



**Next Generation
Global Health Security
Network
Reflections**

Table of Contents

Jamechia D. Hoyle – Coordinator, NextGen GHSA Network.....	3
Anthony Falzarano, George Mason University.....	5
Daniel G. Garcia-Gonzalez, Texas A&M University	6
Dennis Kalibbala, Makerere University.....	7
Kaisa Lähdepuro, Ministry of Social Affairs and Health, Finland	9
Lyazzat Musralina, Institute of General Genetics and Cytology.....	10
Emmylin Nabanobe, Makerere University.....	12
Martin Nabwana, Hutchinson Centre Research Institute of Uganda.....	13
Susan Nakubulwa, NextGen member, East Africa Working Group.....	14
Peter Mooka Next Generation Global Health Security.....	15
Stephen Taylor, George Mason University.....	17
Ashley Tseng, McGill University.....	18

Jamechia D. Hoyle – Coordinator, Next Generation Global Health Security Network

On October 25-27th, the Ugandan Government hosted the [4th Global Health Security Agenda](#) (GHSA) High-level Ministerial Meeting in Kampala, Uganda – the first Ministerial Meeting on the African continent. The meeting was called to order during a time where health security professionals were addressing a plague outbreak in Madagascar and a local Marburg outbreak in the host country, Uganda. This alone was a vivid reminder that health security must remain a priority.

Many high-level officials from the host country, including [President Yoweri Museveni](#), welcomed delegates to the Uganda and reaffirmed their commitment to health security. The conference was well attended by the member nations, the private sector, non-governmental organizations and the Next Generation. GHSA membership continues to expand with a noted increase to 63 member countries with the addition of Nigeria and the Philippines. Hopefully, the trend will continue until the GHSA membership mirrors the membership of the World Health Organization.

Building Partnerships

This year's Ministerial Meeting central theme challenged countries to invest more in health security by focusing on implementing GHSA, particularly by completing the Joint External Evaluations, establishing National Plans to address the gaps and solidifying a relationship with the private sector and non-governmental stakeholders for continued support of engagement activities. As an additional step, it would challenge each member country to continue to invest in the Next Generation as the sustainable future of health security progress for the world.

His Excellency Park Neunghoo, Minister of Health and Welfare, Republic of Korea, opened the summit by emphasizing the importance of building partnerships within and across countries. This meeting was the first GHSA summit to emphasize community education to enhance prevention, detection and response to infectious disease threats. As the case of Ebola demonstrated (and again with the plague outbreak in Madagascar), local communities often withstand the worst of outbreaks, can provide early detection, and need a coordinated response to halt the outbreak. It is imperative that countries, the private sector and non-governmental organizations establish relationships with local communities before outbreaks. Health security preparedness at the local level is essential for long-term sustainable progress in GHSA.

The meeting sessions reflected the core theme of building partnerships by including government agencies, Ministries of Defense and Ministries of Finance, and other Ministries that were not traditionally part of GHSA meetings in the past. The summit also featured a strong focus on operationalizing multisectoral approaches to global health security. Aligning with the conference theme, Dr. Alan Tennenberg, Chief Medical Officer, Johnson and Johnson Global Public Health and Private Sector

Roundtable Representative, offered encouraged a novel engagement strategy between governments and other partners: “Engage, Recruit, and Partner”. As national governments develop frameworks for partnership, this engagement strategy could be implemented to engage non-traditional local communities, private sector companies, academia, and the non-governmental sectors; recruit new stakeholders as local partners and advocates for GHSA and establish a prioritized list of partners in health security.

The Next Phase of Global Health Security Capacity-Building

As more countries complete the Joint External Evaluations (JEE) and develop National Action Plans to close the gaps identified by that assessment process, there is an increased need to ensure a steady stream of financing to ensure that public health investments are sustainable.

WHO Africa Region Director of Program Management, Dr. Joseph Cabore, reminded attendees that the assessments are nothing more than report cards and for the process to be most successful, it must be followed by a government-owned and properly costed multisectoral plan for implementation. For the countries that have completed the JEE assessments, 26 countries in the pipeline, and others who will complete the assessment in the future, partnerships will be critical for addressing identified gaps from the assessment process.

GHSA – A way forward

As the GHSA approaches the end of the 5-year initiative, many conversations centered on the continuation of the initiative. Overall, the resounding support for this initiative by all countries, including the United States, the private sector, and civil society culminated in the Kampala Declaration – a concrete commitment from the members of the Global Health Security Agenda to extend their work to strengthen global health security and implement the International Health Regulations (2005) until 2024. While there is overwhelming support for extending GHSA to 2024, many questions are left to be answered. Will the US remain financially committed under the new administration? Will additional countries answer the call to join GHSA? Will the agenda remain committed to partnerships with the private sector, non-governmental sector, academia and the Next Generation? Nonetheless, GHSA member countries and partner organizations—from multinational corporations to local community groups—remain committed to a world safe and secure from the threat of infectious diseases.

