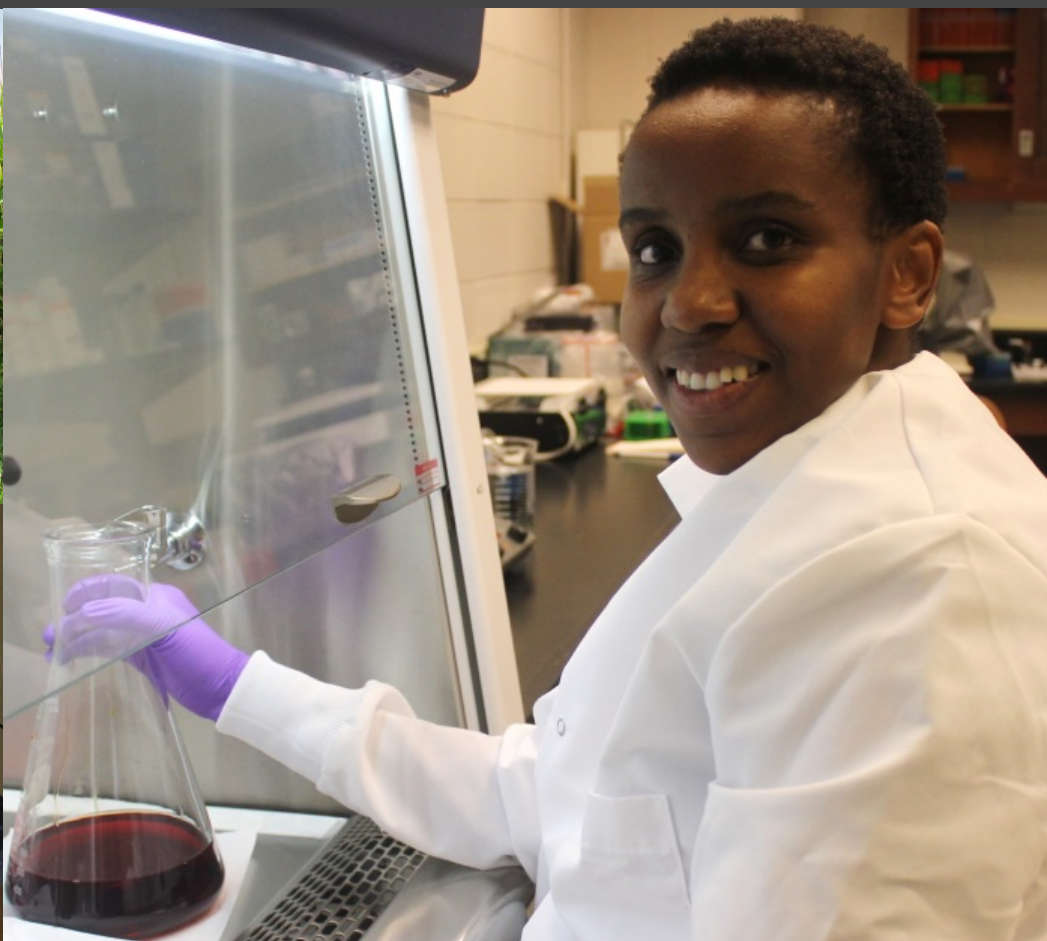


# Annual Report

## 2015



**THE OHIO STATE UNIVERSITY**

COLLEGE OF FOOD, AGRICULTURAL,  
AND ENVIRONMENTAL SCIENCES





# **THE OHIO STATE UNIVERSITY**

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COLLEGE OF FOOD, AGRICULTURAL,  
AND ENVIRONMENTAL SCIENCES

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# Mission Statement

The mission of the Office of International Programs in Agriculture is to support the globalization efforts of the college by engaging Ohio State faculty and students in international research, outreach, and learning. Employing the land grant model, we work with international partners to build capacity in sustainable agriculture throughout the world and to increase competitiveness at home.

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# Introduction

The [Office of the International Programs in Agriculture](#) was established in 1955 to foster international outreach and engagement in the College of Food, Agriculture, and Environmental Sciences at The Ohio State University.

## What we do....

We promote global opportunities within the College, with an emphasis on the developing world, by...

... assisting faculty and researchers with the submission and administration of international grants and contracts,

... managing short-term scientific exchange programs for international visitors and scientists,

... implementing degree programs for international graduate students,

... supporting recruitment efforts for the Peace Corps on Ohio State's campus,

... coordinating the writing and approval of memoranda of understanding between college units and international institutions,

... and guiding the placement of international students in internships within the private sector.



[www.cfaes.osu.edu/international](http://www.cfaes.osu.edu/international)



200 Likes



435 Followers



21 Followers

## Who we work with....

- Administrators, faculty, staff, and students in the College of Food, Agricultural, and Environmental Sciences, the Ohio Agricultural Research and Development Center, and Ohio State University Extension
- Office of International Affairs, Area Study Centers, and Global Gateway Offices
- Office of Research
- College of Veterinary Medicine, College of Education and Human Ecology, Fisher College of Business, and other Ohio State academic departments and units
- United States Department of Agriculture
- U.S. Agency for International Development (USAID)
- USAID Missions and U.S. Embassies
- Strategic International Partners and Higher Education Institutions
- Other U.S. Land Grant Universities
- Association of Public and Land-grant Universities (APLU), Association for International Agriculture and Rural Development, and Association for International Agricultural and Extension Education.

# Office of International Programs in Agriculture

## Staff

### **Director:**

Dr. J. Mark Erbaugh

### **Assistant Director:**

Dr. Michael Chrisman

### **Program Managers:**

Dr. David Hansen

Mr. Michael O'Keeffe

Ms. Wendi Howell

Mr. Beau Ingle

### **Peace Corps Coordinator:**

Ms. Gail Messick

### **Office Associates:**

Ms. Pat Rigby

Ms. Lisa Li

### **Administrative Associate:**

Mr. Fabrice Ligny

### **Grants & Contracts Specialist**

Mr. David Mackie

### **Program**

#### **Assistants:**

Mr. John Beardmore

Mr. Grzegorz Lecki

Ms. Anna Matwijow

Mr. Yining Zhang

## Advisory Committee

### **Macdonald Wick**

Associate Professor

Animal Sciences

### **Valente Alvarez**

Professor

Food Science and Technology

### **Steve Neal**

Assistant Dean

Academic Programs

### **Luis Canas**

Associate Professor

Entomology

### **Sally Miller**

Professor,

Plant Pathology

### **Scott Shearer**

Professor and Chair

Food, Agricultural, and Biological Engineering

### **Brian Slater**

Assistant Director and Associate Professor  
, Environment and Natural Resources

### **Jeff LeJeune**

Professor and Director

Food Animal Health Research Program

### **Kelly Newlon**

Director

CFAES Study Abroad

### **Kristin Mercer**

Assistant Professor

Horticulture and Crop Science

### **Brent Sohngen**

Professor

Agricultural Environmental and Development Economics

### **Jeff Hattey**

Assistant Dean

Academic Programs

### **Ken Martin**

Chair and Associate Director  
Extension

### **Jamie Cano**

Associate Professor

Agricultural Communication, Education, and Leadership

# A Global Glimpse of CFAES Engagement in 2015

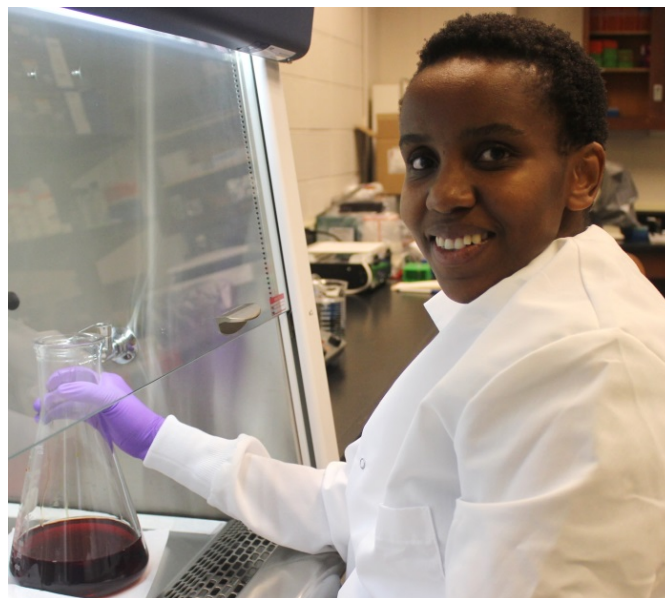
- 29 International Memoranda Understanding with institutions in 17 countries
- 213 International students enrolled
- 15 International delegations welcomed from 10 different countries in 2015
- 246 Undergraduate students participated in 12 CFAES Study Abroad Programs
- 20 CFAES courses with an international dimension
- 4<sup>th</sup> Ranked institution in the U.S. in the number of active Peace Corp volunteers
- 415 International interns placed with U.S. agribusinesses or organizations
- 50 + CFAES faculty engaged in more than 67 countries around the world
- 6 Distinguished USDA Borlaug Fellows hosted in 2015



*"A Global Reach.....A Global Impact"*

The Innovative Agricultural Research Initiative (iAGRI) is a \$25.5 million *Feed the Future* project funded by the United States Agency for International Development (USAID) and is managed by the Office of International Programs and Agriculture at The Ohio State University (OSU), which coordinates its management activities with the Project Management Unit located at the Sokoine University of Agriculture (SUA) in Morogoro, Tanzania. iAGRI was launched in March 2011 as a five-year project. In May 2015, it was extended to a total of six years, enabling OSU and other participating U.S. land-grant universities to continue the critical capacity-building efforts with their institutional partners in Tanzania -the Sokoine University of Agriculture (SUA) and the Ministry of Agriculture, Livestock, and Fisheries.

Ohio State CFAES staff involved in the project include **Mark Erbaugh**, Project Administrative Director; **David Kraybill**, Project Director in Morogoro, Tanzania, and Professor in the Department of Agricultural, Environmental, and Development Economics; **David Hansen**, Project Coordinator; **Wendi Howell**, Training Coordinator; **Pat Rigby**, Administrative Assistant; and **David Mackie**, Fiscal Manager..



