Borlaug LEAP- Past Fellows Directory (Spring 2013)

Akuffo Amankwah

Country:
Ghana

University:
Purdue University

Department & Degree:
Agricultural Economics, PhD Candiate

US Mentor institution:
Purdue University

CGIAR Mentor Institution:
International Livestock Research Institute (ILRI)

Research:
Comparative Study of Aquaculture Best Management Practices Adoption in Kenya and Ghana

Email:
aamankwa@purdue.edu

Spring 2013 Borlaug LEAP Alumni Akuffo Amankwah has had a variety of experiences in which he served in a leadership position and, over the years, he has learned as much from his successes as from his failures. Learning from failed actions and facing challenges has had an impact on Akuffo's perspective on leadership. He sees leadership as a collaborative effort to achieve a common societal goal. He considers initiative, objectivity, the ability to delegate responsibilities, and having sufficient knowledge to come up with and rethink strategies as valued traits in a leader. He hopes that his research findings will influence policy not only in his native Ghana but throughout the sub-Saharan African region.

The objective of Akuffo's research was to comparatively study aquaculture technology adoption in fish production involving water reuse and feed nutrient management in ponds among fish farmers in Ghana and Kenya. Fish farmers in these countries are currently being encouraged to use these best management practices (BMP) in order to enhance farm productivity and efficiency of rural aquaculture systems. The study focused on the economic risk levels to farmers and the construction of a spatial econo-metric model to analyze farmer's adoption decisions.

During the Borlaug LEAP fellowship, Akuffo traveled to International Livestock Research Institute (ILRI) in Kenya to work with Dr. Isabelle Baltenweck, who oversaw the data collection aspects of his project. ILRI has been involved in implementing sector-specific policies that are transforming the Kenyan livestock and aquaculture sectors. Akuffo also worked with his US mentor and advisor at Purdue University, Dr. Kwamena Quagrainie, who helped him design analytical tools for the study. Akuffo is looking forward to pursuing work as an Agricultural and Rural Development expert in his home country upon completion of his PhD in Agricultural Economics in 2015.

Assefa Zegeye

Country:
Ethiopia

University:
Cornell University

Department & Degree:
Crop and Soil Science, PhD Candidate

US Mentor institution:
Cornell University

CGIAR Mentor Institution:
International Center for Agricultural Research in the Dry Areas (ICARDA)

Research:
Hydraulic and Geotechnical Control of Gully Erosion in the Ethiopian Highlands

Email:
adz6@cornell.edu

Gully erosion is a major problem in the Ethiopian highlands and loss of soil is a key element in the degradation of Ethiopian farmlands. Borlaug LEAP Alumni Dr. Assefa Zegeye saw his research on gully formation and the erosion process as critical to food security and to the livelihoods of small holder farmers. His research focused on restoration options for stabilizing gully bank erosion caused by subsurface and surface water flow. Any gully rehabilitation plan must deal with the two basic causes of gully formation, seepage and lack of maintenance of installed structures. The goal of Dr. Zegeye's study was to reduce land loss due to gully formation by developing appropriate rehabilitation technologies that are socially acceptable.

Dr. Assefa Zegeye's thinking on leadership has been greatly influenced by the writings of Harwell Thrasher, an Information Technology Executive who spent over 35 years leading IT organizations. Like Thrasher, Dr. Zegeye believes leaders must not only develop a clear vision, but they must also share and communicate that vision to inspire and motivate followers.

Dr. Zegeye was director and researcher at the Adet Agricultural Research Center in the Amhara Region Agricultural Research Institute (ARARI) in Ethiopia before he took a study leave to pursue his PhD at Cornell University. Dr. Zegeye first met his US mentor, Dr. Tammo Steenhuis, Professor of Biological and Environmental Engineering, through Cornell University's Master of Professional Studies program at Bahir Dar University in Ethiopia. Dr. Steenhuis served as chairman on Dr. Zegeye's PhD committee, in addition to being his mentor and advisor. His CGIAR mentor was Dr. Wondimu Bayu, a researcher at ICARDA-Ethiopia. Both mentors supervised his field work and experiments. Dr. Zegeye completed his PhD in Crop and Soil Science in early 2015.

Boniface Massawe

Country:
Tanzania

University:
The Ohio State University

Department & Degree:
Environment and Natural Resources, PhD Candidate

US Mentor institution:
The Ohio State University

CGIAR Mentor Institution:
International Center for Tropical Agriculture (CIAT)

Research:
Digital soil mapping and GIS-based land evaluation for rice production in Tanzania

Email:
bonmass@yahoo.com

Borlaug LEAP Alumnus Dr. Boniface Massawe has been using his skills to train farmers and students for most of his professional life. He also has used his knowledge to develop decision support tools for farmers and policy makers. Currently on leave from his position at Sokoine University of Agriculture (SUA), Dr. Massawe is pursuing his PhD in Environment and Natural Resources at Ohio State University. Upon completing his degree, he intends to return to his home country of Tanzania and to continue to be a leader both in furthering the educational goals of a new generation of agronomic researchers and in his own research.

Dr. Massawe's goal for his PhD research was to develop a model for land evaluation and crop suitability for rice using GIS and predictive soil mapping techniques in Tanzania's Kilombero Valley. The Kilombero Valley is one of the largest seasonal wetlands in East Africa and the Tanzanian government, with technical and financial support from USAID, has targeted the Valley for increased rice production. Dr. Massawe's research is expected to contribute evidence-based knowledge needed to make informed decisions on land resource usability as well as sustainability for rice crops.

