sessions during the theoretical modules on One Health Principles and Concepts

- 1: Group task on prioritizing diseases using participatory methods
- 2: Participants prepare to present a group discussion during a session on outbreak break response
- 3, 4 & 5: Mr Richard Mafigiri (MakSPH), Mr Samuel Etajak (MakSPH) and Ms. Nalaga Celia (participant) lead a discussion sessions



The theoretical classes were followed by a practical community engagement on the One Health demosites that OHCEA developed in the first year, for capacity building, outreach, and applied research.

Together with the communities at these demo-sites student, faculty and government work to address joint complex health problems at the human-wildlivelivestock- environmental interface. The 2017 cohort went to the community in Kasese District that has a border with DRC, has mining towns of Hima and Queen Elizabeth National Park.





*Some of the 2017 Cohort students at COVABs before departure for the field attachment to Kasese District*

## One Health Field Attachment

On completion of the sensitization course on one health concepts the undergraduate students in two multidisciplinary groups (each with 15 students), were deployed in the two communities of Mpondwe-Lhubiriha and Kasese-Hima in Western Uganda for a period of 28 days. Students carried out various activities in collaboration with the residents in the communities aimed at detecting health and environmental challenges and formulation of practical solutions to the same, executing such interventions and evaluation of the outcome.

Throughout the entire period, the students were under supervision and guidance of a multidisciplinary team of at least two faculty from COVAB, CHS and CHUSS with either veterinary/ animal production/ wildlife/ environmental health/ human nursing/ laboratory technology, or social sciences background. Also inclusive in the team of mentors were the district local government staff from the human and animal health sectors.

Through daily debriefs and group discussions, under the guidance of faculty and district local government field staff, the students were able to put their minds and disciplines together to come up with optimal solutions to the identified challenges. This reflective sharing also enhanced multidisciplinary learning among the students, faculty and government staff.

Some of the most prominent interventions the team of students implemented during the field attachment jointly and in collaboration with the communities to mitigate the health challenges included the following:

These health education sensitizations in the communities at Kayanzi Landing site on L. Edward on bilharzia and primary schools importance of hand washing. In an effort to sensitize the community

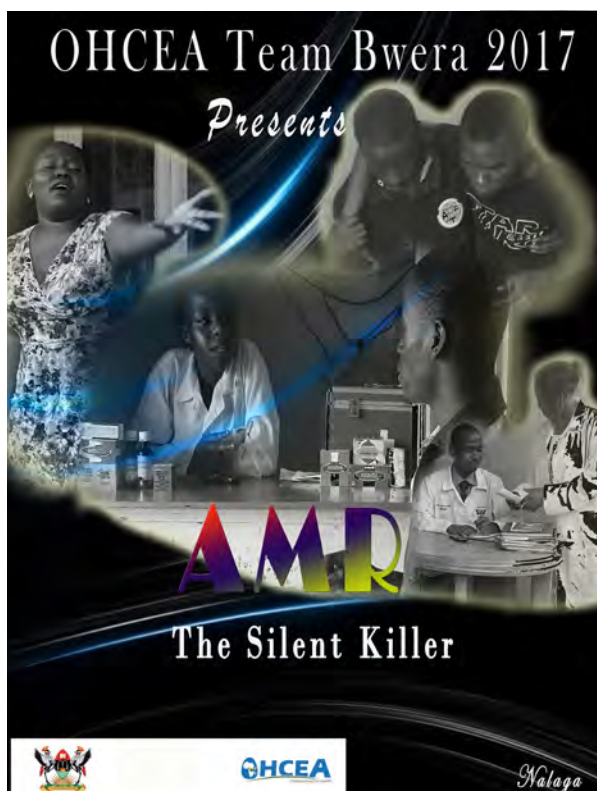


# ? AMR

*Antimicrobial resistance is the ability of a microorganism (like bacteria, viruses, and some parasites) to stop an antimicrobial (such as antibiotics, antivirals and antimalarials) from working against it. As a result, standard treatments become ineffective, infections persist and may spread to others.*

on the deeper problem **anti-microbial resistance (AMR)**, the university students used a simple educative platform involving a drama play on AMR to deliver their message to college students at Bwera School of Nursing and midwifery.