Joan Msuya, iAGRI M.Sc. student in human nutrition at Ohio State

## Highlights from 2015

**Additional funding** - The iAGRI project was provided with \$4 million in additional funding on Monday, April 13, 2015 from the USAID mission in Tanzania to support its overall aim to improve food security in Tanzania.

**iAGRI Climate Change Conference** – A 2<sup>nd</sup> major conference, entitled “Climate Change and Multi-Dimensional Sustainability in Africa Agriculture,” was held at SUA during the first week of June. More than 100 participants attended from the U.S., Europe and sub-Saharan African nations. In addition to major sponsorship by USAID through iAGRI and Ohio State, the conference was co-sponsored by SUA, the Norwegian University of Life Sciences, and the United Nations Food and Agriculture Organization. Distinguished speakers from Ohio State included **Steve Slack**, Associate Dean and Director of OARDC and **Rattan Lal**, Professor in the School of Environment and Natural Resources. Other distinguished speakers included Luc Gnacadja, UN Convention to Combat Desertification, and Stefan Slinghoff, UN Food and Agricultural Organization.

**iAGRI and Organizational Change Webinar** – David Kraybill presented an international webinar in October 2015 through the Association of Public and Land-grant Universities’ (APLU) Knowledge Center entitled “A Model of Change for Institutional Performance Improvement: Lessons from iAGRI”. The webinar shared the role and the experience of iAGRI in the institutional capacity building of SUA.



Dr. Steve Slack, Ohio State University

**Kraybill in APLU video-clip** – Dave Kraybill was featured in a [video clip](#) produced by APLU and featured at the organization’s 2015 Annual Meeting. Dr. Kraybill’s remarks centered on the important role played by land-grant universities in advancing scientific research.

**AIAEE’s Outstanding Poster Presentation** – A poster entitled “Strengthening the Human and Institutional Capacity of Sokoine University of Agriculture, Tanzania” was awarded “Outstanding Poster Presentation” at the 2015 Association for International Agricultural and Extension Education (AIAEE) Annual Conference at Wageningen University, Netherlands. The poster was presented by Mark Erbaugh.

**Ohio State-SUA Partnership Feature in *The Hill*** – on March 23, 2015, former Senator Richard Lugar (R-IN), former Secretary of Agriculture Dan Glickman, and Peter McPherson, President of APLU, highlighted Ohio State’s strategic partnership with SUA in an article entitled “Achieve global food security by investing in universities” in *The Hill*. They argued that U.S. universities have an unparalleled ability to help transform institutions of higher education in developing nations, much like the iAGRI project has been doing since 2011.

*“Empowering students and scholars to become the next generation of agricultural leaders in Tanzania”*

## Graduate Degree-training

As of the end of 2015, 137 iAGRI-funded students had been placed in M.S. and Ph.D. degree programs, and forty-five had completed their program. Of those, 100% of the MS students in the first three cohorts placed at Ohio State University consortium (OSUC) institutions – including Michigan State, University of Florida, Iowa State University, Virginia Tech, and Tuskegee - and Punjab Agricultural University (PAU) have completed their graduation requirements as scheduled.

An important dimension of the degree programs for iAGRI students is the existing co-advisor relationship between SUA and U.S. advisors. In 2015, four more Ohio State faculty advisors for iAGRI students traveled to SUA to meet with their advisee's co-advisor, deliver scholarly presentations at SUA, and meet with other colleagues in their fields of study. The Ohio State faculty members were **Guo-Liang Wang**, Plant Pathology; **Sanja Ilic**, Human Nutrition; **Gireesh Rajashekara**, Food Animal Health Research Program; and **Clay Sneller**, Horticulture and Crop Science. In turn, advisors from SUA traveled to Ohio State, including Abel Kaaya, SUA co-advisor to Boniface Massawe, who visited OSU in April to meet with him and **Brian Slater**. Jovin Mugula, SUA advisor to Frida Nyamete, visited **Hua Wang** at OSU in May.

**Wendi Howell**, iAGRI Training Coordinator, visited Tanzania in July 2015 to meet with iAGRI Project Management Unit staff at SUA.

In June 2015, 10 Tanzanian M.Sc. students from 5 departments at Ohio State presented their graduate research proposals at Ohio State's second annual iAGRI Graduate Student Research Forum, where they had the opportunity to hone their presentation skills in addition to receiving feedback on their research approach from other iAGRI students and advisors.



2015 iAGRI Graduate Student Research Forum

Three new iAGRI-supported students from Tanzania began their graduate degree programs at Ohio State in 2015:



**Deo Protas Massawe**, Ph.D. student, Plant Pathology

*Advisors:* Feng Qu, Associate Professor, and Lucy Stewart, Adjunct Professor, Plant Pathology



**Frida Nyamete**, Ph.D. student, Food Science and Technology

*Advisor:* Hua Wang, Professor, Food Science and Technology



**Winfred Tamba**, M.S. student, Agricultural Communication, Education, and Leadership (ACEL)

*Advisor:* Scott Scheer, Professor, and Mary Rodriguez, Assistant Professor, ACEL

### iAGRI Student Placements and Completions as of 2015

	M.Sc.		Ph.D.		Total	
	Placed	Completed	Placed	Completed	Placed	Completed
<b>OSUC</b>	54	29	17	2	71	31
<b>SUA</b>	25	4	4	1	29	5
<b>RUFORUM</b>	30	7	1	-	31	7
<b>PAU</b>	6	2	-	-	6	2
<b>Total</b>	<b>115</b>	<b>42</b>	<b>22</b>	<b>3</b>	<b>137</b>	<b>45</b>

### First iAGRI Ph.D. Student Graduates from Ohio State

In 2015, Boniface Massawe was the first iAGRI-funded Ph.D. student to graduate. Boniface received his Ph.D. in Soil Science at Ohio State's School of Environment and Natural Resources within 3 years and was advised by **Brian Slater**.

Boniface returned to Tanzania in August 2015 to resume his position at Sokoine University of Agriculture in the Department of Soil Science, and will contribute to the further development and improvement of SUA's research and teaching capacity.



During his time at Ohio State, Boniface attended the 2014 World Food Prize, was a recipient of the Borlaug LEAP Fellowship, and was invited by the International Union of Soil Science to present at the 2015 Pedomorphics Conference in Spain.

### Other Indicators of iAGRI Student Success

as of 2015

- 47** peer-reviewed journal articles published
- 14** abstracts or proceedings published
- 19** posters presented
- 29** conference/seminar presentations
- 52** conference, workshops, or professional meetings attended
- 6** teaching opportunities

## Collaborative Research



*Cathy Rawkowski (center) at iAGRI Collaborative Research Workshop*

In January 2015, recipients of iAGRI Phase I Collaborative Research awards gathered in Morogoro to discuss the status of their research activities aimed at addressing food insecurity in Tanzania. They also discussed what they proposed to accomplish during the remainder of the year. Several of these projects have involved graduate students from Ohio State in the areas of natural resources and agricultural economics. Sally Miller, Plant Pathologist located at OARDC, is the PI for one of these projects.

Research funded under a Phase II was initiated during the 2015 year. Newly funded projects focus on biotic and abiotic constraints to maize production, agricultural risk management, land use, and climate change impacts on sustainable agricultural intensification, and land access policy issues.

**Mario Miranda**, Professor in the Department of Agricultural, Environmental, and Development Economics, visited Morogoro in 2015 for one of newly funded projects on agricultural risk management. This project studied alternative scenarios under which smallholder farmers in

Tanzania can reduce risk associated with extreme climatic events, such as drought and floods through the purchase of related insurance. The program is designed to increase their participation in these programs through index insured group credit. Subsequently, **Abdoul Sam**, Associate Professor, and **Tony Gallenstein**, Graduate Student, of the same department presented a short course on randomized control trials for faculty and graduate students at SUA and worked with local counterparts to establish the foundation for the initiation of field research in early 2016.

Didas Kimaro, Professor in SUA's Department of Soil Science, visited Ohio State University in May 2015 to discuss his iAGRI Collaborative Research Project with Prof. Rattan Lal. While on campus, Dr. Kimaro met with other soil scientists, iAGRI graduate students and gave a seminar on sustainable agricultural practices in Tanzania.

In October 2015, Ohio State also welcomed Sophia Kashenge Killenga, Rice Breeder & Senior Agriculture Research Officer Chollima Agro-Scientific Research Centre – Dakawa. Dr. Killenga worked with **Warren Dick**, Professor in Environment and Natural Resources, at the Ohio Agricultural Research and Development Center in developing manuscripts for iAGRI-funded collaborative research on salt affected soil and its distribution in major rice growing areas of Tanzania.

## Human and Institutional Capacity Building

**John Cardina** and **Matt Kleinhenz**, Department of Horticulture and Crop Science, visited SUA where they met with members of SUA's Department of Crop Science and Production. They prepared a report on the status of the department which included a series of recommendations related to improving its teaching, research and outreach programs.

**Dave Hahn**, Professor Emeritus in the Department of Agricultural, Environmental, and Development Economics (AEDE), visited SUA in late September to deliver an applied, two day workshop to SUA's Department of Agricultural Economics and Agribusiness (DAEA) on the fundamentals of developing a business plan.

**David Kraybill**, iAGRI Project Director, worked closely with the administration of SUA on plans to transform its organization. This has included fundamental restructuring of its academic and research programs as well as building more solid and enduring linkages with stakeholders, including SUA graduates and private sector representatives in the agricultural sector. Kraybill is a Professor in the Department of Agricultural, Environmental and Development Economics at Ohio State.



*Dave Kraybill (center) with colleagues from SUA and Jomo Kenyatta University of Agriculture and Technology during a September 2015 study tour throughout Kenya on organizational transformation.*

# International Scholar Exchange Programs

*Building Capacity Through Short-term and Long-term Training*



*Zeinabou Baraze, Niger*

## Mandela Washington Fellowship



CFAES hosted **Mandela Washington Fellow**, Zeinabou Baraze from Niger, who worked with faculty and staff in the Office of International Programs in Agriculture, Ohio 4-H, and Ohio State Extension to enhance her knowledge of agricultural youth development and urban agriculture.

During her one-month professional development experience on campus, Zeinabou conducted a written evaluation of the Ohio Youth Institute – CFAES' signature global food security program for youth – and strategized how she could develop similar programs in Niger that educate and engage youth in agriculture.