Dr. Brian Slater, Associate Professor of Soil Science at Ohio State University, supervised Dr. Massawe's thesis study and provided mentorship both academically and on-the ground in Tanzania. The Borlaug LEAP Fellowship also enabled Dr. Massawe to collaborate with CIAT in Nairobi. His CGIAR mentor, Dr. Leigh Winowiecki, is the East Africa Regional Scientist for Africa Soil Information Service project at CIAT. Dr. Winowiecki helped support Dr. Massawe's research, encouraged collaboration with ongoing research initiatives, and provided analytical backstopping. Dr. Massawe completed his PhD in Soil Science in August 2015.

Dawd Gashu

Country:
Ethiopia

University:
Addis Ababa University, Ethiopia

Department & Degree:
Food Science and Nutrition, PhD

US Mentor institution:
Oklahoma State University

CGIAR Mentor Institution:
International Maize and Wheat Improvement Center (CIMMYT)

Research:
Effect of Micronutrient Status on Health and Metabolism of Children in Ethiopia

Email:
dawdgashu@yahoo.com

While the need for high quality food is essential to proper growth and development in children, it is often inaccessible to many children worldwide. Borlaug LEAP Alumni Dr. Dawd Gashu's research focused on some of the many of the issues resulting micronutrient deficiencies due to the consumption of poor quality, low nutrient-dense foods during his time as a Fellow. While the cause of micronutrient malnutrition is multifaceted, with this "hidden hunger" being particularly acute in Ethiopia, his focus centered on iron, iodine, and selenium deficiencies. His study evaluated the association of these micronutrients to the health, cognitive development, and thyroid metabolism of children under five years old.

During the Borlaug LEAP fellowship, Dr. Gashu traveled to the Oklahoma State University to work with Dr. Barbara Stoecker. He spent six months in Oklahoma training in analytical techniques and working in Dr. Stoecker's state-of-the-art trace element laboratory. His CGIAR mentor, Dr. Moti Jaleta, oversaw Dr. Gashu's analysis of the physicochemical characteristics of the soil and agricultural practices that affect selenium bio-availability in staple crops.
Dr. Gashu's experience at CIMMYT provided an important research link between agriculture and nutrition. He was able to present his research at various conferences and forums, including the 2014 World Micronutrient Forum in Addis Ababa and the 2014 Experimental Biology Conference in San Diego.

Dr. Gashu strongly believes that leadership is not necessarily an inborn quality and there is no inherent obstacle to becoming a leader. According to Dr. Gashu, leadership is a matter of acquiring skills and knowledge, and putting those behaviors into action. Prior to beginning his PhD studies, Gashu was employed as a Lecturer at Addis Ababa University and he has returned to the University as an Assistant Professor at their Center for Food Science and Nutrition. In addition, he serves as a mentor and advisor to several Master's level students. In the past, he has worked in support of the country's Nutrition Program on Human Capacity Development for the alleviation of under-nutrition together with his colleagues, by providing pre-service training in the area of human nutrition to students in the graduating class in the field of agriculture, health, and education. He is currently serving as co-investigator on a project evaluating the protein digestibility and micronutrient bioavailability of complementary foods in

the Amhara, Oromia, Tigray, and SNNP regions of Ethiopia and serves on the national committee that is hoping to establish a national salt iodization facility. Finally, he is also working on a project dealing with selenium (Se) deficiency and viability of soil Se mapping and biofortification, done in conjunction with several international organizations and Universities.

Elfinesh Gebremariam

Country:
Ethiopia

University:
Ankara University, Turkey

Department & Degree:
Plant Pathology, PhD

US Mentor institution:
Washington State University

CGIAR Mentor Institution:
International Maize and Wheat Improvement Center (CIMMYT)

Research:
Identification of Aggressive Strains of Fusarium (Crown Rot Disease) and Screening for Pathogen Resistance

Email:
elfshikur@yahoo.com

Borlaug LEAP Alumni Elfinesh Gebremariam, hopes to serve as a role model for female scientists. Her work as a lecturer and head of the gender office at Dilla University in Ethiopia has given her leadership experience, while her tenure as a production manager at a flower farm emphasized the importance of mutual respect, both for the employees and for the company. Role-modeling, influencing, inspiring others, and respecting the values and expectations of an organization are some of the leadership qualities she appreciates.

Ms. Gebremariam attended Ankara University in Turkey on a scholarship from the Turkish government. Her research focused on identifying aggressive strains of *Fusarium* (crown rot disease) and screening wheat lines for pathogen resistance. Wheat is the second most widely grown cereal in sub-Saharan Africa and Ethiopia. Soil-borne pathogens limit yields and results in high economic losses for farmers. Ms. Gebremariam has returned to Ethiopia, recently completed her research with a broader focus on soil-borne pathogens in general, and is currently writing her thesis, which she hopes to defend this coming summer.

During her Borlaug LEAP fellowship, Ms. Gebremariam worked with mentors from the International Maize and Wheat Improvement Center (CIMMYT) and from Washington State University. At CIMMYT--Turkey, she worked under the supervision of Dr. Amer Dababat, leader in the soil-borne pathogens program at CIMMYT. She learned isolation, identification and pathogenicity of the Fusarium species. As part of her fellowship, she traveled to Washington State University for three months to work with Dr. Michael Pumphrey and a team of experts on Dryland Crown Rot disease, including Dr. Timothy Paulitz, US Department of Agriculture. The

team continues to work collaboratively with the Ethiopian Institute for Agricultural Research and hosts numerous international students in their lab at Washington State. Ms. Gebremariam learned about molecular techniques and methods of evaluation resistance/tolerance during her time at, Washington State University, a world-leader in wheat research. She is currently in Turkey finalizing her thesis and is on track to complete her PhD in Plant Pathology in late 2015.