Reflection

As the current chair of the Next Generation Global Health Security Network (NextGen), I applaud the Government of Uganda for a fruitful meeting that moved beyond theoretical conversations about partnerships to concrete examples of partnerships and open dialogue on areas where we can collectively improve GHSA, national and international collaboration. The Next Generation remains committed as a vested partner in GHSA. As we continue to expand our network to create a

multidisciplinary, international group of skilled early to mid-career professionals and students committed to the advancement of the principles of GHSA, we in turn request that the next iteration of GHSA create a space for the growing network of professionals, but also remain committed to our involvement at the local level in Joint External Evaluations, National-level planning and other essential activities.

The next few pages will provide a detailed review and reflection of the 4th Annual GHSA Ministerial Conference in Kampala, Uganda from Next Generation Global Health Security members in attendance. We would like to acknowledge sponsorships from Management Sciences for Health, The Nuclear Threat Initiative, and George Mason University.

Anthony Falzarano – George Mason University

I am a first semester Master's student in the Biodefense program at George Mason University. Prior to starting at Mason, I studied Microbiology and Environmental Engineering at The Ohio State University. My primary interests include government and security issues involving biological threats – particularly regarding climate change, antimicrobial resistance, or intentional incidents. I am a member of the NextGen GHSA network and was awarded George Mason University's Global Health Ambassador Fellowship, which supported my travel to Uganda for this meeting.

In Kampala, I had the opportunity to attend two breakout sessions. The first was *Engaging the Non-Governmental and Academic Sectors into the Next Phase of GHSA*, moderated by Dr. Jennifer Nuzzo of Johns Hopkins University. This session included expert speakers from academic and non-governmental organizations – including Georgetown University in Washington DC and Makerere University in Kampala – on the panel.

This session focused on three main areas: 1) incorporating the non-governmental organization (NGO) sector into the next phase of GHSA, 2) NGO functions in facilitating multi-sectoral collaboration and coordination, and 3) roles of academic and NGOs in the education and training of global health security workforces. As a student of global health security, the last two were the most interesting to me. The speakers underlined a distinct need for proper education and training of those who will eventually implement the policies, as well as the need for NGOs to facilitate interdisciplinary collaboration. Education and training build the foundation among students and young professionals to help tackle the difficult issues in global health security. Multi-sectoral collaboration – the recurring theme of the week – was also echoed greatly in this session, as it is imperative for the next phase of the GHSA to foster strong working relationships between all the players in the health security arena.

The second breakout session I attended was titled *GHSA Technical Area Approaches* and primarily served as a forum for the winners of the Nuclear Threat Institute (NTI)/ NextGen Biosecurity Competition to showcase their proposals and ideas. The winning proposal – submitted and presented by NextGen members Ashley Tseng

and Lyazzat Musralina – supported the establishment of a global, integrated database and glossary of biosecurity resources and tools in support of initiatives to implement and reach Joint External Evaluation (JEE) and GHSA targets. Their proposal highlights a real gap, which must be filled in our community, and seeing my NextGen peers lead a session with their vision for the future was very inspiring.

Overall, this trip was everything I hoped it would be. I had the opportunity to network with some of the brightest, hardest working individuals who solve issues which ultimately impact millions. Those of us in the NextGen community collectively acknowledged that the trip described as “once in a lifetime” will be anything but that. Inspired by our experiences in Uganda, we will continue to pursue our passions and careers solving health problems across the globe, striving for a comprehensive and secure health system, which works for all.

Daniel G. Garcia-Gonzalez, Texas A&M University

Engaging the non-governmental and academic sectors into the next phase of GHSA

When I began to work with a non-governmental organization (NGO) which was based in Colombia to support communities of small-scale farmers 15 years ago, the first lesson I have learned was: “nadie se las sabe todas” which is Spanish for “nobody knows everything”. When you complete your studies at university you feel like you have everything to save the world on your own, however, one of the best places to refute this superhero great intention is working with an NGO. My learning experience there - on how to work and how important is to work in a team - and to develop multidisciplinary and inter-institutional approaches was dramatically important. NGOs are crucial to bringing together all the right hands and bridging the gaps between communities, government, academia and industry sectors, and also to mobilize resources and perform integral and coherent actions. The second two lessons I learned were: “listen and understand the local context before acting” and “do not give fish but teach how to fish”. NGO’s are on the first line and therefore able to establish participatory actions based on the “real reality” of any specific context and to focus on building capacities to develop sustainable actions instead of giving, teach and go. Working now at an academic institution for the past 5 years, has also opened my eyes to how amazingly important this academic sector is in developing individual abilities and capacities, offering expertise and generating accurate, rigorous, qualified and innovative actions and results through research-educational-training processes. Most importantly, when having the opportunity to apply, disclose and adapt science knowledge outside the walls of the university, specifically in capacity building, focusing on infectious diseases research and Biosafety & Biosecurity aspects.