The Mandela Washington Fellowship for Young African Leaders is the flagship program of President Obama's Young African Leaders Initiative (YALI) that empowers young leaders from 49 countries in Sub-Saharan Africa who seek to promote innovation and positive change in their organizations, institutions, communities, and countries.

*"I want to reduce the rate of unemployment among women and young people in Niger by re-engaging these groups in agriculture."*

- Zeinabou Baraze

## Cochran Fellowship Program

The 2015 Cochran Program at The Ohio State University was delivered by two units within the College of Food, Agricultural, and Environmental Sciences: the Wilbur A. Gould Food Industries Center and the Office of International Programs in Agriculture. The overall purpose of the two week program in August was to teach and train the participating 20 fellows from Latin America (Peru – 4, Guatemala – 3, Panama – 1, Jamaica – 2, Honduras – 3, Dominican Republic – 6, and Nicaragua – 1) on the U.S. food safety systems, regulatory and policy issues, as well as to teach the fundamentals of microbial and chemical hazards, risk analysis, assessment and management through Hazard Analysis Critical Control Points (HACCP), Better Process Control School (BPCS) and other food safety systems. **Dr. Valente Alvarez**, Professor in the Department of Food Science and Technology, led the training and was supported by **Beau Ingle**, International Programs in Agriculture, and **Heather Dean**, Food Industries Center.

In order to increase the Fellows' knowledge of the importance of food safety for employees and consumers, the group made site visits to processing plants in Ohio. At the end of the program, all of the Cochran participants became certified in the HACCP and BPCS training programs. Ultimately, this program allowed the Cochran trainees to become more knowledgeable of new imported foods safety requirements necessary to expand food trade between the U.S. and Latin American and Caribbean countries.

The Cochran Fellowship Program is funded by the U.S. Department of Agriculture's Foreign Agricultural Service and provides short-term training opportunities to agricultural professionals from middle income countries, emerging markets and emerging democracies. Cochran fellows come to the United States, generally for 2-3 weeks, to work with U.S. universities, government agencies and private companies to receive hands-on training to enhance their technical knowledge and skills in areas related to agricultural trade, agribusiness development, management, policy and marketing.



*Valente Alvarez (left) and Cochran trainees*



*Cochran trainees at processing plant*

# Carrying on the Legacy of Norman Borlaug

*"There are no miracles in agricultural production"*

-Dr. Norman Borlaug

## USDA Borlaug International Fellowship

In 2015, the College of Food, Agricultural, and Environmental Sciences hosted five (5) distinguished international researchers sponsored through the USDA-FAS (U.S. Department of Agriculture - Foreign Agricultural Service) Norman E. Borlaug International Agricultural Science and Technology Fellowship Program, more than any other U.S. university.



**Lilian Gichuru**, Kenya Agricultural and Livestock Research Organization, Kenya

*Mentor:* Peg Redinbaugh, USDA-ARS/OARDC



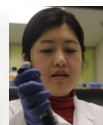
**Mohamed Mpina**, Tropical Pesticides Research Institute, Tanzania

*Mentor:* David Francis, Horticulture and Crop Science



**Nader Nassar**, General Organization for Veterinary Services, Egypt

*Mentor:* Mohamed El-Gazzar, Veterinary Medicine/OSU Extension



**Chau Nguyen**, Ho Chi Minh City Open University in Vietnam

*Mentor:* Lucy Stewart, USDA-ARS/OARDC



**Kairat Tabynov**, Research Institute for Biological Safety Problems, Kazakhstan

*Mentor:* Aradhya Gourapura, Food Animal Health Research Program

These short-term research programs for the Borlaug Fellows were administered through the Office of International Programs in Agriculture, who worked collaboratively with faculty mentors to deliver a program that not only focused on researching important topics related to food security, but training the fellows in practical research methodology and techniques that will benefit them and their home institution upon their return.

## Borlaug Higher Education for Agricultural Research and Development (BHEARD) Program

Five Ohio State international graduate students received a Fellowship from the Borlaug Higher Education for Agricultural Research and Development (BHEARD) Program, which is predominantly funded by USAID.

**Bashiru Haruna**, Ghana, graduated in Summer 2015 with his M.S. from the Department of Agricultural, Environmental, and Development Economics with **Dr. Brent Sohngen**, and resumed his position as research technician at the Savanna Agricultural Research Institute (CSIR-SARI) in Tamale, Ghana.

**Mynul Islam** and **Ferdous Elahi**, both Bangladeshi Ph.D. students in Plant Pathology working with **Dr. Sally Miller**, progressed through coursework and research at the Ohio Agricultural Research and Development Center. They also were selected to represent the BHEARD program at the 2015 World Food Prize in Des Moines, Iowa.

**Mohammad Alam**, Bangladesh, a Ph.D. student in the School of Environment and Natural Resources working with **Dr. Konrad Dabrowski**, continued his experiments related to his dissertation research and presented some of his findings at the 2015 World Aquaculture Conference in New Orleans, Louisiana.

Lastly, in the Fall of 2015 Ohio State welcomed a new BHEARD Ph.D. student from Liberia, **Irene Kargbo**, who began her doctoral program with **Dr. Luis Canas** in the Department of Entomology. Irene is a research associate at the Central Agricultural Research Institute in Monrovia.



*Irene Kargbo, Liberia*

## Borlaug Leadership Enhancement in Agriculture Program (Borlaug LEAP)

The Norman E. Borlaug Leadership Enhancement in Agriculture Program (Borlaug LEAP) awards fellowships to outstanding international graduate students currently studying in the U.S. who show strong promise as leaders in the field of agriculture and related disciplines. The program is funded by USAID and the International Maize and Wheat Improvement Center (CIMMYT).

In 2015, two (2) Ohio State graduate students from Tanzania funded by the iAGRI Project were awarded LEAP Fellowships:



**Emmanuel Mgonja** - Ph.D. student in Plant Pathology, working with the Africa Rice Center



**Victoria Bulegeya**, a M.S. student in Horticulture and Crop Science, working with CIMMYT

Since the program began in 2006, a total of five (5) Ohio State international students have been awarded LEAP fellowships, which have provided funding to work collaboratively with their U.S. university advisors and a CGIAR institution.

2014 Borlaug LEAP Fellow, **Elias Balimponya**, an iAGRI-sponsored M.Sc student in the Department of Horticulture and Crop Science, completed a short term research stay in early 2015 at the International Rice Research Institute (IRRI) in the Philippines working with Dr. Bo Zhou on the genetic resistance to rice blast (*Magnaporthe oryzae*).



*Elias Balimponya at IRRI in 2015*

## Scientific Exchange Scholars Program

The Scientific Exchange Scholars Program is a short-term training program, funded by USAID and implemented by USDA, designed to improve technical skills among researchers and build partnerships between their home country institutions and U.S. land-grant universities.

Dr. Hanan Fahmy, Head of Biotechnology Department at Egypt's Animal Health Research Institute (AHRI) in Cairo, completed a three month research fellowship at The Ohio State University's Food Animal Health Research Program (FAHRP) with **Dr. Jeffrey LeJeune**. During her research fellowship, she worked on an ongoing research project examining new *E. coli* strains potentially pathogenic to humans. The ultimate purpose of Dr. Fahmy's research is to more clearly understand the nuances of animal and zoonotic diseases and their transmission so that animal and public health can be protected and enhanced.



*Hanan Fahmy (center) with USAID Mission staff*

Dr. Fahmy also completed a brief research stay with Dr. Yan Zhang, a veterinary virologist at the Animal Disease Diagnostics Lab at the Ohio Department of Agriculture, and subsequently traveled to Boston, MA to attend the 9th International Symposium on Shiga Toxin (Verocytotoxin)-Producing *Escherichia coli* Infections. These opportunities allowed her to meet and exchange knowledge with other U.S. and international researchers in the fields of food safety and veterinary medicine.

Dr. LeJeune plans to make a follow-up visit to Cairo in 2016 in order to continue his collaboration with Dr. Fahmy, and to hopefully establish stronger research linkages between Ohio State/FAHRP and AHRI.

## U.S.-China Scientific Cooperative Exchange Program



*Dr. Gary Gao, center, speaks with SCEP participants from China*

The U.S.-China Scientific Cooperative Exchange Program (SCEP) is an exchange program funded by USDA between teams of scientific and technical experts from the United States and the People's Republic of China. The program is intended to promote U.S. agricultural priorities, encourage long-term cooperation in agricultural science and technology, and create a positive atmosphere for agricultural trade between the U.S. and China.

From August 26 – September 6, 2015, Ohio State welcomed five administrators from the Office of Rural Affairs within China's Ministry of Agriculture. This SCEP program, which was delivered by **Beau Ingle** in International Programs in Agriculture and **Dr. Gary Gao**, Ohio State South Centers, centered on the management and support programs of family farms and involved visits to USDA offices in Washington, D.C and Columbus, the Ohio Department of Agriculture, family farms in Ohio, county Extension offices, and other sites around the state.

Ohio State was also selected by USDA to send a specialized delegation of CFAES faculty on a reciprocal SCEP visit to China from October 22 – 29, 2015. Preparation for this visit emanated from Hua Wang, Professor in Food Science and Technology, who submitted a proposal to USDA to visit with stakeholders in China with an interest in mutually exploring antibiotic resistance mitigation and food safety.

Other members of the CFAES delegation included **Dr. Mark Erbaugh**, International Programs in Agriculture; **Dr. Sheryl Barringer**, Food Science and technology; **Dr. Valente Alvarez**, Food Science and Technology; **Dr. Melvin Pascall**, Food Science and Technology; and **Dr. Zhongtang Yu**, Animal Sciences. This visit culminated in an international conference on antibiotic resistance in Shanghai, China, co-organized by Ohio State, Fudan University, and the Shanghai Academy of Agricultural Sciences on October 25<sup>th</sup>.

*Conference on Antibiotic Resistance in Shanghai, China, October 2015. Officially opened by President Michael Drake, M.D. and Dean Bruce McPheron.*



# Fulbright Fellowships

*The Fulbright Program is the flagship international educational exchange program sponsored by the U.S. government and is designed to increase mutual understanding between the people of the United States and the people of other countries.*



Mazeika Sullivan

Mazeika Sullivan, associate professor and assistant director, School of Environment and Natural Resources (SENR), was a recipient of the 2015-16 Fulbright-National University Distinguished Chair in Biodiversity and Sustainable Development award.