Elizabeth Okwuosa

Country:
Kenya

University:
University of Nairobi, Kenya

Department & Degree:
Soil Science, PhD

US Mentor institution:
University of Florida

CGIAR Mentor Institution:
International Maize and Wheat Improvement Center (CIMMYT)

Research:
Landscape Management Impacts on Soil Organic Carbon, Gas Fluxes in Smallholder Crop-Livestock Systems in Kenya.

Email:
adaobiokwuosa@gmail.com

2013 Borlaug LEAP Fellow Dr. Okwuosa hopes to empower farmers in Kenya to produce crops for increased food security, improved incomes, and improved environmental sustainability. As a research officer at the Kenya Agricultural and Livestock organization (KALRO) she works with small-scale farmers, particularly women, to develop and disseminate appropriate agricultural technologies. Sher has also worked with the Clinton Climate Initiative on their System for Land-based Emissions Estimation (SLEEK) in her capacity as a soil scientist.

Dr. Okwuosa completed her PhD in Soil Science from the University of Nairobi in Kenya in 2016, where her research focused on evaluating landscape management impacts on soil organic carbon and gas fluxes in smallholder crop-livestock systems in Kenya. She believes that knowledge is key in leadership and a leader must be able to share their knowledge clearly and passionately. During her Borlaug LEAP Fellowship, Dr. Okwuosa worked with Dr. Keith Ingram, Director of the Southeast Climate Consortium at the University of Florida and Dr. Fred Kanampiu, is a senior scientist at CIMMYT in Kenya. He instructed Okwuosa on the current economic and historical dimensions of climate change and crop production

---

Filomena Dos Anjos

Country:
Mozambique

University:
University of Kwasulu-Natal, South Africa

Department & Degree:
Animal Nutrition, PhD

US Mentor institution:
University of Missouri-Columbia

CGIAR Mentor Institution:
International Livestock Research Institute (ILRI)

Research:
Feed Resources for Scavenging Chickens in Southern Mozambique

Email:
anjosmena@gmail.com

Spring 2013 Borlaug LEAP Alumni Dr. Filomena Dos Anjos already had thirteen years experience as a university lecturer in the Veterinary Faculty at Eduardo Mondlane University in Mozambique when she was accepted into the Fellowship. She holds a Doctorate of Veterinary Medicine from the same university, but decided to pursue a PhD to further enhance her research skills. Her PhD thesis was Exploring the Potential of Locally Available Feed Ingredients as Alternative Feeds. With a focus on scavenging village chickens, Dr. Dos Anjos' research paid particular attention to mycotoxins and the evaluation of the efficacy of bentonite clay and diatomaceous earth to mitigate toxic effects. Her goal was to have the results lead to increased productivity of the poultry sector and, ultimately, improved household food security.

Dr. Dos Anjos' career began as the first female extension officer and first veterinarian at the National Directorate of Rural Extension in Mozambique. Her experience as both a team member and leader has helped shape her understanding of leadership. Dos Anjos says her leadership successes have been most rewarding when she shares her knowledge, while still remaining open to listening to other ideas.

Her Borlaug LEAP Fellowship allowed her to travel to the University of Missouri-Columbia to work with Dr. David Ledoux, Professor of Animal Sciences, and his research team. Dr. Ledoux's laboratory is one of the few research laboratories in the world that specializes in mycotoxin research. Her CGIAR mentor, Dr. Siboniso Moyo is an animal scientist with breeding research expertise. Dr. Moyo is the Regional Representative of the International Livestock Research Institute (ILRI) based in Maputo, Mozambique and he provided on-the-ground support and guidance. In addition to her classes, she was responsible for developing a program and a curriculum for a Bachelor's degree course in Animal Production, due to begin in Spring 2016. Dr. Dos Anjos graduated with her PhD in Spring 2015 and is currently involved in a project titled "Improving Village Chicken Productivity to Increase Income and Food Security in Tanzania and Mozambique", who's aim is to improve productivity of village chickens in rural areas, hopefully leading to greater household food security and income generation through adoption of the thermo-tolerant I-2 vaccine, and improved brooding and feeding technologies. The project is funded by the Centre for Coordination of Agricultural Research

and Development for Southern Africa (CCARDESA) through the KYEEMA Foundation (Mozambique), which has extensive experience in improved village poultry production and also the Tanzania Veterinary Investigation Centre.

Gabriel Ddamulira

Country:
Uganda

University:
Makerere University, Uganda

Department & Degree:
Plant Breeding, Genetics and Biotechnology, PhD

US Mentor institution:
University of California, Davis

CGIAR Mentor Institution:
International Center for Tropical Agriculture (CIAT)

Research:
Enhancing Resistance to Angular Leaf Spot in the Common Bean

Email:
ddamuliragab@yahoo.co.uk

Borlaug LEAP Alumni Gabriel Ddamulira wants to help young people connect with agriculture. As a Research Officer at the National Crops Resource Research Institute (NaCCRI) in Uganda, Ddamulira worked with farmers, extension personnel and university students. He has seen first hand the need to attract the next generation to agriculture and solving issues of food security. After completing his PhD, he hoped to share his knowledge and help young scientists develop.

Ddamulira grew up in a poor, rural farming community in Masaka district, Uganda. During his undergraduate and graduate degree studies, he developed a keen interest in crop improvement through disease and pest control. His PhD research is focused on one of the most devastating diseases affecting the common bean, the Angular Leaf Spot (ALS). The disease can cause yield loss of 50 to 80% and has a profound impact on small holder farmers. Ddamulira's research is focused on addressing genetic control through resistant varieties. His study will result in improved bean lines with multiple ALS resistance genes as well as a broad resistance spectrum to other fungal diseases. Such improved bean lines could be used across the region and would have a significant impact on household food security.