Being part of both academic and-NGO sectors encouraged me to enroll in the Next Generation Global Health Security Network and to participate in attending this specific breakout session at the 4th GHSA High-Level Ministerial Meeting. During the

panel presentation, it was gratifying to listen to all the lessons I have learned in the past, represented on remarkable actions, experiences and contributions of NGO's and academic institutions in Health Security. This reinforced my belief on how essential it is to incorporate all sectors to extend and fulfill the needs of the Global Health Security Agenda (GHSA) for the future. It will be extremely important their participation to motivate, encourage and engage all countries worldwide to participate in the GHSA, to prepare them for Joint External Evaluations (JEE), provide technical support to develop action plans, break down barriers and facilitate multi-sectoral collaborations and coordination in a bottom-up approach way. Further, it is essential to, develop sustainable curriculums and other capacity building activities that can be shared and adapted to any local condition, and contribute to collecting, analyzing and integrating the accurate data to prevent, detect and respond to health threats, among many other contributions. One of the difficulties presented by the panel was that academic institutions are too busy and have difficulty in engaging, but by working together with NGO's will help them to deploy their capabilities and expertise "in the field". These linkages between academia and NGO's are extremely significant to complement actions and leads me to express one of the most important conclusions and reflections of this breakout session summarized in one word: "trust". Building trusted interinstitutional relationships centered on ethics, respect, equity, teamwork, and responsibility is one of the keys to move forward in the next phase of GHSA. I envision contributing, strengthening and developing multi-sectoral trusted engagements, including the NGO's and academic sectors under common objectives to build own and sustainable capacities towards a better world, a world safe from infectious diseases, which is the world that everyone deserves, and is the world that GHSA is contributing to occur.

Dennis Kalibbala -Makerere University, Uganda

It was a pleasure to be part of the "4th Annual Global Health Security Agenda (GHSA) High level Ministerial Meeting", on the theme "Health Security for all: Engaging Communities, Non-Governmental Organizations and the Private Sector". Attending the meeting was an invaluable opportunity, which helped me understand that every country is capable of preventing, detecting and responding to a wide range of health threats and emergencies that carry health consequences.

We should all be committed irrespective of our levels, sectors of governance or communities. We need to build country ownership and engage communities, non-governmental organizations, the private sector, academia and development partners in GHSA.

Persistent is not better than completion, Health risks do not recognize country borders. Early warning, risk reduction and management of national and global health risks are important as ending a war.

Attending the meeting also helped me understand the fact that, health security is not only infectious disease outbreaks. Other risks such as bio-terrorism, food-borne

disease, zoonotic disease, and chemical and radiation accidents can create a devastating impact on all aspects including economic growth and Health.

Our NextGen side meeting also provided a clear understanding that there is need to engage scholars, scientists, and professionals from government and non-governmental institutions into the GHSA and other global health security projects. I believe the network is going to be stronger as it continues to promote the values of Education, Innovation, and Participation to approach and overcome the biggest challenges facing the health security fields today.

After the meeting, we had Site Visits and visited; Uganda Virus Research Institute (UVRI), National animal Diseases Diagnostic and Epidemiology Center (NADDEC) and the Zika Forest. We started from The Zika Forest (a tropical forest near Entebbe) in Uganda. We were told that Zika means, "overgrown" in the Luganda language. The forest is a property of the Uganda Virus Research Institute (UVRI) of Entebbe, it is protected and restricted to scientific research. The forest covers an area of about 25 hectares. The forest has a rich biodiversity in plants and moths, and is home to about 40 types of mosquitoes. The Investigations of mosquitoes at Zika started in 1946 as part of the study of human yellow fever at the Yellow Fever Research Institute. In 1947, the Zika virus was isolated from a rhesus monkey stationed at Zika. We also visited the 36.6-metre (120-ft) steel tower used to study the vertical distribution of mosquitoes since the early 1960s.

Next, we visited the National Animal Disease Diagnostics and Epidemiology Centre (NADDEC)--specifically the Epidemiology unit. As an Epidemiologist, I was allowed to see the data collection, management and reporting systems process. I greatly enjoyed it.

We concluded our site visit session with the Uganda Virus Research Institute. We were told the International Division of the Rockefeller Foundation as a Yellow Fever Research Institute established it in 1936. In 1950, the Institute became the East African Virus Research Institute under the East African High Commission. The same year it was designated as WHO Regional Center for Arboviruses Reference and Research. In 1977 the East African Community collapsed and the Institute was subsequently named the Uganda Virus Research Institute. After the discovery of the Human Immunodeficiency Virus (HIV) in Uganda, research work with collaborators on HIV started in 1987 and in 2009, UVRI became a constituent institute of the Uganda National Health Research Organization (UNHRO), an umbrella organization for health research within the Uganda.

We were also taken through a list of UVRI's milestones and visited the site's different sections like a laboratory and the epidemiology section.

Lastly, I have managed to share all this wonderful experience with my classmates in the Epidemiology and biostatistics masters class. I am so encouraged as the class representative to bring more members on board as an Ambassador for Next Generation Global Health Security Network. Thank You NextGen Network.