Dr. Sullivan's research entitled "Biodiversity, Food Webs, and Sustainable Rivers" was completed at National University of Colombia, which is an institution that seeks to promote, communicate, and exchange new academic and research developments in the fields of biodiversity and sustainability with the goal of developing research collaboration among the academic, scientific and practitioner communities from different fields of knowledge at a national and international level. The National University is Colombia's largest university.

## Visiting Fulbright Scholars to Ohio State

### Celestin Atse

*Oceanological Research Center, Ivory Coast*

Hosted by **Dr. Konrad Dabrowski**, Professor in the School of Environment and Natural Resources, and funded through the Core Fulbright Visiting Scholar Program.

Focused on research project entitled "Nutritional Evaluation of Local Agricultural By-products for Low-cost Diets Formulation for Channel Catfish (*Ictalurus punctatus*)"

### Chia-Yu Yeh

*National Chi Nan University  
Taiwan*

Hosted by **Dr. Brent Sohngen**, Professor in the Department of Agricultural, Developmental, and Environmental Economics, and funded through the Core Fulbright Visiting Scholar Program.

Focused on research project entitled "Applying Equilibrium Residential Location Sorting Model to Value the Social Welfare of Development Plans".

### Simi Mehta

*School of International Studies, Jawaharlal Nehru University, India*

Hosted by **Dr. Rattan Lal**, SENR, and **Dr. David Hansen**, International Programs in Agriculture. Focused on a research project entitled "U.S.-India Agricultural Cooperation: Perspectives, Issues, and Challenges, 1996-2012."

Ms. Mehta selected Ohio State for her program because of its continuing ties to agriculture in India, particularly in the northeast region of India beginning with inputs to the creation of state agricultural universities in the Punjab and Rajasthan. Her studies at Ohio State will continue through April, 2016. She then anticipates completing her dissertation after which she intends to pursue a post-doctoral program in the U.S.



### Leon Muntean

*University of Agricultural  
Science and Veterinary  
Medicine Cluj-Napoca,  
Romania*

Hosted by **Dr. Clay Sneller**, Professor in the Department of Horticulture and Crop Sciences, and funded through the Core Fulbright Visiting Scholar Program.

Focused on research project entitled "Genomic Selection in Wheat Breeding as an Integrated Approach for Food Security"

## Elly Sabiiti, Fulbright Scholar and Longtime Partner, Visits Ohio State

**Dr. David Barker**, Professor in the Department of Horticulture and Crop Science, welcomed to campus Dr. Elly Nyambobo Sabiiti, a recipient of the U.S. State Department's distinguished Fulbright Fellowship. Dr. Sabiiti is a professor emeritus and former Dean of the College of Agriculture and Environmental Sciences at Makerere University in Kampala, Uganda. During his 3 months at the College of Food, Agricultural, and Environmental Sciences, Dr. Sabiiti worked closely with Dr. Barker and **Dr. Mark Sulc** in composing a technical manuscript, as well as observing other departmental activities related to agricultural teaching and research.

Dr. Sabiiti has a 40+ year working relationship with Ohio State faculty, including the late Dr. Paul Henderlong (Professor in the Department of Agriculture at the time), who taught crop science briefly at Makerere from 1971-1973. Dr. Sabiiti has also worked collaboratively with Dr. Mark Erbaugh for more than 25 years in agricultural research in East Africa. Dr. Sabiiti last visited Ohio State's campus in the late 1980's.



*Elly Sabiiti delivers a lecture on peri-urban agricultural practices in Uganda during the Department of Horticulture and Crop Science's weekly seminar series*

## Faculty Exchange Program

The Faculty Exchange Program (FEP), a program sponsored by the U.S. Department of Agriculture's Foreign Agricultural Service (FAS), funded its latest cohort at Ohio State in 2014. However, program activities, specifically follow-up visits to Ukraine by Ohio State mentors in the Department of Agricultural, Environmental, and Developmental Economics (AEDE), carried over into 2015.

In May 2015, **Dr. Allan Lines**, Professor Emeritus in AEDE, and **Dr. Stan Thompson**, Professor in AEDE, separately visited Ukraine in order to connect with FEP alumni at their home universities, broaden their professional connections, and learn more about Ukraine's modernizing agricultural economy.

Universities that Dr. Thompson and Dr. Lines visited included Kyiv National Economic University, SUMY National Agrarian University, National University of Life and Environmental Sciences, and Uman University of Horticulture, all of which are institutions where FEP alumni are currently employed.



*Stan Thompson (center right) visits with former FEP scholars & agricultural faculty in Kiev, Ukraine*



Since a central tenet of the FEP fellowship at Ohio State was to expose the fellows to innovative classroom methods of instruction, it was important for Dr. Lines and Dr. Thompson to observe how student engagement in classroom learning had evolved from the predetermined and "lecture focused" paradigm to a more dynamic and "student-centered" approach.

Through the Office of International Programs in Agriculture and AEDE, Ohio State has participated in the FEP program from 2002-2006, and from 2013-2015, training Ukrainian and other Eastern European/Eurasian agribusiness instructors in curriculum development, teaching methodologies, and agricultural technical knowledge during their four month fellowships at Ohio State.

*Allan Lines (standing right) addresses students at SUMY National Agrarian University on May 19, 2015.*

# Global Teaching and Learning

## Ohio International Internship Program

The Ohio International Internship Program which is a functional unit within the Office of International Programs in Agriculture, specializes in providing international internships in agriculture, horticulture, turfgrass, and agricultural business. In 2015 the program hosted internships for approximately 415 interns and trainees from 43 countries. Throughout its 36 years in the college, the Ohio International Internship Program has hosted over 9,815 participants for training and currently has verbal agreements with 40 universities and organizations worldwide, along with several official agreements.

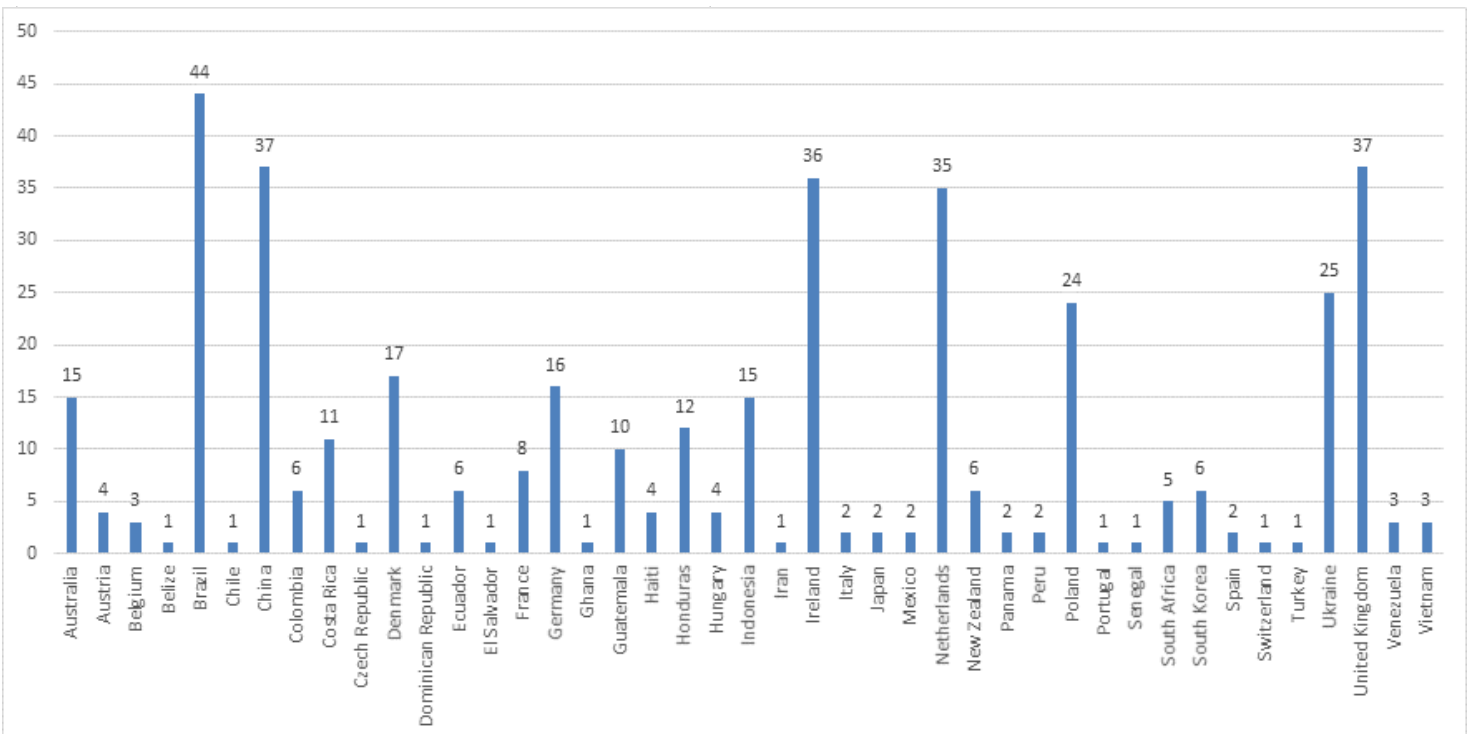
The internship program specializes in placing international agricultural students with businesses in Ohio and other areas of the United States. Business owners and managers work with program staff in the Office of International Programs in Agriculture to accommodate international students studying agriculture so that they can obtain invaluable professional experience from leaders in the industry. Businesses also appreciate the opportunity to work with international students, allowing them to better understand how their industry performs in other countries and expanding their professional networks around the world.

More: [www.ohioprogram.org](http://www.ohioprogram.org)



*International interns with the Ohio International Internship Program attended the 2015 World Dairy Expo in Madison, Wisconsin from September 29<sup>th</sup> -Oct 3<sup>rd</sup>. Twenty dairy interns from six countries attended seminars and meetings with international companies, including the Ohio-based business, Select Sires. All students visited hundreds of dairy businesses where they learned about the latest technologies, product lines, and best livestock during their time in Madison. Over 75,000 dairy industry enthusiasts attended the World Dairy Expo.*

### 2015 Internship Class by Country of Origin



## Study Abroad

The College of Food, Agricultural, and Environmental Sciences sponsored twelve (12) study abroad programs in thirteen (13) different countries in 2015. Programs ranged from ten days to six weeks in length, and engaged faculty and staff from four (4) units and departments within the College.