The students, working together with the community in Hima, redesigned the soak-away pit at the community slaughter slab to segregate solid and liquid waste as an intervention to improve hygiene in this area. Lastly, **an initiative on alternative fuel involving briquette** that encourage recycling of unusable charcoal dust, to improve livelihoods was demonstrated to the urban community at Mowlem market in Hima.



The play depicted the day to day habits and practices of the ordinary people that can be to lead to antimicrobial resistance. These include buying drugs from un-licensed practitioners, not following the correct prescription dose, using human drugs on livestock as growth promoters etc.

Full Report:  
<https://medium.com/one-health-workforce/seeing-the-world-through-many-lenses-c83539978c9d>

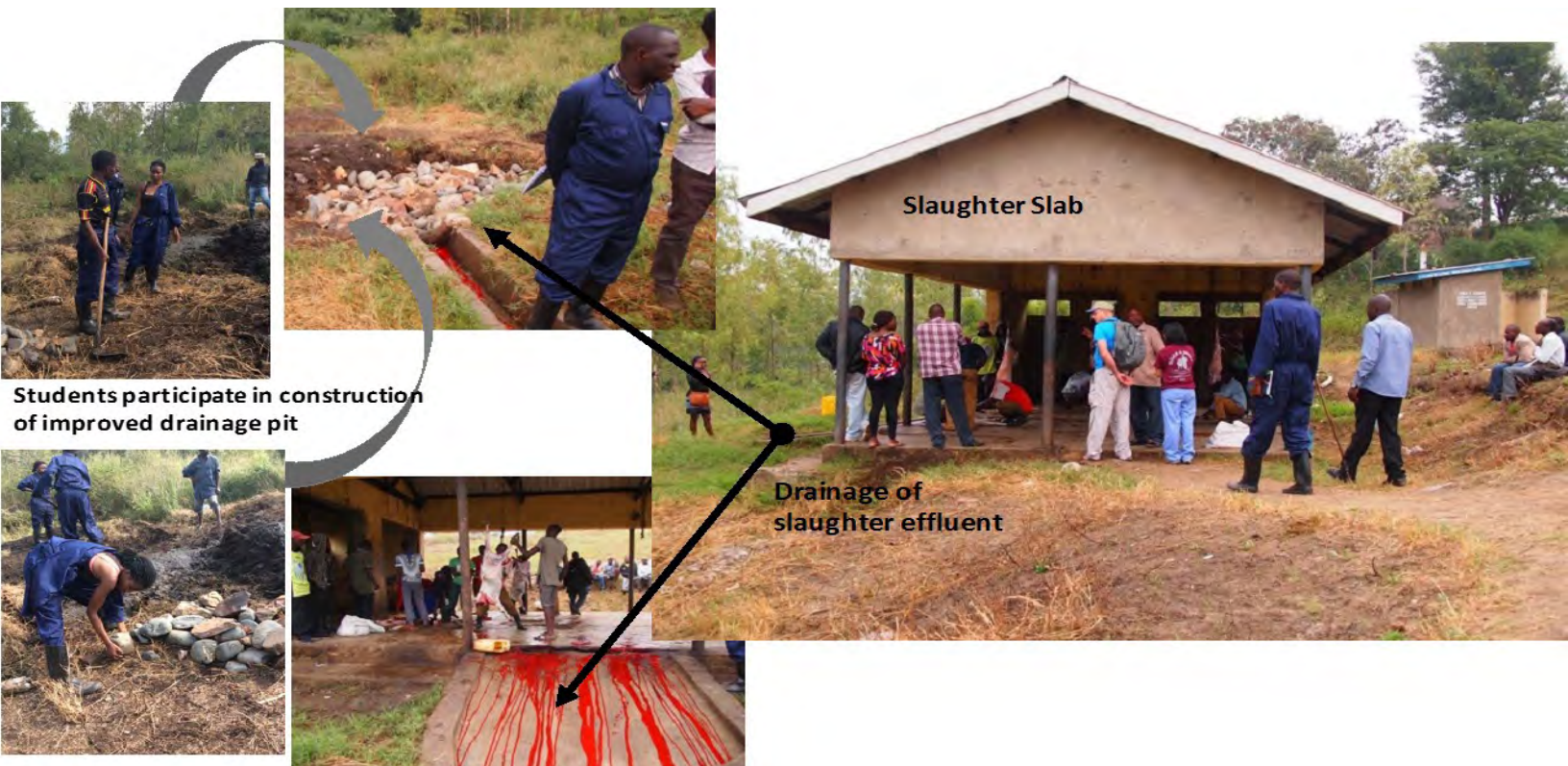


The Viewing the drama Play (AMR The Silent Killer) at the Bwera school of nursing on Antimicrobial Resistance spearheaded by Grace Celia Nalaga (Software Engineering, COCIS)



A scene from the drama Play (AMR The Silent Killer) where the parents took the sick child to see the Doctor.





Students participate in construction of improved drainage pit

Drainage of slaughter effluent

The Health Challenge at the Hima Township Slaughter Slab was the drainage of slaughter effluent into the surrounding grass. The One Health Team together with the community improved the drainage by construction of a temporary soak-pit. It was advised that this pit should be covered.



The Bilharzia is an infectious parasite transmitted when fresh water becomes contaminated from infected animal or human urine or faeces. It was found to be one of the common diseases at the Health Center at Kyanja Landing Site on Lake Edward.