For his fellowship, Gabriel Ddamulira worked closely with mentors at the International Center for Tropical Agriculture (CIAT) and the University of California, Davis. Ddamulira conducted his experiments in the laboratories of CIAT-Uganda under the supervision of Dr. Clare Mukankusi Mugisha. Since the research activities will be done at CIAT, the US mentor, Dr. Paul Gepts, also traveled to Uganda to provide oversight and guidance. The results of the study are expected to generate multiple scientific publications and generate information to be used in national disease management strategies, not only in Uganda, but throughout the region. Ddamulira expects to

complete his research and receive his PhD in Plant Breeding and Technology by the end of 2015.

George Tinega

Country:
Kenya

University:
Jomo Kenyatta University of Agriculture and Technology, Kenya

Department & Degree:
Bioinformatics and Molecular Biology, MSc

US Mentor institution:
University of Texas Health Science Center

CGIAR Mentor Institution:
International Livestock Research Institute (ILRI)

Research:
Genetic Diversity of Salmonella Isolated from Pigs

Email:
g_tinega@yahoo.com

Borlaug LEAP Alumni George Tinega believes the most important ingredient for success is to have focus from start to finish. He has applied that philosophy in the pursuit of his Master's degree and fellowship. George recently received his Master's degree from Jomo Kenyatta University in Kenya. His research looked at the genetic diversity of Salmonella, focusing on pig farming systems in Uganda. The results are expected to benefit farmers as well as inform government food safety policies.

For his Borlaug LEAP Fellowship, Tinega worked with a leading expert in bacterial genetics, Dr. Barbara E. Murray, M.D., Director in the Division of Infectious Diseases at the University of Texas Health Science Center at Houston. During the past 30 years, her laboratory has been studying human bacterial infections, antimicrobial resistance and pathogenesis markers. Training at the laboratory provided Tinega with a platform for acquiring state-of-the-art skills in scientific research related to his field of study.

Tinega's training was also supported by his CGIAR mentor, Dr. Delia Grace, Senior Scientist at ILRI. Dr. Grace conducts research in animal health and veterinary public health. One of her major focuses is translating outputs of research into development outcomes. Tinega's research was part of the CGIAR research program on Agriculture for Nutrition and Health.

George is currently a researcher at the Kenya Agricultural Research Institute. Having completed his Master's degree in Bioinformatics and Molecular Biology in 2013, Tinega expects to pursue a PhD in the near future. He sees overcoming the problems of human health at the interface of agriculture as critical to improving human welfare and hopes his work will provide solutions.

Nafeti Mheni

Country:
Tanzania

University:
The Ohio State University

Department & Degree:
Horticulture and Crop Science, MSc Candidate

US Mentor institution:
The Ohio State University

CGIAR Mentor Institution:
International Maize and Wheat Improvement Center (CIMMYT)

Research:
Genome-wide Analysis of Heading Date and Maturity in Wheat

Email:
mheni.1@buckeyemail.osu.edu

Borlaug LEAP Alumni Nafeti Mheni believes that one of the most important abilities a leader can have is good communication skills. Farmers and scientists require different communication styles and Mheni has worked to develop skills to bridge the gap between the two groups. Gaining the trust of the community is critical to successful leadership and Mheni notes that leading by example is key.

Mheni's research addressed some of the important issues in the seed industry by using modern breeding techniques to efficiently provide farmers with stress-avoiding and stress-tolerant crop varieties. The study was focused on wheat and he hopes the varieties he worked on will be used in Burundi, Kenya, and Ethiopia as well as Tanzania. His Borlaug LEAP Fellowship allowed Mheni to include International Maize and Wheat Improvement Center (CIMMYT) wheat in his study. He was mentored by Dr. Sukhwinder Singh, a senior scientist on the Wheat Lead for Seed Discovery Initiative at CIMMYT. Dr. Singh believes that training wheat breeders in cutting-edge breeding methods is a cornerstone for Africa's self-sufficiency in wheat and was happy to play a part in Mheni's fellowship. Mheni's US mentor and advisor, Dr. Clay Sneller, Associate Professor at Ohio State University, has over 28 years experience in genetics research and crop variety development.

Mheni has been employed since 2007 by the Tanzanian government's Selian Agricultural Research Institute (SARI), and took study leave to pursue his Master's of Science in Horticulture and Crop Science from Ohio State University. Upon completing his Master's degree in Horticulture and Crop Science in 2013, he returned to SARI where he plans to use his leadership skills to influence breeders, educate people, and build teams to achieve the goals of Tanzania.

Borlaug LEAP- Past Fellows Directory (Fall 2013)

Alemayehu Assefa

Country:
Ethiopia

University:
Haramaya University, Ethiopia

Department & Degree:
Agronomy, PhD Candidate

US Mentor institution:
University of Nebraska, Lincoln

CGIAR Mentor Institution:
International Maize and Wheat Improvement Center (CIMMYT)

Research:
Unlocking the Potential of Maize-Legume Intercropping Systems

Email:
alemayehuassefa03@yahoo.com

2013 Borlaug LEAP Alumni Alemayehu Assefa has over 20 years experience as an agronomist and has held positions of increasing responsibility at the Adet Agricultural Research Center in Ethiopia. Over the years, Assefa has seen the challenges he faced as a leader as opportunities to learn and grow. Fostering relationships, being objective, and communicating clearly are critical, Assefa believes, to good leadership.