In all, a total of 246 Ohio State undergraduate students participated in CFAES-sponsored study abroad programs in 2015, with 180 of those students being from CFAES.

For more information on study abroad, contact **Kelly Newlon** at [newlon.7@osu.edu](mailto:newlon.7@osu.edu).

**More:** <http://cfaes.osu.edu/students/academics/undergraduate/study-abroad>



CFAES Students on Study Abroad in Honduras

### 2015 Wolfe Study Abroad Scholarship Winners

The following CFAES undergraduate students were among 31 Wolfe Scholarship recipients throughout Ohio State University selected to participate in study abroad programs in the following countries:

**Juliana Hussey**, a senior majoring in forestry, fisheries and wildlife (China)

**Summer McCracken**, a sophomore majoring in agribusiness and applied economics (Brazil)



Brain Slater (left) with CFAES students in Iceland

2015 Study Abroad Programs					
Country	Focus Area	Resident Director	Students		Date
			Total	FAES	
Antartica, Argentina	Impact on a Fragile Environment	Dr. Joseph Campbell, Environment and Natural Resources	15	9	December 16-31, 2015
Australia	Sustaining Human Societies and the Environment	Dr. Kerry Ard, Susan Rasche, Alayna Dorobek, Benjamin Wickizer, Environment and Natural Resources	43	11	May 13-June 5, 2015
Brazil	Alpha Zeta Partners Program: Economics, Rural Sociology, Agricultural Development, History	Dr. Jill Pfister, Academic Programs	18	18	January 5-February 14, 2015
China	Forestry and Wildlife Research	Dr. Roger Williams, Environment and Natural Resources	6	3	May 8-30, 2015
Costa Rica	Service Learning: Ecosystems, Sustainability	Paul Heimberger, Academic Programs	14	10	March 14-22, 2015
Czech Republic	Sustainability and Agricultural Policy in the EU	Dr. Robert Birkenholz, Agricultural Communication, Education, and Leadership	14	8	May 17-June 13, 2015
England	Agricultural and Environmental Communications	Dr. Emily Buck, Agricultural Communication, Education, and Leadership	16	15	May 24-June 7, 2015
Honduras	Community Development	Dr. Jamie Cano, Warren Agner, Trina Beebe, Agricultural Communication, Education, and Leadership	8	8	May 23-June 7, 2015
Iceland	Environment and Natural Resources	Dr. Brian Slater and Susan Burks, Environment and Natural Resources	17	15	August 6-19, 2015
Ireland	Human and Animal Interactions	Dr. Steven Moeller, Kelly George, Ronald Cramer, Animal Sciences	49	46	December 27, 2015-January 9, 2016
Nicaragua	FAES First Year Experience	Dr. Jeffory Hattey, Academic Programs	27	27	January 1-10, 2016
New Zealand	Sustaining Human Societies and the Environment	Dr. David Hix, Emily Hutchins, Environment and Natural Resources	19	10	May 13-June 5, 2015
<b>13 Countries</b>	<b>12 Programs</b>	<b>21 Resident Directors</b>	<b>246</b>	<b>180</b>	

## International Programs in Agriculture's International Research Internships

Since 2013, the Office of International Programs in Agriculture has sponsored CFAES graduate students to conduct short-term international agricultural research projects with international partners. In 2015, two CFAES graduate students were funded to complete short-term research internships in Tanzania with faculty collaborators at Sokoine University of Agriculture (SUA) – **Anna Testen**, Ph.D. student in Plant Pathology, and **Eric Stein**, an MENR student in Environment and Natural Resources.



Anna's main objective during her November 11 – December 5, 2015 trip was to conduct one year follow-up visits to three villages (Msufini, Msongozi, and Mabana) in which participatory variety selection trials and soil health test kit training were conducted. The data gathered during the village visits will be incorporated into four manuscripts that Anna is preparing with collaborators at SUA including Dr. Delphina Mamiro, Dr. Hosea Mtui, Mr. Jackson Nahson. During her visit she also served as an instructor at a pest and disease diagnostics workshop at the International Institute of Tropical Agriculture (IITA), which was organized and led by two CFAES faculty - **Dr. Sally Miller**, Professor in Plant Pathology, and **Dr. Celeste Welty**, Professor in Entomology.

*Anna Testen (center) describes diagnostic techniques at IITA workshop in Dares Salaam, Tanzania*

During his August 16 – November 21, 2015 research visit to Tanzania, Eric Stein worked with Dr. Didas Kimaro, Professor in SUA's Department of Soil Science, to conduct an analysis of the carbon land sink of the Kilimanjaro region of Tanzania, specifically to determine the positive effects of certain sustainable agricultural practices. Eric hopes that these findings can reveal which types of farming ecosystems have greater capacities to sequester more carbon, and as a result, enhance climate change adaptation and mitigation and food security.

Also in 2015, in collaboration with the Fisher College of Business and the Global Water Initiative (GWI) at Ohio State, International Programs in Agriculture supported three MBA students to travel to SUA to work with SUA's MBA and M.Sc. agribusiness students as a part of Fisher's Global Applied Projects (GAP) program. While in Mororogo, **Nick Ward**, **Christian Medeiros**, and **Mike Sargent** worked to strengthen SUA's agribusiness training and to enhance public-private partnerships in Tanzania's agricultural sector. Specific activities involved teaching an Operations and Marketing course at SUA, and writing a case based on the success of a local agricultural entrepreneur who had previously worked as a civil engineer before transitioning to the agricultural sector.

*"This was a deeply humbling experience and an exciting opportunity for us to apply our knowledge from our first year at Fisher."*

- Mike Sargent



*Elliott Ethridge (far left) and Nick Ward (right), with other SUA students and Dr. Damien Gabegambi*

## U.S. Borlaug Fellows in Global Food Security Program

The U.S. Borlaug Fellows Global Food Security Program, funded by USAID, is an initiative that seeks to foster leadership and scientific expertise among U.S. graduate students to effectively study and promote sustainable food systems in developing countries. While no Ohio State students were awarded a research grant in 2015, one CFAES student – **Matthew Bright**, a Ph.D. soil science student in the School of Environment and Natural Resources – participated in the 2015 Borlaug Summer Institute from June 7-19, 2015 at Purdue University.

Convened by Dr. Gebisa Ejeta, Director of the Center for Global Food Security at Purdue, the institute provides high achieving graduate students with the opportunity to discuss innovative approaches to enhancing food security in developing nations with world-renowned agricultural researchers, policy-makers, and other leaders.



*Matthew Bright (far right) stands with his project group at the Institute, along with (back row, from right to left) Dr. Gebisa Ejeta, Ambassador Kenneth Quinn, and Gary Burniske.*

# Peace Corps



**4<sup>th</sup>** ranked university in 2015 in list of top volunteer-producing large universities

**64** current Peace Corps volunteers

**1,735** Buckeyes have served overseas since 1961

**No. 10** all-time producer of Peace Corps volunteers

*"Between my concern for improving global farming practices and my desire to increase my cultural competency, the Peace Corps was a natural next step to take after college graduation."*

- Amber Sattelberg, '15 Ohio State, Animal Sciences  
Peace Corps Volunteer, Paraguay

The Peace Corps, established in 1961 by the U.S. government, sends Americans abroad to tackle the most pressing needs of people around the world. Peace Corps Volunteers (PCV) work at the grassroots level toward sustainable change in the areas of agriculture, education, public health, community development, and a multitude of other areas.

The Office of International Programs in Agriculture, has administered Peace Corps recruitment at Ohio State University and other colleges and universities throughout central Ohio since 1974. **Mr. Jack Campbell**, former Peace Corps Volunteer in Botswana and Fiji, retired in May 2015 as the Ohio State campus Peace Corps recruiter after serving in that capacity for almost 7 years. **Ms. Gail Messick** assumed her position as Jack's replacement during the summer to begin a robust recruitment cycle during the 2015-2016 academic year. Messick is a returned Peace Corp Volunteer having served in St. Lucia from 1976-78 and in Swaziland from 2010-2014, where she worked as a public health dental hygienist and promoted dental health in schools and in the surrounding community while her husband Mike worked as a business advisor and helped initiate marketing plans for the handicraft industry.

Gail Messick, OSU Campus  
Peace Corp Recruiter



Amber Sattelberg



## Ohio State Peace Corps Recruiter Awarded Prestigious Lillian Carter Award

The Peace Corps awarded **Jack Campbell**, the Peace Corps recruiter at The Ohio State University for the past six years, the 2015 Lillian Carter Award on May 13th in Atlanta, Georgia. The prestigious award, named after the mother of former U.S. President Jimmy Carter, is presented biennially to an outstanding, senior Returned Peace Corps Volunteer (RPCV) who demonstrates a commitment to the Peace Corps' third goal of promoting a better understanding of other peoples on the part of Americans. Jack was presented the award by former U.S. President Jimmy Carter.

During her video message honoring Jack, Peace Corps Director Carrie Hessler-Radelet highlighted the fact that Jack is the oldest RPCV to ever receive the Lillian Carter Award, and expressed her appreciation for being "a great friend of the Peace Corps."

## Ohio Youth Institute

The Ohio Youth Institute (OYI) of the World Food Prize was held on April 17, 2015 at the Nationwide & Ohio Farm Bureau Center on The Ohio State University campus. The annual program is funded by the College of Food, Agricultural, and Environmental Sciences (CFAES), and is collaboratively administered by Ohio State University Extension and the Office of International Programs in Agriculture. Sixty-eight students from 13 high schools in Ohio participated in the one day event in 2015 by presenting a research paper focused on a specific food security challenge facing a particular country.



*Ohio Youth Institute participants with Ambassador Tony Hall, OYI keynote speaker*

In 2015, the OYI engaged 28 food security experts, 24 of which were faculty and researchers from 10 CFAES departments/units, as expert readers who evaluated oral presentations during the provided valuable feedback to the students on their projects. Eleven of the 68 student participants were selected to present their projects at the Global Youth Institute in October.