The One Health Team carried out sensitization on practices that can prevent the disease. Oral lectures aided by hand-drawn charts and animation movies on laptops disseminated this information.





Mwolem food market in Hima Township had a problem of accumulated charcoal dust as a residue form the sale of charcoal. The One Health Team led a community session on how to recycle this waste into Charcoal Briquettes. This community engagement was led by Brian Mutebi (Bachelor of Agricultural and Rural Innovation) Full report: <https://medium.com/one-health-one-future/recycling-for-health-cf6ae9041c09>



Focus Group discussion with community members of Nyakatonzi Pastoralists community to elucidate the health challenges



Hands-free washing facilities are ideal especially in public areas. A Tippy Tap using this principle was commissioned at Kanyangya Primary school in Kasese Township. (lead by Ivan Kizito (MB.ChB) )



## Disease Prevention by Immunization:



1-2: HPV (Human Paillomavirus ) Immunization campaigns in selected primary schools in Kasese Municipality.

3-7: Hepatitis B immunization among the pastoralists in Nyakatonzi Pastoralists in partnership with a local Non-Government Organization - RICADNET.



The student Medical interns and Biomedical Laboratory Science technologists participated in administering of the immunization doses and laboratory pre-tests. The other participants carried out sensitization the importance of the immunization, or helping participants complete the data forms.





*Graduate Fellows discussing strategy with Activity Lead Dr. Gabriel Tumwine at the Country Office*

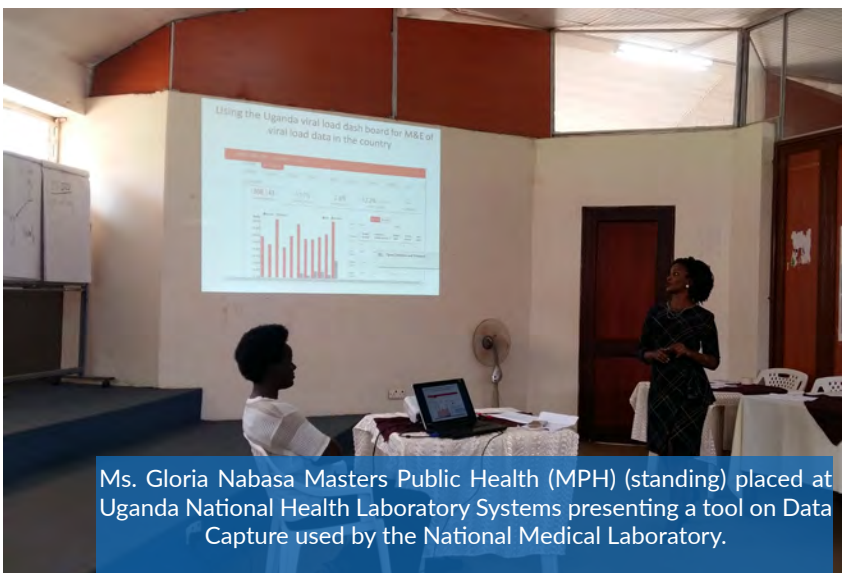
## One Health Graduate Fellowship Placements Attachment