Kaisa Lähdepuro, Ministry of Social Affairs and Health, Finland

The meeting of the JEE Alliance

There is a unique window of opportunity to strengthen countries' capacities to prevent, detect and respond to health related hazards globally and thus strive towards the Sustainable Development Goals to which all countries are committed. I have had the opportunity to work in the rapidly evolving health security field through my work at the Finnish Ministry of Social Affairs and Health, one of the many ministries in Finland cooperating on global health security. Finland and Australia are currently co-chairing the JEE Alliance, a multi-partner platform for cooperation among countries, international organizations, non-governmental actors and an umbrella organization representing the private sector. The Alliance aims at facilitating multisectoral collaboration on health security capacity building and International Health Regulations (IHR 2005) implementation. It is separate from the Global Health Security Agenda and other health security focused initiatives but it ensures collaboration and synergies with them.

On 25 October 2017, in the margins of the 4th GHSA Ministerial Meeting in Kampala, Uganda, the Alliance began an important process of setting targets and indicators for health security. The meeting was co-chaired by Mr Robin Davies, Head of Centre, Indo-Pacific Centre for Health Security, Australia and Dr Päivi Sillanaukee, Permanent Secretary, Ministry of Social Affairs and Health, Finland. The co-chairs had circulated a non-paper for the basis of discussion. The proposed guiding principles for developing the targets and associated indicators include to reflect information about key health security outcomes; strike a balance in being ambitious and realistic; not create additional collection or reporting burdens; and promote the multisectoral approach to health security. As the Alliance is not an organization, the targets and indicators are non-binding.

The permanent members of the Alliance Advisory Group (FAO, OIE, WHO, World Bank) provided comments. Dr Rajesh Sreedharan of the WHO Emergencies Programme presented an update on the Joint External Evaluations, national planning, and capacity building process, and underlined the importance of country ownership and leadership. Dr Susan Corning of the World Organisation for Animal Health (OIE) encouraged discussion how the targets and indicators best reflect the Alliance's purpose regarding health security outcomes. Dr Henk Jan Ormel of the Food and Agriculture Organization of the UN (FAO) underlined that One Health should remain at the core of health security capacity building. Dr Patrick Osewe of the World Bank emphasized the importance of the JEE when considering sustainable health security financing.

The co-chairs encouraged members and other stakeholders to provide feedback on the proposed targets and indicators (an invite to give feedback will follow soon). The aim is to present a final paper in the JEE Alliance meeting in 2018. The co-chairs

also encouraged participants to consider and provide feedback on whether the name JEE Alliance reflects the purpose and goals of the group.

The Kampala meeting started an important phase in the Alliance's work on supporting multisectoral collaboration and concrete measures for preparedness and resilience in countries. I am convinced that the global commitment demonstrated in Kampala for strengthening health security as well as the broad expertise and engagement of the Alliance membership pave way for a successful, comprehensive process.

Lyazzat Musralina – Institute of General Genetics and Cytology, Kazakhstan

Ms. Musralina is a scientific researcher in the Population Genetics Lab at the Institute of General Genetics and Cytology, Kazakhstan and consultant of German Technical Cooperation project. She has worked in molecular biology lab including forensic expertise and institutes for nearly ten years, and three years of experience working under the Cooperative Biological Engagement Program with TMC/AECOM/MRIGlobal science team and supporting Cooperative Biological Research Program in Kazakhstan. Ms. Musralina holds a medical biology degree from the Al-Farabi Kazakh National University, as well as a Masters of Science.

The primary goal of the Global Health Security Agenda (GHSA) is to help countries build their capacity to contribute towards a world safe from infectious disease threats and also to elevate global health security as a national and global priority. As the First Place winners in the 2017 Next Generation for Biosecurity in GHSA Competition our team got a chance to attend in the 2017 GHSA Ministerial Meeting, Kampala, Uganda.

This meeting provides an unparalleled opportunity to share experiences in global health security with participating delegates from 41 countries: Ministries of: Health, Wildlife and Antiquities, Agriculture, Animal Industries and Fisheries, Defense, Finance, Foreign Affairs, Internal Affairs, Security, President's Office, Justice and Constitutional Affairs, Trade and Industry, and Labour, Education, Water and Environment and Partners like CDC, WHO, WB, FAO, OIE, USAID, P&R, AFENET, IDI, UNICEF, Johnson&Johnson, and other. The theme of this year meeting is: *Health security for All: Engaging Communities, Non-Governmental Actors, and the Private Sector*.

The session: GHSA's global progress: GHSA achievements, good practices, and challenges started on October 25th at 9:28-10:00.

First speaker, Dr. Youngmee Jee, Director General of Center for Infectious Disease Research, KCDC, and the next speaker – Dr. Neunghoo Park, Minister of Health & Welfare, Republic of Korea presented: GHSA The way forward. A mechanism for collaboration that aims to support countries to develop internationally agreed core capacities for health security such as those required by WHO IHR. Launched in February, 2014 with the participation of 20 countries and various international

organizations (WHO, EU, OIA, FAO, etc.). She also mentioned achievements from 2014-2017 (GHSA was launched in February in Washington DC and Geneva), target strengthening of capacities to respond to infectious diseases and supporting implementation of international Health Regulation, 11 action packages for «Prevent Detect and Respond» formed steering group with 10 countries. 11 Action Packages to 19 focus areas of JEE. I understood how important is GHSA, and JEE to sharing success stories for action packages of countries, Monitoring system for efficient financing of donor countries and what they have learned. Incorporating key priority actions identified during JEE into the National Action Plans by countries and collaborate with global partners to advance the national actions, and to ensure financing to implementation a priority. 59 countries in JEE now.