Students also participated in learning sessions focused on food production and sustainability with **Dr. Mary Kay Pohlschneider** (Food Science and Technology) and **Dr. Bob Horton** (Ohio State Extension, 4-H), and heard from **Kelly Newlon** (CFAES Academic Affairs) about various study abroad opportunities available to undergraduates at Ohio State.



*Student with Ohio Lt. Governor, Mary Taylor, at the Ohio Youth Institute (April 2015)*

## Global Youth Institute

The Global Youth Institute (GYI) is held each year in Des Moines, Iowa during the annual International Borlaug Symposium, more popularly known as the World Food Prize. During the GYI, selected high school students from around the United States and other countries are invited by the World Food Prize Foundation to participate in the three-day event on global food security.

Eleven Ohio high school students who had participated in the Ohio Youth Institute, along with 7 mentoring teachers, attended the GYI from October 14-16, 2015 to present their papers to peers, scientists, and other food security experts. In addition, they were able to interact with the 2015 World Food Prize Laureate, Sir Fazle Hasan Abed of Bangladesh, the internationally renowned founder and chairperson of the Bangladesh Rural Advancement Committee (BRAC) – now the world's largest non-governmental organization devoted to improving livelihoods, enhancing food security, and alleviating poverty. Recent Borlaug-Ruan interns who completed short term fellowships at agricultural research centers in the U.S. and around the world were also present to provide guidance to GYI delegates on how to advance their engagement in food security research and learning.

This year **Derrick Freshcorn**, former Ohio Youth Institute and Global Youth Institute participant and current Ohio State undergraduate student in Plant Pathology, served as a 2015 Wallace-Carver Fellow. He completed his internship in sustainable biofuels and co-products research at the USDA-ARS Eastern Regional Research Center, in Wyndmoore, PA. The Wallace-Carver Fellowship Program is jointly funded by USDA and the World Food Prize Foundation.

*"My experience as a Wallace-Carver Fellow really showed me what I want for my career and helped me get closer to finding my passion"*



*Derrick Freshcorn, undergraduate in the Department of Plant Pathology and 2015 Wallace Carver Fellow.*



THE WORLD FOOD PRIZE

# International Engagement on Campus

## International Scholarship Symposium

The International Scholarship Symposium, an inaugural event that invited Ohio State faculty, students and scholars to share their international research projects and inspire global discussion, took place on Friday, February 27, 2015.

The symposium showcased important international research conducted by members of the Ohio State community. More than 100 faculty, staff, students and international scholars all joined together to learn more about the work accomplished by their colleagues on campus and around the world.

Panel presentations were divided into four topic areas involving global health, social justice, water across the planet and social actors in changing environments – areas that represent important global challenges and match well with Ohio State's Discovery Themes.

Participants from the College of Food, Agricultural, and Environmental Sciences:

### Panel Presentations:

**D. Rose Elder**, Associate Professor, Ohio State Agricultural Technical Institute - "Parent-child agriculture technology transfer"

**Mark Erbaugh**, Director, International Programs in Agriculture - "Marketing research to improve smallholder incomes and sorghum productivity in East Africa: Lessons Learned"

**Suzanne Gray**, Assistant Professor, School of Environment and Natural Resources - "Linking freshwater fish biodiversity and water quality in Uganda"

**Jiyoung Lee**, Assistant Professor, Department of Food Science and Technology - "Human health risks linked to water eutrophication in the U.S. and global implications under changing climate"



*Dr. Suzanne Gray, School of Environment and Natural Resources*

### Poster Presentations:

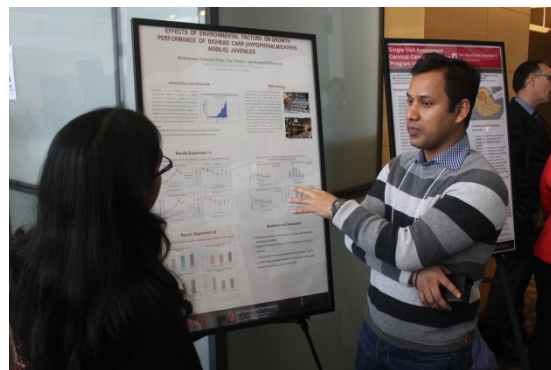
**Mafruha Afroz**, Visiting Scholar, Department of Plant Pathology - "Differential colonization of *Solanum sisymbriifolium* and tomato by *Ralstonia solanacearum* strains"

**Mohammad Ashraf Al Alam**, Ph.D Student, School of Environment and Natural Resources - "Hypoxia Tolerance: A comparison between Bighead and Koi Carp"

**Amanda Davey**, Program Manager, School of Environment and Natural Resources - "Hydrologic redistribution and rhizosphere biology of Resource Islands and partnership to develop agroecology and extension programs in Senegal"

**Mark Erbaugh**, Director, International Programs in Agriculture - "Innovative Agricultural Research Initiative (iAGRI)"

**Sharmin Sadeq**, Visiting Scholar, Department of Agricultural Communication, Education, and Leadership - "The roles of rural women work in agriculture and food production"



*Alam Ashraf, School of Environment and Natural Resources, presents research.*

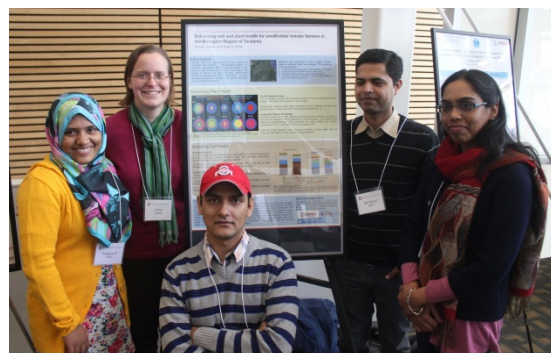
**Mynul Islam**, Ph.D. Student, Department of Plant Pathology - "Genetic variability of *Sclerotinia sclerotiorum* and integrated management of white mold of mustard"

**Boniface Massawe**, Ph.D Student, School of Environment and Natural Resources - "Digital soil mapping for rice production"

**Nagendra Subedi**, Ph.D Student, Department of Plant Pathology "Genetic diversity and management of *Ralstonia solanacearum* strains in South Asia"

**Anna Testen**, Ph.D Student, Department of Plant Pathology - "Enhancing soil and plant health for smallerholder tomato farmers"

**Rosemary Isoto**, Ph.D Student, Department of Agricultural, Environmental, and development Economics - "Assessing impacts of participatory agricultural research on livelihoods of Arabica coffee farmers: Evidence from Manafwa District, Uganda"



*Plant Pathology students and scholars at the International Scholarship Symposium*

# International Engagement on Campus

## International Scholar Research Exposition



(From Left) Dr. Warren Dick, President Michael Drake, Min Huang, and Dr. William Brustein

The 10th Annual International Scholar Research Exposition Opening Reception was held outside the President's office in Bricker Hall. Current international J-1 visiting scholars to The Ohio State University were invited by Ohio State President Michael Drake and Dr. William Brustein, Vice Provost for Global Strategies and International Affairs, to submit research summaries. Of those that were submitted, more than 30 finalists from 16 different countries were asked to create research posters for display. The posters were displayed in Bricker Hall throughout November and December 2015.



Dr. Doug Doohan and Pía Beatriz Arismendi Golborne

### CFAES Participants

**Pía Beatriz Arismendi Golborne**, Department of Horticulture and Crop Science: Research focused on the giant ragweed with the hopes of developing more accurate integrated management control plans for organic systems, such as corn and soybeans. Her faculty mentor is Douglas Doohan.

**Sibelle Santanna da Silva**, Department of Horticulture and Crop Science: Researched the parameters that define seed quality in wild species of Phlox. Her faculty mentors are Pablo Jourdan and Ana Dionisia da Luz Coelho Novembre

**Louceline Fleuridor**, Department of Horticulture and Crop Science: Conducted a study on the symptoms of herbicide drift on tomato and soybean plants to provide reliable data to farmers. Her faculty mentor is Douglas Doohan.

**Min Huang**, School of Environment and Natural Resources: Researched methanotrophic bacteria and its effect in forest soils. Her faculty mentor is Warren Dick.

**Maryam Temouri**, School of Environment and Natural Resources: Researched microbial diversity in soils and will use this knowledge to aid in restoring desert ecosystems. Her faculty mentor is Warren Dick

**Zhongxia Yang**, Department of Entomology: Researched aspects of the mosquito life cycle to help identify new molecular targets for insecticide development. Her faculty mentor is Peter Piermarini

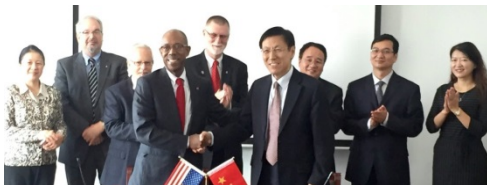
# Ohio State Global Gateways

## CHINA

CFAES expanded and intensified its engagement in China in 2015. Four new international agreements were signed with Chinese institutions. Two high profile exchange visits also occurred between CFAES faculty and the Ministry of Agriculture through USDA's Scientific Cooperative Exchange Program, and more than 35 CFAES faculty continued to work collaboratively with Chinese colleagues through joint research and scholarly exchanges.

Highlighting CFAES' engagement in China in 2015 was an October visit by Ohio State and CFAES leaders to China Agricultural University (CAU), the Chinese Academy of Agricultural Sciences (CAAS), and Fudan University. President Michael Drake, Dean Bruce McPherson, and other CFAES faculty visited colleagues and administrators to re-connect with long-standing partners, particularly at CAU and CAAS.

Also in 2015, International Programs in Agriculture, collaborating with the Department of Plant Pathology and Department of Horticulture and Crop Science, moved forward in establishing the Ohio State-CAU Undergraduate Research Internship Program, which will fund advanced CAU undergraduate students to conduct short-term agricultural research projects with CFAES faculty beginning in 2016.



### China Gateway Faculty Advisory Committee

The following CFAES faculty members serve on the advisory committee for OSU's China Global Gateway Office located in Shanghai, China:

**Larry Brown:** Professor, Food, Agricultural, and Biological Engineering

**Guo-Liang Wang:** Professor, Plant Pathology

**Hua Wang:** Professor, Food Science and Technology

## BRAZIL

In 2015, the Ohio State Office of Research released its 2<sup>nd</sup> Call for Proposals for the Ohio State-Brazil Collaborative Research Grants, jointly funded by Ohio State and the São Paulo Research Foundation (FAPESP). Out of the 43 total proposals submitted throughout the university, seven were submitted by faculty from CFAES, three of which were subsequently selected to be funded. Awarded CFAES faculty include:

**Peter Piermarini**, Assistant Professor in Entomology, is partnering with Dr. Margareth Capurro, University of São Paulo – ESALQ.