OHCEA supported the placement of graduate students for mentorship in health organizations that were practicing the one health approach to gain a first-hand technical experience under multi-sectoral or multidisciplinary environments.

A total of 10 Graduate students placed at the following Institutions mentoring One Health for a period of 60 days. **FAO-ECTAD-2 project, Amref Health Africa, International Disease Institute (IDI), AFRISA, ResilientAfrica Network (RAN) and the Uganda National Health Laboratory Systems.**

Some of the technical tasks the graduate students were able to participate in included real-time risk analysis, surveillance, reporting and aspects of community engagement, for Highly Pathogenic Avian Influenza, Trypanosomiasis, Laboratory data.





Ms. Gloria Nabasa Masters Public Health (MPH) (standing) placed at Uganda National Health Laboratory Systems presenting a tool on Data Capture used by the National Medical Laboratory.



Fiston Muneza (MPH) placed at Resilient Africa Network (RAN) highlights a stakeholder engagements including conducting Deliberative polls



Guma Williams (Msters Veterinary Preventive Medicine) placed at FAO- Uganda on the ECTAD-2 project talks about his experience during his participation in Community Biorisk management



Ms. ELizabeth Namirembe (MPH) placed at Uganda National Health Laboratory Systems talks about the National Laboratory Day





*Student Responders on a boat on Lutenbe Beach with Personal Protective Equipment (PPE) go out on the lake to collect a dead bird*

## Building outbreak investigation and rapid response skills through attachment of students to outbreaks in collaboration with the government of Uganda

Students participate in disease outbreak response or public health interventions in partnership and under the mentorship of the sector Ministry or National and District Task Force which foster One Health approach. The basics of risk management during outbreaks are emphasized e.g. biosecurity and biosafety, risk assessment, community engagement and participatory epidemiology skills, risk communication etc.

In teams of about 10 students, they were able to carry out epidemiology studies on the Highly Pathogenic Avian Influenza outbreak in February 2017, Anthrax High Alert in Arua, July 2017; Crimean Congo Hemorrhagic Fever Outbreak in Nakaseke and Kiboga Districts, September 2017 and Marburg Haemorrhagic fever outbreak in Kween and Kapchorwa in November 2017.



1. Community in Malagacia cattle market, Arua District prioritizing losses cause by Anthrax during an assesment study
2. Interviewing a household at Kiyini-Kibi Village in Kiboga district, whre the index interated with livestock during the Crimean Congo Viral Haemorrhagic Fever Outbreak





*Rabies Vaccination Point outside Kawaala Health Centre II. A young pet owner talks to the students as his dog receives a vaccine dose*



*A student in action. A dog restrained in a muzzle receiving a rabies shot*

## Building skills in risk communication and public health interventions through experiential learning and community engagements

Rabies Vaccination and Awareness Outreach in commemoration of World Rabies Day, held On 28th, 29th And 30th September 2017 in Kanyanya, Kabowa and Kawaala using a One Health Approach. This outreach was organized and driven solely by the students. – Mr Musiime Victor and Bwambale Collins (both BVM IV students). A total of 70 students were mobilized to participate through student leaders in each of the collages. An average of 40 students participated per day from COVAB, MakSPH, COBAMS, LLB, MA-SS and MA –Arts,. This outreach was able to cover a total of 115 pets (dogs and cats) with the rabies vaccine

Students offering, Veterinary Medicine administered the vaccine, while those in Public Health and Environmental Health Science and Social Sciences participated in the rabies sensitization exercise. The students from Law were to examine the any legal by laws surrounding the vaccination. The students were supervised by a veterinary doctor from KCCA, another from the private sector and a member of the University Faculty.