The Organization Committee planned 3 site visits on 27th of October, and I chose Site 1 which included visit to Zika Forest, Uganda Virus Research Institute (UVRI) and the National Animal Diseases Diagnostics and Epidemiology Center (NADDEC). Number of Interested delegates are 82 (34- Ugandans, 48 – Foreign delegates). We got some information and history about Zika Forest from Dr. Lutwama. Zika Forest is the property of the UVRI, protected and restricted to scientific research which covers an area of about 25 hectares to study of mosquitoes and the diseases that they transmit. The forest has a rich biodiversity in plants, insects and animals, and is home to about 80 species of mosquitoes. Some arboviruses are known to be present in Uganda at one time or another. Over 30% of these were first identified from Uganda.

Later when we divided into two groups one of us visited UVRI first and learned about UVRI from Professor Kaleebu and we ended with a tour of NADDEC. After visiting the UVRI, we learned that UVRI is a Public Health Institute and supports antimicrobial resistance testing in both viruses and bacteria and hosts the national and regional reference laboratory for HIV drug resistance testing. Very high equipped laboratories and specialists trained in Atlanta CDC conduct testing for a wide range of viral and bacterial pathogens including those for viral hemorrhagic fevers, arboviruses, HIV, influenza viruses, plague and anthrax.

The NADDEC is responsible for seven regional veterinary laboratories, veterinary health services has a “structure” for specimen referral from the farmers to the district to the region and to the center. It has been well equipped with capacity for diagnosing animal diseases including zoonotic diseases.

I am very proud to have been a part of 4th edition of the Global Health Security Agenda Meeting and the Next Generation members in Biosecurity. Also I am very thankful for Ugandan hospitalities. We enjoyed not only from the site visit, but also from their food and dancing part organized for us.

Some of the highlights included meeting directors of many Non-Governmental organizations, ministers of 41 countries, DoD officials and the DTRA team, and professors from different Universities. A primary objective is biosafety and biosecurity. GHSA via joint external evaluation (JEE) include country self-assessments, where one country assists another through working level mentorships.

They will be able teach current global health security to next generation professionals. I hope the delegates from my country and the flag of Kazakhstan will be in the next GHSA meeting.

**Emmylin Nabanobe, MPH Student, Makerere University, Uganda.
School of Public Health**

Vulnerable communities and role of security and defense in the Global Health Security Agenda.

Why vulnerable populations? Diseases move with human populations. People move with disease or find disease in host communities hence representing a security and health risk. So how do we manage people moving across boundaries and avoid the disease movements? The Global Health Security Agenda (GHSA) provides a strong framework to address these issues among vulnerable communities, especially communities of internally displaced people (IDPs) and refugees who are most affected by disease and yet have reduced chances of accessing health care. As we continue into the next phase of GHSA, there is a need to expand the definition of vulnerable communities to include poor populations, professionally vulnerable populations, the illiterate and vulnerable livestock.

Based on different country Joint External Evaluations (JEE), gaps were identified at national and community level in many countries in regards to supporting vulnerable populations in the health sector. Knowing this, how can GHSA better detect and respond to the growing needs in these populations;

What kind of strategies can include IDPs and refugees especially in the GHSA key activities?

Country Disaster Management and Refugee Department: One of the major strategies is creating a disaster management and refugee department, which prepares the country for disaster. In Uganda, a country that has received refugees for more than 3 decades, this department is based in the Prime Minister's office. The department collaborates with different sectors (Ministry of Health, Minister of Gender, partners such as UNICEF) to implement strategies appropriate to refugees' challenges. The department's major focus is providing good health and humanitarian support to all these refugees.

Community awareness: The weakest link in the value chain for GHSA is recognition and reach for vulnerable communities. Epidemics and pandemics begin and end in local communities. Communities training on strategies to recognize early warning signs of pandemics. Community health workers' roles need to be recognized incorporated into country surveillance and response systems. If we do not do this, we stand a risk of having late outbreak detections causing disastrous effects, which would have otherwise been managed.

Include IDPs and Refugees during National Planning sessions: As an example, Ethiopia has many vulnerable populations however the country does not consider IDPs and or

refugees during national planning and drafting of national budgets as they only plan for country natives. This has led to increased vulnerability among the population of vulnerable people as health intervention programs such as immunization do not reach people in these communities.

There is need to look at integration of IDPs and refugees as a whole. Countries must assess how they can integrate IDPs and refugees in their country health systems, to encourage a single-system model, in lieu of two parallel systems. The system established should work for all.

Looking beyond health. The health situation in most vulnerable communities is lacking, however aside from health, there are limited facilities such as water sources and land due to high influx of refugees leading to water scarcity and land degradation respectively. Hence, we also need to focus on other areas that will make communities stable despite coexisting with refugees.

Lastly, managing migrations and displacements is another alternative and unless we give these people (vulnerable populations) what they deserve, we risk our own population health and global security. Each country needs to prepare for refugees and IDPs.