**Thaddeus Ezeji**, Associate Professor in Animal Sciences, is partnering with Dr. Adriano Pinto Mariano, University of Campinas.

**Erich Grotewold**, Professor in Horticulture and Crop Science and Directors of the Center of Applied Plant Sciences, is partnering with Dr. Michael dos Santos Brito, Agronomy Institute in Campinas.

Each research team will receive a \$20,000 mobility grant to fund the exchange of researchers between the two countries.



### Brazil Gateway Faculty Advisory Committee

The following CFAES faculty serve on the advisory committee for OSU's Brazil Global Gateway office, located in São Paulo:

**Valente Alvarez:** Professor, Food Science and Technology

**David Hansen:** Professor Emeritus, International Programs in Agriculture

**Claudio Gonzalez:** Professor, Horticulture and Crop Science

**Douglas Southgate:** Professor Emeritus, Agricultural, Environmental, and Development Economics

**Normand St-Pierre:** Professor, Animal Sciences

## INDIA

From March 14-21, 2015 **Mark Erbaugh**, Director of the Office of International Programs in Agriculture, David Hansen, iAGRI project coordinator, and other iAGRI staff from Tanzania traveled to Punjab Agricultural University (PAU) in Ludhiana, India to visit with administrators and the six iAGRI-supported graduate students studying there. They were also accompanied by **Ratnesh Bhattacharya**, Director of Ohio State's India Global Gateway Office.

Ohio State enjoys a long history of collaboration with PAU dating back to the latter's founding in 1955, when USAID solicited the assistance of Ohio State's Office of International Programs in Agriculture in creating PAU from the "mold" of successful U.S. land-grant institutions.

Also in 2015, Mark Erbaugh partnered with Proctor & Gamble and Agribusiness Associates Inc. in conducting a short-term project entitled "Research and Production Overview of Psyllium in Rajasthan", an analysis intended to strengthen the value-chain of psyllium in India.



### India Gateway Faculty Advisory Committee

The following CFAES faculty serve on the advisory committee for OSU's India Global Gateway office, located in Mumbai, India:

**Rattan Lal:** Professor, Environment and Natural Resources

# Outreach and Service

## Ohio State ATI in Ghana

For the past 12 years, **Dr. D.R. Elder**, Associate Professor and Coordinator of Humanities and Social Sciences at Ohio State's Agricultural Technical Institute (ATI) has worked in Ghana, working 5 of those years with the Evangelical Presbyterian University College (EPUC) in Ho, Ghana. Her activities have involved working with EPUC faculty, such as Senyo Dzoagbe, Professor of Marketing at EPUC, on projects aimed at alleviating poverty in six rural villages through microfinancing and other community development activities.

In May 2015, Dr. Elder and participating Ohio State students provided a small and a large solar pack to the Engineering Department of Mawuli Senior High School - with the capacity of charging dozens of laptops and cellphones and providing lighting for the dining hall. The group also provided 50 donated solar lanterns to midwives and traditional birth assistants and gave 25 donated One-World Futbols to local school children.

The Parent-Child Ag Tech Transfer project was successfully completed in 2015. To continue the positive impact that this project has had, Dr. Elder and students initiated the construction of a \$160 chicken coop prototype, with the expectation that each of the farmers who had participated in the project will eventually have one. This prototype was completed in December 2015 and the chickens that it houses are reportedly doing well. It's expected that if the farmer continues to experience success, she will encourage others in her village to use some of her methods for feeding, cleaning, immunizing, etc. poultry.



*Ghanaian farmer works with new chicken coop prototype*

## Ohio State Master Gardeners in Ecuador

In February 2015, fifteen Ohio State University Extension Master Gardener Volunteers (MGV) traveled to Otavalo, Ecuador for the 3<sup>rd</sup> time to work in nearby indigenous communities in order to help prevent erosion and complete other various gardening activities. State MGV Program Director **Pam Bennett** and Program Manager **Denise Johnson** led the MGVS in this partnership with the Tandana Foundation.

The MGVS participated in a variety of activities including planting tree seedlings on a hillside in one community to prevent erosion, planting a vegetable garden for a family in need of assistance, worked in the tree nursery, taught a gardening program to school children, and assisted the community in putting in a fence and cleaning up the vegetable garden. They also learned about the culture of the area while working in the communities and eating lunch with the locals.



*OSU Extension Master Gardener Group in Ecuador, 2015*



*Pam Bennett (center), State MGV Director, with local Ecuadorians*



*MGV visitor works in the garden during a service activity in Ecuador*

The Tandana Foundation is a non-profit organization that develops various volunteer vacations and with the assistance of the OSUE MGV Program Director developed a specific garden outreach program.

## International Visitors & Delegations

The Office of International Programs in Agriculture believes that welcoming visitors from international institutions of higher education, research, and government is crucial to establishing and enhancing the College of Food, Agricultural, and Environmental Sciences' collaborative engagement around the globe.

In 2015, the Office of International Programs in Agriculture welcomed and met with more than 50 international faculty, administrators, and government officials who visited The Ohio State University to discuss potential areas of collaboration including the exchange of students and scholars, the development of memoranda of understanding, and engaging in collaborative research and other cooperative activities.



French Agriculture Minister, Stéphane Le Foll, Visits Ohio State

**Dr. Rattan Lal** and the rest of the Carbon Management Sequestration Center hosted Minister Le Foll and his delegation on June 27, 2015. As part of his visit, the Minister gave a talk, "Research on Carbon Sequestration in Soils: A Priority for France," and also visited farms in Ohio adopting carbon sequestration practices. His visit previewed his participation in the COP21, UN Climate Change Conference, in December 2015.

### Highlight Visits to Ohio State, CFAES in 2015

Henan Agricultural University, China

Sokoine University of Agriculture, Tanzania

Konya Food and Agriculture University, Turkey

Benha University, Egypt

University of Rajshahi, Bangladesh  
Ministry of Education, Bangladesh

Adeyemi College of Education and  
Obafemi Awolowo University, Nigeria

Chollima Agro-Scientific Research Centre –  
Dakawa, Tanzania

Hubei Provincial Foreign Affairs Office, China

University of Dodoma, Tanzania

### Former Ambassador & Hunger Fighter, Tony Hall, Visits Ohio State to Highlight Global Food Security

On March 16-17, 2015, the College of Food, Agricultural, and Environmental Sciences welcomed the Honorable Tony Hall, former Ambassador to the Food and Agriculture Organization of the United Nations, to The Ohio State University to learn about the college's ongoing programs and commitments to battling hunger and promoting domestic and global food security. The former U.S. Congressman from Ohio and current Executive Director Emeritus of The Alliance to End Hunger – a Washington-based non-profit organization that promotes the issue of chronic hunger and food insecurity to international audiences – has been engaged in food security for more than 35 years as a lawmaker and diplomat.

Ambassador Hall was invited to campus to deliver the keynote address at this year's Ohio Youth Institute after meeting the youth delegates from Ohio attending the World Food Prize in Des Moines, Iowa, last October.

**Dr. Bruce McPherson**, Vice President of Agricultural Administration and Dean of the College of Food, Agricultural, and Environmental Sciences, enjoyed the opportunity to meet with Ambassador Hall to highlight the leadership role the college has taken in combating food insecurity. Hall also had the opportunity to visit the Ohio Agricultural Research and Development Center (OARDC) annual conference where he interacted with faculty and students advancing cutting-edge research in the area of agriculture and environmental sciences.



# International Agreements

International agreements are important facilitators of international collaborations in agricultural teaching, research, and outreach. The College of Food, Agricultural, and Environmental Sciences (CFAES) experienced another productive year in developing and signing four new agreements with higher education and research institutions in two countries in 2015.

Country	Partner Institution	Type of Agreement	Year	Faculty Initiator
China	China Agricultural University	Memorandum of Understanding	2015	Yebo Li
China	Chinese Academy of Agricultural Sciences	Memorandum of Understanding	2015	Guo-Liang Wang
China	Shandong Academy of Agricultural Sciences	Memorandum of Understanding	2015	Yebo Li
Ukraine	Dnipropetrovsk State Agrarian and Economic University	Memorandum of Understanding	2015	Allan Lines

The signing of these four agreements brings the total number of active agreements with international partners to 29. These active agreements represent the ongoing collaborative activities between CFAES faculty and agricultural institutions of higher learning and research in 17 different countries.

As of the end of the 2015 calendar year, there are three international agreements in the development or approval stages.