*Visit to tsetse fly insect traps in Tororo at Salama Integrated Farm*

10 students (BVM, BBLT, MPH, M.Sc IDM, BEH, M.A Gender studies, M.A. Social Sector Studies, M. Business Admin) participated in an epidemiological study of Trypanosomiasis, a prioritized zoonotic disease and its control in Eastern Uganda – Mbale, Butaleja, Bukedea and Tororo from 11th -16th June 2017.”



## The Rabies Vaccination and Sensitization outreach won a global competition in One Health



### STUDENT TEAMS FROM MAKERERE AND IOWA STATE WIN THE 2017 ONE HEALTH DAY STUDENT EVENT COMPETITION

The second annual global [One Health Day](#), held on 3 November 2017, generated over 110 events in over 28 countries. Officially launched in April 2016 by three leading international One Health groups, the [One Health Commission](#), the [One Health Initiative](#) Autonomous pro bono Team, and the [One Health Platform Foundation](#), this initiative has grown into an annual, global platform for One Health advocates to educate about One Health and One Health challenges. While One Health events happening any time of the year can be registered to celebrate One Health Day, competing student led events must happen within a September 1 to

Today, the One Health Day Coordinating Team enthusiastically announces the winners of the 2017 One Health Day Student Events Competition. Competing groups had to meet a set of qualifying criteria and were required to submit a post-event summary. The One Health Day organizers were impressed with the work of the Student Event teams, and, based on an objective assessment, two teams are each being awarded a \$2,000 prize. The winning 2017 One Health Day Student Event Competition teams are: the Makerere University One Health Student Innovation Club, which organized a Rabies Vaccination and Awareness Campaign in Uganda, and Iowa One Health for organizing the second Iowa One Health Conference.

Scholarships to support and strengthen existing Masters programs related to infectious diseases and threats.

In 2016, total of ten graduate students (MakSPH, COVAB- SVAR and SBLS, CHS, CAES, COBABS and CONAS) from were awarded funds to engage in research that was multi-sectoral and multi-disciplinary in order to foster collaborations at the human-animal-environment interface that would result in holistic solutions to community problems.

In 2017, another five masters students from CHS, COVABS, CAES and CONAS were able to complete utilize the awards for their experiments or field studies. A summary of these students is in the following table.

Name of Student	College	Title of Dissertation	Year of completion of Research chapter
David Kaptengen	College of Health Sciences (CHS) School of Public Health (SPH) Masters in Public Health (MPH)	Factors associated with Diarrhea in Children Under-five after the occurrence of Flash-floods and Adaptation Strategies developed by households in Bwaise, Kampala	Completed in 2016
Richard Nanyumba	CHS SPH MPH	Evaluation of Community based groups' capacity to implement Disaster risk reduction interventions in the Mt. Elgon Region	Completed in 2016
Edson Munanura	CHS Department of Pharmacy	The Potential Role of Rodents in the transmission of Leptospira spp. to humans around Queen Elizabeth National Park.	Completed in 2016
Esau Kabwiso	College of Veterinary Medicine, Animal Resources and Biosecurity (COVAB) School of Veterinary Medicine and Animal Resources (SVAR) Masters in Livestock Development (MLD)	Investigation Of The Antimicrobial Resistance Crossover Along The Domestic-Wildlife Interface In Scoring Calves Of Cattle And Zebras In Pastoral Communities Around Lake Mburo National Park.	Completed in 2017
Obukui Emmanuel	COVAB SVAR Msc L/S Dev't planning and Mgt (MSLD).	Predictive patterns of fascioliasis outbreaks in cattle grazing around the wetlands of Soroti in eastern Uganda	Completed in 2017
Jolly Achola	College of Business and Managerial Sciences School of Economics (COBAMS) Masters in Arts in Economic Policy and Planning	Health Implications on children of poor food safety measures amongst slum dwellers in Kampala.	Completed in 2017
Lutwama Vincient	College of Agriculture and Environment Sciences (CAES) M.Sc. Animal Science	Safety Of Insects And Insect Meal As Protein Source For Poultry And Fish Feed	Completed in 2017
Barbara Nakintu	CHS Msc.Immunology and Clinical MicroBiology.	Prevalence of Mycobacterium Bovis and Mycobacterium Tuberculosis in Samples collected at Kisenyi, Kampala	Completed in 2017
Nakigozi Harriet	COVAB School of Biosecurity and Bio laboratory Sciences (SBLS) MSc Biomedical laboratory +science and management (MLS)		