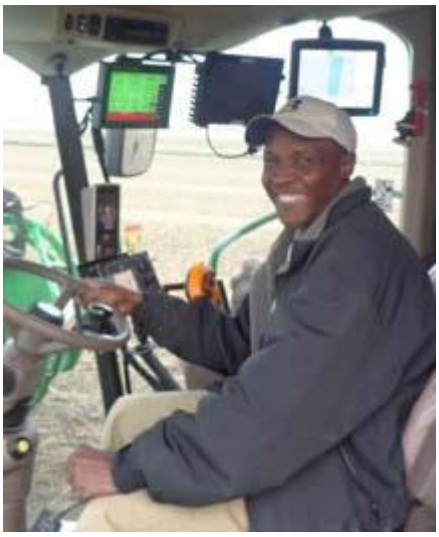
In 2011, Assefa began pursuing a PhD in Agronomy at Haramaya University in Ethiopia. His research focused on sustainable intensification of maize under small-scale farming systems in the most degraded and infertile agro ecology of the country. His project investigated the potential of maize-legume cropping systems in northwestern Ethiopia. Maize-legume inter-cropping systems offer advantages from improved soil fertility to increased productivity. His research is important to smallholders in Ethiopia and will be applicable to other countries in the region with similar systems.

During his fellowship, Assefa traveled to University of Nebraska, Lincoln (UNL) to work with Dr. Charles Wortmann, Professor of Agronomy. Assefa worked with a crop modeling expert at UNL to strengthen his skills in integrating model use with field research, particularly tackling cropping system problems and anticipating increased climate variability. He also took advantage of his time in the US corn belt to learn more about other agricultural systems. This was his first trip to the US.

Dr. Kindie Tesfaye, a scientist at the International Maize and Wheat Improvement Center (CIMMYT) – Ethiopia, supervised his field research and provided guidance in data collection and overall management of the experiment in the field. Both mentors provided advice in the analysis of data from Assefa's thesis research.

Alemayehu Assefa is currently back in Ethiopia and working on his thesis and is planning to publish journal articles based on his research. He expects to complete his PhD by the end of 2015.

Assoumane Maiga



Country:
Mali

University:
Oklahoma State University

Department & Degree:
Agricultural Education & Communications, PhD

US Mentor institution:
Oklahoma State University

CGIAR Mentor Institution:
International Institute of Tropical Agriculture (IITA)

Research:
Evaluating Communication Strategies and the Role of Mass Media in Disseminating Agriculture-related Information to Farmers in Post-conflict Nations

Email:
maiga@okstate.edu

Until 2009, Assoumane Maiga was an English professor in his native Mali. His experiences as a translator for field researchers led to active participation in research activities on child trafficking in agriculture. This, in turn, led to his career transition and interest in agricultural communications strategies. After receiving a Fulbright Scholarship, Mr. Maiga left his English teaching job and attended Oklahoma State University (OSU), earning a Master of Science degree in Agricultural Communications. He then pursued a PhD at OSU in Agricultural Education with a focus on Communications. His research was focused on evaluating communication strategies and the role of mass media in disseminating agriculture-related information to farmers in the post-conflict nations of Mali and Cote d'Ivoire. He hopes the results of his research can help governments develop policies and sustainable communication strategies for rural areas in sub-Saharan Africa.

During his fellowship he worked closely with Dr. Craig Edwards, Professor of Agricultural Education at Oklahoma State University (OSU) and Dr. Ousmane Coulibaly, Senior Agricultural Economist at IITA in Benin. Once he has completed his doctoral degree, Mr. Maiga intends to support the establishment of departments of agricultural education, extension, and communications in universities in Mali and elsewhere in West Africa. He has seen firsthand how important communications and communicators are to rural farmers in a time of crisis and the role communication can play in mitigating the effects of conflict. He completed his PhD in 2015 and is currently back in Mali as a professor advisor for the National Head Office of Pedagogy at the Ministry of Education. His most recent research focused on the capacity building needs of community-based organizations, agricultural value chains in the context of Mali, strategic agricultural communications in a post-conflict context, and food security.

Bonphace Mangeni

Country:
Kenya

University:
Masinde Muliro University of Science and Technology, Kenya

Department & Degree:
Plant Virology, MSc

US Mentor institution:
Michigan State University

CGIAR Mentor Institution:
International Center for Tropical Agriculture (CIAT)

Research:
Distribution and Virulence of Bean Common Mosaic Virus (BCMV) on Phaseolus vulgaris, in Western Kenya

Email:
mangeniboniface@yahoo.com

Since graduating with his Bachelor's degree from the University of Nairobi, Bonphace Mangeni has been a high school Biology and Chemistry teacher in Kenya. His year as a high school teacher taught him to work and lead students diplomatically. After that year, he took time to pursue his Master's degree in Plant Virology from Masinde Muliro University of Science and Technology in Kenya, with the aim of becoming a professional agricultural researcher and professor.

His research was focused on distribution and crop protection against the Mosaic Virus on the Bean (*Phaseolus vulgaris L*). The virus has affected many farmers and bean production has been steadily declining. While the rate of disease is very high and the crop considered a staple of Kenya, the disease has not been studied extensively. The bean (*Phaseolous vulgaris L*) is among the most important food legume crops in Kenya and this research will hopefully contribute to increased food security in the country and in Africa in general.

During his fellowship, Mr. Mangeni worked with Dr. Mathew Abang, a Senior Research Scientist at the International Center for Tropical Agriculture (CIAT) – Uganda and Dr. James Kelly, Professor at Michigan State University. His CGIAR mentor, Dr. Abang, is the Pan Africa Bean Research Alliance (PABRA) coordinator and he supervised all of Mr. Mangeni's survey activities on beans in Western Kenya. Mr. Mangeni will also conduct virus transmission experiments for bean common mosaic virus (BCMV) on known indicator plants, using the greenhouse and lab facilities at Michigan State University, under the supervision of Dr. Kelly.

Mr. Mangeni hopes to make an impact in his region, Western Kenya. He feels Kenya needs more researchers who are trained internationally and he viewed his Borlaug LEAP fellowship as an opportunity for self-study, training, and networking. He sees a leader as someone who takes responsibility and motivates other individuals. Mr. Mangeni completed his master's degree in 2014 and is currently a PhD student in Crop Protection at Masinde Muliro University of Science and Technology, as well as a lecturer and research associate.