Martin Nabwana – Hutchinson Centre Research Institute of Uganda

Martin Nabwana is currently a data coordinator at the Hutchinson Centre Research Institute of Uganda, volunteer Data Manager at Uganda Cancer Institute, and a Master of Science Candidate in Clinical Epidemiology and Biostatistics at Makerere University, Kampala, Uganda.

Firstly, I would like to thank the Next Generation (NextGen) Global Health Security Network (GHSN) for granting us the opportunity to be part of the 4th Annual Global Security Agenda High-Level Ministerial Meeting. I first learned of GHSA when I joined NextGen.

Attending this year's conference helped me understand what GHSA is, why it was formed, their expectations, and more. Every nation has its limitations and challenges which may require the intervention of other countries to curb the problem. Many countries, especially less developed countries (Uganda being one of them), face challenges in areas like health, food, and others; therefore international collaborations are of great importance to our nation.

My attendance in the conference was such a valuable moment in my life and I believe a lot more is in stock for the Next Generation members in global health security. Being a young professional, who is still at the beginning of my career, I was ecstatic when I heard I was in the same vicinity as representatives from the US government and many other nations worldwide. To be able to hear these high-level individuals speak was truly a great honor. I met many great scientists, ambassadors, and country representatives of world organizations like the World Health Organization (WHO), Food and Agriculture Organization (FAO), European Union, and Centers for Disease

Control and Prevention (CDC). The abstracts that I had the opportunity to hear about were extremely powerful and encouraging, especially in the field of epidemiology.

In regard to the site visits, I had the opportunity to visit Ziika Forest and Uganda Virus Research Institute (UVRI) in Entebbe—Kampala, Uganda. UVRI is one of the places I have long desired to visit and work at because of their extensive work in global health, expertise, and organization. It is amazing that even though I am Ugandan, I have never had the opportunity to visit UVRI until the GHSA Meeting. I was not surprised with the quality of work conducted there since I already had high expectations based on my background research on the work they do and their contributions to Uganda and neighboring countries. Given my background in statistics, and now epidemiology and biostatistics, I was so excited about touring the Institute with high-level individuals explaining the different kinds of mosquitoes and diagnostic methodologies at UVRI. The only department that I had desired to reach and have a conversation with was the Epidemiology and Data department, but due to time constraints, we were unable to visit. I nevertheless appreciate NextGen for providing me the opportunity to visit UVRI.

Concerning the Zika forest, it was exciting to hear about the various types of projects that occur there. There is still much to be studied within the Zika forest, making it even more exciting and interesting from a scientific perspective. I realized that what I am learning in the classroom is not only theoretical epidemiology, but also practical epidemiology. I also had the opportunity to visit the Ministry of Agriculture Research Centre in Entebbe, where Ministers and researchers gave us a very warm welcome.

I also learned a lot from the Next Generation side meeting, co-hosted by Dr. Jamechia Hoyle (NextGen Coordinator) and Peter Mooka (East African Working Group Coordinator). I realized there is a lot we can do as Next Generation members to bring about GHSA awareness to our communities. I was overjoyed by the idea of the mentorship program since I believe that NextGen will be the most extensive global health security professional network in the future. I observed that NextGen has many young and energetic professionals who are still at the beginning of their careers in addition to numerous senior professionals who have already contributed greatly to global health security. The NextGen Mentorship Program will help mold young professionals into senior global health security specialists, ensuring the security of our nations in the future.

Susan Nakubulwa - NextGen member, East African Working Group

Extending GHSA beyond 2018 & Sustainable Financing of Global Health Security

This session had two panel discussions which were;

- i) GHSA post-2018: Where do we go from here?
- ii) Making the case for domestic investment and financing strategies for sustainable health security

One of the issues highlighted during this plenary session was that currently, only 61 countries are involved in the GHSA agenda and therefore there is need for more countries, which are members of the World Health Organization, to get on board.

There was an emphasis that GHSA should be owned by nations. Investment in human capital development is still a challenge especially in resource limited countries yet capacity building is key for the GHSA. Public health officials were encouraged to have international partners and have flexible but clear priorities.

Another key highlight was to involve the private sector in GHSA through a three step strategy of engaging, recruiting and partnering. The private sector should be informed and educated about GHSA. For example, a drug company can respond to a disease outbreak by supplying drugs. Also, partnerships can be made with the private sector in developing a vaccine during an epidemic.

The session participants emphasized the need for zoonotic diseases to have an equal budget to other infectious diseases so that nations do not fight a losing battle for the GHSA.

Domestic financing options are important for sustainability of government programs on GHSA. It is crucial for nations to set aside a contingency fund for emergency support when disease outbreaks occur. Although funds are limited in developing countries due to the high population growth, priorities should be made by the health sector to have the contingency fund in place.

With collaboration and planning, financing for GHSA beyond 2018 will be more sustainable and more lives will be saved.