*Participants of the Multi-Sectoral Government Collaborative Workshop held at Botanical Beach Hotel in Entebbe, 22nd to 24 August 2017*

## Government Partnerships

OHCEA supported Makerere University in one health workforce planning in partnership with the government. Working collaboratively with the government on the National One Health Platform in the sectors of Ministry of Agriculture Animal Industry and Fisheries (MAAIF), Ministry of Health (MoH), Ministry of Water and Environment (MWE) and Uganda Wildlife Authority (UWA)

Workforce needs and gaps in the strategies that the government uses when responding to the prioritized zoonoses were identified.

The output will provide a basis for the necessary competencies in curricula and training of current and future One Health Workforce.

A 3-day multi-sectoral Government collaborative workshop (22nd to 24th August 2017 Entebbe) OH-SMART (One Health Systems Mapping and Analysis Tool Kit) was used to visualize the existing collaborative approaches implemented during these zoonoses outbreaks. Some other outputs for the workshop included identification weaknesses (gaps), opportunities for improvement and rally cross-sectoral collaboration cross-sectoral collaboration and cross-sectoral collaboration.



*Mapping the pathways take during mitigation of disease outbreaks*



*Session on Stakeholder Identification during the multi-sectoral workshop*



# Institutionalizing One Health in Makerere University

A joint stakeholder meeting between all the 8 colleges and Schools Academic Registrar's Office, Directorate Graduate Studies, Planning Unit, Library, VC's Office will be held

## Output:

- Sensitizing the the University Community on One Health and milestones OHCEA has achieved.
- Will be some future opportunities for collaboration in One Health under teaching, research and community service. These will be drafted into a workshop report. A framework for this collaboration will be generated later.

## ONE HEALTH ACTIVITIES FOR YEAR 4

*(October 2017- September 2018)*

Code	Activity Description	Time line
UG 1.1.1	Validation of One Health Workforce Assessment Report Running of the One Health Institute cohort 2081	April 2018
UG 2.1.1	One Health Institute Course on Infectious Disease Management for Undergraduates and Post Graduates: ( 7-day Training)	1st week June 2018
UG 2.1.2	One Health Field Attachment for Undergraduates (14-day community engagement)	2nd to 3rd week June 2018
UG 2.1.3	One Health Graduate Fellowship Placement (60-day community engagement)	June – August (60 days)
UG 2.2.1	Health Global Health Security Agenda Seminar Day	3 or 9th June
UG 2.2.2	Initiate One Health Student Club in Mbarara University of Science and Technology	To be Determined
UG 2.2.3	Sharing One Health Experiences in Conferences– JISSCA MUHESA, MUBLITSA AMR seminar, International Students BOMA	Jan, March, April and June 2018
	Responding to Outbreak in collaboration with Government	Any Time
UG 4.0.0	Curriculum development for Exec MPH-MBA	Jan – September 2018
UG 5.0.0	Institutionalizing One Health Makerere University (Framework for OH)	Jan – September 2018