Didier Kadjo

Country:
Ivory Coast

University:
Purdue University

Department & Degree:
Agricultural Economics, PhD Candidate

US Mentor institution:
Purdue University

CGIAR Mentor Institution:
International Institute of Tropical Agriculture (IITA)

Research:
Effects of Storage Losses and Market Imperfections on Smallholders' Grain Management: An Evidence of Maize Production in Benin

Email:
dkadjo@purdue.edu

Didier Kadjo began his Borlaug LEAP Fellowship in September 2013. After receiving his Bachelor's degree in Engineering and Agricultural Economics in his home country of Cote d'Ivoire, Mr. Kadjo had the opportunity to bridge research and policy implementation by working in the National Unit of Cooperation with the European Union (EU) of the Prime Minister Office. He won a scholarship from OFID to pursue a Master's degree in Agricultural Economics at Purdue University and, having completed his MS, is now enrolled as a PhD student in the Department of Agricultural Economics at Purdue. His thesis is focused on investigating the effects of storage losses and market imperfections on household grain management, specifically maize production in Benin. Mr. Kadjo believes that research tends to focus on productivity, but high productivity without the ability to manage often proves futile. Post-harvest losses undermine the benefit of improved production technology because farmers lose market incentives. He hopes his research will provide new perspectives that will spark action not just in Benin, but in all of West Africa.

During his fellowship Mr. Kadjo traveled to Nigeria to work with his CGIAR mentor, Dr. Abdoulaye Tahirou, an economist at International Institute of tropical Agriculture (IITA) and to Benin to conduct fieldwork. Mr. Kadjo had the opportunity to network with private sector, government, and small-scale farmers as he collected data for his study. His US mentor, Dr. Jacob Ricker-Gilbert is an assistant professor of Agricultural Economics and he helped oversee Mr. Kadjo's research plan. After Mr. Kadjo completes his PhD, which he hopes to do by mid-2016, he plans to work in intergovernmental agencies and become involved in the formulation and implementation of development policies. He is committed to transforming smallholders from sub-Saharan Africa into food- and income-secured farmers.

Esther Nampeera

Country:
Uganda

University:
Jomo Kenyatta University of Agriculture and Technology, Kenya

Department & Degree:
Plant Health Sciences and Management, PhD Candidate

US Mentor institution:
Iowa State University

CGIAR Mentor Institution:
Bioversity International

Research:
Effect of Botanical Pesticides on Nutrient Content, Physiological Quality, Leaf Miner Damage, Growth and Yield of Selected Amaranths Varieties in Kenya.

Email:
nampeerae@yahoo.com

Esther Nampeera is on study-leave from Uganda's National Agricultural Research Organization (NARO) where she is a Senior Research Assistant. Throughout her career, she has led numerous research teams, coordinated community-based research projects, and worked extensively with farmer's groups. Ms. Nampeera is now pursuing a PhD program at Jomo Kenyatta University of Agriculture and Technology in Kenya.

Nampeera believes a leader is able to organize, motivate, communicate, respect others, and lead by example. While she knows her title and position will give her some credibility, she does not believe it will make her a leader. Her goal is to be in a position of responsibility that will help her to have an impact on Uganda and Africa. In April 2015, she had the honor of serving as a Next Generation Delegate at the Chicago Council on Global Affairs' Global Food Security Symposium, where she invited to serve as a representative of both her university and her country.

Ms. Nampeera's thesis research is looking at the effects of pesticides on Amaranthus varieties. Amaranth provides a nutrient-dense crop in sub-Saharan Africa; it is adapted, culturally acceptable, and is used in the diet and culture of East Africa. The research will be very important in generating and advancing scientific knowledge on an indigenous food crop that is increasingly consumed. She plans to finish her PhD in Plant Health Sciences and Management in 2016.

Kadeghe Fue

Country:
Tanzania

University:
University of Florida

Department & Degree:
Agricultural and Biological Engineering, MSc

US Mentor institution:
University of Florida

CGIAR Mentor Institution:
International Crops Research Institute for Semi-Arid Tropics (ICRISAT)

Research:
Development of Precision Irrigation Control System for Horticultural Food Crops in Northern Tanzania

Websites:
Kadeghe Fue: iAgri Research video

Email:
kadefue@sua.ac.tz

2013 Borlaug LEAP Fellow, Kadeghe Fue, took study leave from Sokoine University of Agriculture in Tanzania to pursue his Master's degree in precision agriculture and information systems at the University of Florida. He was sponsored by iAGRI under the USAID Feed the Future initiative. In 2013 he received the Borlaug LEAP fellowship which gave him the opportunity to work with mentors Dr. John Schueller of the University of Florida, and Dr. Karuturi Rao of the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT). Mr. Fue received the Pan African Conference on Science, Computing, and Telecommunications (PACT) 2014 best student paper award for his paper entitled "A Solar-powered, WiFi Re-programable Precision Irrigation Controller".

Mr. Fue's interests include precision agriculture and variable rate technology. His research looked at the applicability and advantages of modern precision agriculture technology for local farmers in Tanzania. He has also published several scientific papers in ICT and applications of computers in agriculture. In addition, he consults on software systems development and electronic control systems development for public and private companies. He has developed several software systems used at the Sokoine and other institutions.

Mr. Fue received his Bachelor of Science with honors at University of Dar es Salaam. He joined the academic staff at Sokoine University of Agriculture in 2011 and taught several courses in computer programming, geoinformatics, and microcomputer systems. After Mr. Fue completed his Master's degree at University of Florida in 2014, he returned to Sokoine University of Agriculture as an Assistant Lecturer to teach and do research in software engineering and agro-informatics. He continues to supervise and mentor students in information systems development and precision agriculture.