Peter Mooka Next Generation Global Health Security/ Uganda

The 4th GHSA High-Level Ministerial Meeting was held in Kampala with the theme, *"Health Security for All: Engaging Communities, Non-Governmental Organizations, and the Private Sector"*. It was well attended, with representation from all the different sectors under the OneHealth approach. The conference attracted over 41 ministers from different countries, non-governmental organizations, academia, and the private sector to accelerate a world safe and secure from infectious disease threats through prevention, detection, and response to public health threats.

Next Generation members were also in attendance at the ministerial meeting. NextGen had several panel discussions, side sessions, and presentations from different speakers, including the Next Generation Chair Professor Jamechia Hoyle and Dr. Neunghoo Park, Korean Minister of Health & Welfare and current chair of GHSA, about the way forward for GHSA beyond 2018. Topics included:

- Process of JEE Evaluations and developing a better system.
- Multisectoral collaborations
- Partnerships
- Tracking commitments

- Expansion of Steering Group membership

The JEE evaluations have been completed in over 52 countries as of July 21, 2017. Uganda was applauded for completing the JEE process successfully to assess their capacity to prevent, detect, and respond to public health emergencies in the 19 technical areas, using the IHR core capacities. The JEE process is a voluntary process that needs to be embraced by all nations if global health security is to be achieved. The JEE evaluations, characterized by honesty and transparency, enable countries to set their own benchmarks in the different technical areas. This agency better enables countries to establish systems to in line with the IHR guidelines.

The multisectoral approach needs to be adopted across all the sectors by governments in response to public health emergencies. It requires a joint effort of all government ministries ranging from the Ministry of Health, Agriculture, Defence, Environment and Wildlife in collaboration with non-governmental organizations and the private sector to form an effective response team. In my view, the multisectoral approach confers the advantage of each sector being utilized while responding to public health emergencies. For example, I would expect the Ministry of Disaster and Preparedness to take the lead in collaboration with other sectors and stakeholders to address the problem of landslides and not the Ministry of Health.

Partnerships are fundamental if the GHSA objectives are to be achieved globally to address global health security. Expansion of partnerships will be achieved by engaging different stakeholders involved in global health security both locally and internationally. Governments need to partner with other governments, government ministries with other ministries, governments with non-governmental organizations and the private sector. Partnerships form a stronger collaboration that enables access to limited resources by developing countries from developed countries to address public health emergencies.

Tracking commitments was another topic discussed in breakout sessions. Countries that are already GHSA members need to be accountable by publicizing funds utilized for global health security. The practice promotes transparency, effective coordination among the different sectors, and proper allocation of resources. The WHO IHR tool enables the identification of gaps to create mutual understanding of what should be addressed to avoid duplication of fund investment by different investors on the same project. Sharing of success stories about the GHSA experience is also important to provide lessons learnt, which can encourage other nations to become GHSA members.

The steering group for GHSA unanimously agreed to extend the GHSA for five years beyond 2018. The Republic of Korea was the steering group chair, with Canada, Indonesia, Finland and the United States as members. The advisors to member states included the World Health Organization, the Food and Agriculture

Organization of the United Nations, the World Organization for Animal Health, the International Vaccine Institute, and the World Bank. The Republic of Korea will expand its partnership with the United States Agency for International Development, the World Health Organization, and the United Nations Children's Fund to enable effective implementation of the GHSA. The chair of the GHSA encouraged member countries to include the JEE evaluation outcomes in their national planning. He also recommended that the membership of the steering group be expanded and that invitations be extended to countries that have not joined the GHSA membership to ensure global security for all.

The ministerial conference was very good and I enjoyed the discussions across the different sectors. It made a lot of sense why we need a multisectoral collaboration in addressing public health emergencies. Just as the saying goes "Alone I can do little, together we can do much." If all nations join the GHSA membership and embrace the IHR guidelines, then the world will achieve global health security.

Stephen Taylor – George Mason University

Financing, Building, and Evaluating Health Security Capacity at the 4th High Level Global Health Security Ministerial Meeting in Kampala, Uganda

I'm currently a Master of Biodefense Candidate at George Mason University. I came to the program after completing my Bachelor of Science in Biology and serving as a Peace Corps Volunteer for two years in northern Mozambique. I was fortunate to attend the 4th High Level Global Health Security Ministerial Meeting in Kampala, Uganda with the Next Generation GHSA Network.

The GHSA Meeting brought together ministerial officials, private stakeholders, academics, and community leaders from around the world to discuss the future of the Global Health Security Agenda, an all-hazards approach to infectious disease threats that emphasizes robust prevention, early detection, and rapid, effective response. Embedded in this milieu were the Next Generation GHSA Network Representatives, a group of young health security professionals including public health practitioners, policy experts, and laboratory scientists from places as diverse as Uganda, Kenya, Tanzania, Kazakhstan, Pakistan, Canada, and the United States. I was impressed by the receptivity of global leaders to the young professionals in their presence. Next Gen members had ample opportunities, formal and informal, throughout the meeting to speak with people like Dr. Brenda Fitzgerald, CDC Director, Dr. Tim Evans, Senior Director of Health, Nutrition, and Population at the World Bank, and Yoweri Museveni, President of Uganda about the future of health security.