Mr. Fue is a graduate engineer member of the Institution of Engineers Tanzania and the American Society of Agricultural and Biological Engineers. He specializes in applications of computers and electronics in agriculture, especially in area of precision agriculture, e-agriculture and software systems engineering.

Kelvin Kamfwa

Country:
Zambia

University:
Michigan State University

Department & Degree:
Plant Breeding, Genetics and Biotechnology, PhD Candidate

US Mentor institution:
Michigan State University

CGIAR Mentor Institution:
International Center for Tropical Agriculture (CIAT)

Research:
Genome-wide Association Analysis for Biological Nitrogen Fixation in Common Bean (Phaseolus vulgaris)

Websites:
Interview: Des Moines Register, "Better Seed Equals Better Life"

Email:
kamfwake@msu.edu

Kelvin Kamfwa is a lecturer at the University of Zambia on study leave to pursue his PhD in Plant Breeding, Genetics and Biotechnology at Michigan State University (MSU). His research is looking at genome-wide association analysis for biological nitrogen fixation in common beans. His work is aimed at identifying superior germplasm, QTL, and genes for nitrogen fixation in common beans. Through his Borlaug LEAP fellowship, Kamfwa had the opportunity to conduct a field trial at International Center for Tropical Agriculture (CIAT)-Columbia under the supervision of Dr. Bodo Raatz, a breeder at CIAT. Dr. Raatz will oversee the phenotypic analysis. His US mentor, Dr. James Kelly, Professor at MSU, oversaw his research and data collection in Zambia. The team worked closely with Mr. Kennedy Muimui, Bean Program Leader at the Zambia Agriculture Research Institute (ZARI), who supervised the in-country field trials.

Mr. Kamfwa believes breeders should use all the tools at their disposal including biotechnology. To increase the acceptability of genetically modified crops in Africa, there is need to work on traits that are more relevant to the farming systems in Africa including drought tolerance. He feels this technology could potentially play a critical role in addressing the food deficits in Africa. Once Mr. Kamfwa completes his PhD, he will return to the University of Zambia and continue the breeding program he started before he left. He expects that the skills he has acquired and the networks he has created during his PhD studies and fellowship will

enable him to take leadership in the expansion and growth of graduate training and research in plant breeding and seed systems at the University of Zambia. Mr. Kamfwa's plan is to complete his research and dissertation and defend his thesis by the end of 2015.

Lilian Okiro

Country:
Kenya

University:
Jomo Kenyatta University of Agriculture and Technology, Kenya

Department & Degree:
Agricultural and Environmental Biotechnology, MSc

US Mentor institution:
Cornell University

CGIAR Mentor Institution:
International Potato Center (CIP)

Research:
Detection of Two Important Potato Diseases (Ralstonia solanacearum and Dickeya solani) Species by Loop Mediated Isotherm Amplification.

Email:
lilyokiro@yahoo.com

Former 2013 Borlaug LEAP fellow Lilian Okiro is currently pursuing a PhD in Plant Biotechnology at Egerton University where she works as a Senior Laboratory Technologist. Her dissertation research focuses on potato resistance to bacterial wilt disease as a continuation of her R. solanacearum research.

As a fellow, she worked on her Master's of Science in Biochemistry from Jomo Kenyatta University of Agriculture and Technology, Kenya. Her Masters thesis research aligned well with the priorities of ensuring food security through the use an alternative amplification method that could be used in the field to facilitate plant pathogen detection without specialized equipment hence drastically reducing the cost of testing. Therefore, the assay could easily be adapted by national plant protection organizations and seed programs in developing countries such as Kenya.

During her fellowship, Ms. Okiro spent two months at the Cornell University Agricultural Research Station working with Professor Christine Smart, an expert in vegetable pathology and the molecular basis of plant pathogen interactions. Ms. Okiro took advantage of her time at Cornell University by attending weekly seminars and departmental graduate meetings at the facility and learning from other graduate students and scientists doing their research at the research station.

Dr. Monica Parker, a plant pathologist at the International Potato Center (CIP), served as Ms. Okiro's CGIAR mentor. She supervised Ms. Okiro's work in the validation of the Loop Mediated isothermal Amplification (LAMP) assay and field sampling portion of her research conducted in

Kenya. Dr. Monica provides complementary expertise on potato diseases that will enhance the research results.

Ms. Okiro believes that the Borlaug LEAP fellowship allowed her to enhance her leadership skills by giving her an opportunity to work with scientists at CIP and Cornell. She also feels the fellowship helped improve her personal leadership skills by learning and observing how others in internationally recognized institutions lead, and increased her scientific network. She hopes that her research will, in the end, create an impact by providing a robust and cost effective diagnostic tool that could be employed to detect plant pathogens in the field.

Mawazo Shitindi

Country:
Tanzania

University:
Tuskegee University

Department & Degree:
Plant and Soil Sciences, PhD Candidate

US Mentor institution:
Tuskegee University

CGIAR Mentor Institution:
International Institute of Tropical Agriculture (IITA)

Research:
Developing and Integrative Soil Fertility Management Package for Improving N and P Use Efficiency Under Smallholder Maize Production in the Eastern Zone of Tanzania

Email:
shitindimj@yahoo.com

{No Bio}

Oluwaseun Kolawole

Country:
Nigeria

University:
University of Ibadan, Nigeria

Department & Degree:
Microbiology, PhD Candidate

US Mentor institution:
University of Florida

CGIAR Mentor Institution:
International Institute of Tropical Agriculture (IITA)

Research:
Evolutionary Genomics of Phtophthora megakarya, the Major Cause of Black Pod Disease of Cocoa in Nigeria

Email:
frenxymails@yahoo.com

Former 2013 Borlaug LEAP fellow Oluwaseun Kolawole is enrolled at the University of Ibadan, Nigeria, pursuing his PhD program in the Department of Microbiology. His thesis research aligns well with the priorities of the Cocoa Research Institute of Nigeria where he is employed as a full-time research officer. Mr. Kolawole is investigating the evolutionary genomics of *Phytophthora megakarya,* the major cause of black pod disease of cocoa in Nigeria. The disease causes large loses to farmers and Mr. Kolawole is working to further understand the *Phytophthora* pathogen and the epidemiology of the black pod disease, which will allow for an informed selection of disease resistance sources for breeding cocoa with resistance to *P. megakarya.*

During his fellowship, Mr. Kolawole traveled to University of Florida to work with Dr. Erica Goss, an assistant professor with expertise in population genetics and molecular evolutionary analysis of plant pathogens. He took advantage of his time at the University of Florida by attending weekly seminars, visiting the UF Tropical Research and Education Center in South Florida, and attending the Annual Meeting of the American Phytopathological Society.

Dr. Ranajit Bandyopadhyay, a plant pathologist at the International Institute of Tropical Agriculture (IITA), served as Mr. Kolawole's CGIAR mentor. He supervised the microbiological and epidemiological portion of the research that was conducted in Nigeria and provided complementary expertise that helped enhance the research results.

Mr. Kolawole feels that leaders should be self-aware and understand what they are capable of accomplishing. A leader must have foresight and take risks to accomplish goals. According to Mr. Kolawole, good leaders are strong, self-confident, and decisive, but still humble enough to accept suggestions and constructive criticism. Once Mr. Kolawole completes his PhD, he hopes to be in a position to influence policy and effect change in his home country of Nigeria. He is passionate about becoming an agent of change in helping to transform the current research culture and to help promote innovation. Mr. Kolawole is currently at at the

University of Florida, where he is studying as a visiting scholar while working on completing his PhD in Plant Pathology. He hopes to complete it by the end of 2015.

Taye Alemayehu Hulluka

Country:
Ethiopia

University:
Addis Ababa University, Ethiopia

Department & Degree:
Water Resources Engineering & Management, PhD Candidate

US Mentor institution:
University of Connecticut

CGIAR Mentor Institution:
International Water Management Institute (IWMI)

Research:
Anthropogenic and Climate Variability Impacts on the Hydrologic/Hydrogeologic Systems of Baro Akobo Basin, West Ethiopia

Email:
altay2121@gmail.com

For former 2013 Borlaug LEAP Fellow, Taye Alemayehu Hulluka, a visit to an UNESCO Heritage Site, where he noticed an alarming change in water flow, had a profound impact and influenced him to pursue hydrologic research. Alemayehu enrolled as PhD student at the Ethiopian Institute of Water Resources, Addis Ababa University in 2011. His PhD research addressed one of Ethiopia's top challenges in dealing with food security and water resource development. Specifically, his study aimed to unravel the impacts of land use change and climate variability on hydro-geologic and hydrologic systems of the Baro Arkobo basin in Ethiopia.

Mr. Alemayehu used his Borlaug LEAP Fellowship to get hands-on training in geophysical, hydrological and geo-statistical methods. He spent five months working with Dr. Lanbo Liu, a Civil and Envirnmental Engineering professor at the University of Connecticut. Through his mentor, Alemayehu also had access to US Geological Survey (USGS) facilities.

In Ethiopia, Mr. Alemayehu worked with Dr. Alemseged Tamiru Haile at the International Water Management Institute (IWMI). Dr. Haile is a researcher with a specialty in spatial hydrology and geo-information science. He provided guidance on hydrological modeling, impact assessment of climate change on water resources systems and potential applications of satellite remote sensing.

Mr. Alemayehu feels leadership starts at home, with being a good husband and father. He thinks leaders should lead by example and aspire to be role models not only on a personal level, but on a professional level as well. After earning his PhD, which he plans to complete in 2015, he hopes to pursue a career as a professor. He feels that researchers, academics, and

developers don't often work together and he wants to create links between those two groups in order to foster better communication.

Zennah Kosgey

Country:
Kenya

University:
Egerton University, Kenya

Department & Degree:
Plant Breeding, MSc

US Mentor institution:
North Dakota State University

CGIAR Mentor Institution:
International Maize and Wheat Improvement Center (CIMMYT)

Research:
Mapping and Evaluation of Genes /QTL for Stem Rust (Puccinia graminis f.sp. tritici) Resistance in a Comprehensive Panel of Kenyan Bread Wheat (Triticum aestivum L.) Germplasm.

Email:
zennahk@gmail.com

Former 2013 Borlaug LEAP fellow Zennah Kosgey completed her Masters degree in Plant Breeding at Egerton University in her native Kenya in 2014. Prior to beginning her studies, Kosgey had been working on the Durable Rust Resistance Wheat (DRRW) project at the Kenya Agricultural Research Institute (KARI) in Njoro, and she took a study leave to pursue her degree.

For her Borlaug LEAP Fellowship, Kosgey traveled to North Dakota State University to work with Dr. Maricelis Acevedo, a specialist in wheat rust pathology. It was her first time traveling to the United States. Ms. Kosgey's research focused on the mapping and evaluation of genes /QTL for stem rust (*Puccinia graminis f.sp. tritici*) resistance in a comprehensive panel of Kenyan bread wheat (*Triticum aestivum L.*) germplasm. Her CGIAR mentor was Dr. Sridhar Bhavani, a leading expert in wheat pathology and breeding at CIMMYT.

After graduating, Ms. Kosgey briefly returned to KALRO to complete some of her research and is currently a PhD student and BHEARD Fellow at the University of Minnesota, in their Plant Pathology Department, where she continues to research wheat stem rust disease resistance.