The GHSA meeting heavily emphasized the need to move the burden of health security capacity building beyond the health sector and promote intersectoral cooperation. To this end, the meeting featured multiple sessions on how to rethink health security financing. Ugandan Minister of Finance, Planning, and Economic Development Matia Kasaija emphasized the fact that the World Bank

usually disburses development funds to ministers of finance, who have to disburse limited funds between competing ministries. In order to get ministers of finance onboard to sufficiently fund pandemic preparedness, there must be an intersectoral consensus on its prioritization. Further complicating health security financing, is the fact that it is a multilevel endeavor involving international organizations, the private sector, foundations, countries, and municipalities. The question of how to align messaging to all of these stakeholders to have them appreciate the importance of health security hangs starkly over this nascent field.

The meeting also put a sharp focus on the future of evaluation. The Joint External Evaluations (JEE), developed by the World Health Organization and implemented with support from GHSA countries, are an evaluation tool that provides benchmarks for developing health security capacities and capabilities. At a session of JEE Alliance countries, Susan Corning, Team Leader of the JEE Secretariat, highlighted the importance of setting targets based on robust health outcomes, being both ambitious and realistic, not creating more data reporting burdens, and keeping metrics focused on the GHSA agenda. Dr. Henrick Ornell, Senior Advisor to the Food and Agriculture Organization of the United Nations, pushed back on this final objective, stating that narrowly focused metrics may be alienating. Keeping with the intersectoral tone of the conference, he advised the JEE council to keep a One Health perspective inclusive of human, animal, and environmental issues in the JEE tool in order to keep a greater diversity of stakeholders involved in the GHSA.

In the final plenary session of the GHSA Meeting, the GHSA Steering Committee announced its decision to extend the Global Health Security Agenda through 2024. As an up and coming global health security professional, I was heartened to see such broad-based support for the GHSA initiative across the international community, the private sector, and, closer to home, from the Trump Administration. The Kampala GHSA Meeting was an inspiration for me to work locally to facilitate this global agenda. I'm currently working with Anthony Falzarano, Dr. Jamechia Hoyle, and Dr. Greg Koblentz to establish a chapter of the Next Generation GHSA Network at George Mason University. Together, we hope to foster the same enthusiasm for health security in the Washington, D.C. area that we experienced in Kampala.

Ashley Tseng – McGill University, Canada

I attended the 2017 Global Health Security Agenda (GHSA) Ministerial Meeting in Kampala, Uganda with the primary purpose of presenting a proposal I had submitted for the joint Nuclear Threat Initiative and Next Generation Global Health Security Network competition on Biosecurity in late August. I am completing my fourth year of undergrad at McGill University, majoring in Physical (Health) Geography and minoring in Economics. I am interested in gaining expertise and advanced knowledge in the Global Public Health sector of the professional world, primarily focused on Health Security, seeking to make communities more resilient to epidemics and disasters. I plan to pursue graduate studies in the field of Epidemiology, specifically researching infectious diseases and environmental

health. This year's GHSA meeting theme, *"Health Security For All: Engaging Communities, Non-Governmental Organizations, and the Private Sector"* aligned well with my interests in the cross between global health security, population health, and industry.

Hon. Okello Oryem, the Minister of State for Foreign Affairs of Uganda, was the moderator for the session titled "The business case for investing in GHSA at the country level: How to engage the private sector in contributing to health security for all?" with Dr. Alan Tennenberg, the Chief Medical Officer at Johnson & Johnson Global Public Health as the primary speaker

Dr. Tennenberg began the session by reflecting on his personal experiences in the business sector when attempting to recruit other businesses or organizations in funding GHSA programs. Emphasizing how many local businesses, communities, and organizations may not be familiar with the GHSA, it became clear that he would have to explain what GHSA is to every business he talked to. Why, then, did Dr. Tennenberg continue on his campaign to enlist more and more private sector businesses for the GHSA cause? He understood that there is an importance of scaling up private sector involvement when evaluating and working to improve country standards since, at the end of the day, program implementation is contingent on the availability of funds.

To help support the GHSA, the Private Sector Roundtable (PSRT) mobilizes industry to assist countries in the prevention, detection, and response to health-related crises, while also strengthening systems for health security. The PSRT goes beyond the traditional donation model: it offers technical expertise and brings more to the table than simply financial assistance. Dr. Tennenberg underscored that to better engage the PSRT, we first need to identify the greatest needs to see where and which work streams need improvement. In the PSRT, there are the six working groups: (1) Supply Chain and Logistics, (2) Policy Development & Advocacy, (3) Workforce Development, (4) Partnerships, (5) Technology and Analytics, and (6) Antimicrobial Resistance. The Technology & Analytics Working Group, which is headed by Intel Corporation, recently developed an online application to track and view the Joint External Evaluation (JEE) scoring for each country. The tool is not meant to compare countries, but for countries to look at their scores in detail. The data contained in the detailed JEE reports is now available to be visualized in interactive charts, graphs, and maps, making it easier to compare a country's health security capabilities over time and identify gaps and opportunities for improvement. This tool is just one example of how increased collaboration among sectors (government, research, veterinary, and now private) is accelerating progress substantially and can help countries better achieve their GHSA standards.