More: <http://cfaes.osu.edu/international/opportunities/international-agreements>

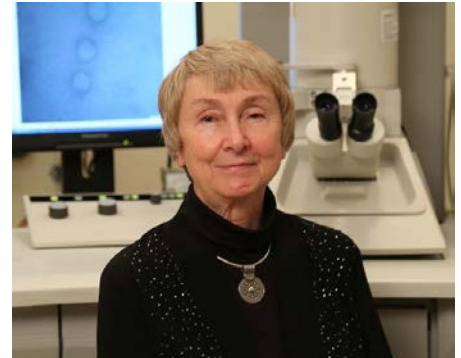
Full Roster of Active CFAES International Agreements				
Country	Partner Institution	Type of Agreement	Year of Initiation	Year of Expiration
Brazil	Universidade do Estado de Santa Catarina	Memorandum of Agreement	2011	2016
Brazil	Escola Superior de Agricultura "Luis Queiroz"/Universidade de Sao Paulo	Memorandum of Understanding	2012	2017
Brazil	Universidade Federal de Viçosa	Memorandum of Understanding	2012	2017
Brazil	CAPES/MEC	Memorandum of Understanding	2012	2017
Brazil	Universidade Federal do Paraná	Memorandum of Agreement	2014	2019
Brazil	Universidade Estadual Paulista	Memorandum of Understanding	2013	2018
Colombia	Technological University of Pereira	Memorandum of Agreement	2010	2015
France	FESIA Consortium	Memorandum of Agreement	2011	2016
Ghana	Evangelical Presbyterian University College	Memorandum of Understanding	2014	2019
Greenleaf	Greenleaf International Agriculture Research Consortium (GIARC)	Memorandum of Understanding	2012	2017
Honduras	Escuela Agrícola Panamericana – "El Zamorano"	Memorandum of Understanding	2014	2019
India	Indian Council of Agricultural Research (ICAR)	Memorandum of Agreement	2014	2019
Israel	The Hebrew University of Jerusalem, The Robert H. Smith Faculty of Agriculture, Food and Environment	Memorandum of Agreement	2011	2016
Macedonia	University of SS. Cyril and Methodius	Memorandum of Understanding	2013	2017
Pakistan	The University of Agriculture	Memorandum of Understanding	2013	2018
China	Hunan Agricultural University	Memorandum of Agreement	2010	2015
China	Hubei Academy of Agricultural Sciences	Memorandum of Understanding	2014	2019
China	Jilin Agricultural University	Memorandum of Understanding	2014	2019
Romania	University of Agricultural Sciences & Veterinary Medicine	Memorandum of Understanding	2014	2019
Senegal	University of Gaston Berger	Memorandum of Agreement	2013	2018
Tanzania	Sokoine University of Agriculture	Memorandum of Agreement	2012	2016
Tunisia	National Institute of Agronomy of Tunisia	Memorandum of Understanding	2013	2018
Uganda	Makerere University	Memorandum of Understanding	2013	2018
Uganda	Makerere University	Memorandum of Agreement	2013	2018
Ukraine	Dnipropetrovsk State Agrarian and Economic University	Memorandum of Understanding	2015	2020

# Awards and Recognition

## Wolf Prize in Agriculture

*"First Ohio State scientist and the first woman to receive this recognition"*

**Dr. Linda Saif**, PhD, Honorary Diplomate ACVM, a Distinguished University Professor in the Food Animal Health Research Program at the Ohio Agricultural Research and Development Center, was the 2015 recipient of the Wolf Prize in Agriculture for her work on viral diseases of critical importance to farm animals, food safety, and human health. The award, which is awarded by the Wolf Foundation in Israel, recognizes eminent international scholars in the fields of chemistry, mathematics, medicine, physics and the arts. Dr. Saif officially received the award on May 31, 2015, at the Knesset – the Parliament of Israel.



*Dr. Linda Saif*

## International Alumni Award

Dr. Ruperto Sangalang, a 1984 Ph.D. graduate of Rural Sociology, was selected as the 2015 recipient of the College of Food, Agricultural, and Environmental Sciences' International Alumni Award. Dr. Sangalang was honored at the annual CFAES Awards Ceremony on March 7, 2015.

At Ohio State, Ruperto was a Fulbright-Hays Scholar, a member of Phi Kappa Phi, and a member of Gamma Sigma Delta. In the years since graduating from Ohio State, Ruperto has maintained ties through visits and short-term residencies, including his Fulbright Research Fellowship appointment in 1988. He continues to collaborate with faculty members in the College of Food, Agricultural, and Environmental Sciences to ship books and research journals to state universities in the Philippines.

He is currently Professor and President Emeritus of Cavite State University on assignment to the Commission on Higher Education in the Philippines.



*Dr. Ruperto Sangalang*

## Gamma Sigma Delta's International Award of Merit



*Dr. Mark Erbaugh accepts 2015 Award of Merit*

**Dr. Mark Erbaugh**, Director of International Programs in Agriculture (IPA) was the 2015 recipient of the International Award of Merit, awarded by the Gamma Sigma Delta chapter at Ohio State. Dr. Erbaugh was recognized along with other award recipients during Gamma Sigma Delta's Annual Awards Ceremony on February 20, 2015.

While Diane Shoemaker, President, Gamma Sigma Delta – Ohio State Chapter, presented the award, Dr. Kimberly Cole, Vice President of Gamma Sigma Delta and Associate Professor in Animal Sciences, acknowledged Dr. Erbaugh's historic international engagement in Sub-Saharan Africa during his tenure in IPA, as well as throughout his Peace Corps service in Swaziland.

Gamma Sigma Delta, is an international honor society for agricultural professionals, was founded at The Ohio State University in 1905. The organization currently has 52 chapters throughout the U.S. and in Honduras, Puerto Rico, and the Philippines.

# Faculty Scholarly Presentations Abroad

Name	Presentation Title	Venue	Country
<b>Agricultural Communication, Education, and Leadership</b>			
Graham Cochran	University Contributions to Community Education in the United States: Lessons from Ohio State University and the U.S. Cooperative Extension System	2015 Global Forum on Lifelong Learning	South Korea
	University Contributions to Community Education in the United States: Lessons from Ohio State University and the U.S. Cooperative Extension System	Graduate Student Seminar for the Department of Agricultural and Vocational Education, College of Agriculture and Life Sciences at Seoul National University	South Korea
	U.S. and Ohio Extension System: Current State, Case Studies, and Future Practices	Korean Rural Development Administration	South Korea
<b>Agricultural, Environmental, and Developmental Economics</b>			
Abdoul Sam	Impact of Off-farm Income on Agricultural Technology Adoption Intensity and Productivity: Evidence from Rural Maize Farmers in Uganda	Triennial Conference of the International Association of Agricultural Economists	Italy
Alessandra Faggian	The University of Queensland, Brisbane, Australia	8th ICPG conference, The University of Queensland	Australia
Brent Sohngen	How valuable is adaptation - climate change in forestry? Invited Presentation.	New Frontiers in Forest Economics Conference, Peking University	China
	Heterogeneous preferences for water quality attributes: A choice experiment of Lake Erie recreational anglers. Selected Paper.	Annual Meetings of the Australian Agricultural and Resource Economics Society.	New Zealand
	"Is bioenergy carbon neutral? An economic analysis." Invited Presentation	Umeå Renewable Energy Meeting 2015	Sweden
	"Dynamic Models and Carbon Sequestration in Forests. Invited Presentation: Centre for Environmental and Resource Economics,	Umeå School of Business and Economics. University of Umea	Sweden
Brian Roe	"Measuring the Risk Attitudes of Farmers Vs Non-farm Business Owners,"	INRA Workshop on Farmers' Risk Preferences: Elicitation and Use	France
Ian Sheldon	"Imported Intermediate Inputs and Firms' Productivity Growth: Evidence from the Food Industry"	International Conference for Agricultural Economists	Italy
	"Contract (In) Completeness, Product Quality and Trade – Evidence from the Food Industry"	International Conference for Agricultural Economists	Italy
	"Regulation of Food Quality: Deep Capture and Economies of Scope between Innovation and Influence",	International Conference for Agricultural Economists	Italy
Mark Partridge	"Are Resource Booms Worth the Inevitable Bust?"	Keynote presentation at the Institute of Australian Geographers Conference.	Australia
	"Are Resource Booms Worth the Inevitable Bust?"	Australian Commonwealth Scientific and Industrial Research Organisation (CSIRO)	Australia
	"Challenges in Understanding Migration Patterns and Scenarios Under Climate Change."	Presentation to The Ohio State University Discover Theme	China
	"Agglomeration Economies and Spatial Equilibrium."	Jinan University School of Economics	China
	"Place Based or Geographically Targeted Policies and Their Effectiveness."	Economics and Management School at Beijing Forestry University	China
	"Local Labor Market Flexibility in a Perceived Low Migration Country: The Case of French Labor Markets."	Southwestern University of Finance and Economics	China
	"Are the Most Productive Regions Necessarily the Most Successful?"	CIDE Workshop in Regional Productivity	Mexico
	"Local Labor Market Flexibility in a Perceived Low Migration Country: The Case of French Labor Markets."	15th Annual Tinbergen Institute Workshop	Netherlands
	"Local Labor Market Flexibility in a Perceived Low Migration Country: The Case of French Labor Markets."	Lund University, Circle Seminar	Sweden
Stanley Thompson	"What Can be Said About Trade Quality Between Brazil and Major Developed Countries?"	Economics Meetings of the Southern Region, Porto Alegre.	Brazil

Name	Presentation Title	Venue	Country
	Invited short-course: "Research Methods in the Social Sciences"	International Summer School Renmin University	China
	"Capitalization of the SPS into Agricultural Land Rental Prices under Harmonization of Payments."	International Association of Agricultural Economists (IAAE) Conference	Italy
	Presentation in Ukraine: "Capitalization of the SPS into Farmland Rental Rates under the 2013 CAP Reform."	Presentation in Ukraine	Ukraine
<b>Food Animal Health Research Program</b>			
Anastasia Vlasova	Differential effects of Escherichia coli Nissle and Lactobacillus rhamnosus strain GG on human rotavirus infection and B cell responses	International Congress of Mucosal Immunology (ICMI 2015)	Germany
Gireesh Rajashekara	Foodborne pathogens: Current issues and novel control strategies	Sokoine University of Agriculture	Tanzania
Linda Saif	Wolf Award Science Denial/Vaccine Panel Presentation	Wolf Award	Israel
	Wolf Award Presentation	Wolf Award	Israel
	Passive immunity and vaccines for porcine epidemic diarrhea virus (PEDV): lessons from TGEV vaccines	7th International Symposium on Emerging and Re-emerging Pig Diseases (ISERP2015)	Japan
	Human rotavirus vaccines evaluated in germfree pigs	University of Tokyo Presentation	Japan
	Bovine Coronaviruses: Vaccines and Lessons for MERS in Camels	The 9th Annual Conference of Saudi Society of Medical Microbiology and Infectious Diseases	Saudi Arabia
	Immunology Symposium: Gut reactions to rotavirus vaccines: Strategies to improve efficacy in developing countries	Weizmann Institute	Israel
	Evasive Coronavirus Vaccines: Strategies for PEDV Vaccines and Lessons from TGEV Vaccines	European Soc Vet Virol Mtg	France
	Differential effects of Escherichia coli Nissle and Lactobacillus rhamnosus strain GG on human rotavirus infection and B cell responses	ICMI 2015, Society of Mucosal Immunology	Germany
Qihong Wang	Evaluation of the virulence of a US spike-insertion deletion (S-INDEL) PEDV and its cross-protection against the US original highly virulent PEDV in suckling piglets.	The 7th International Symposium on Emerging and Re-emerging Pig Diseases 2015 (ISERP2015)	Japan
	Calicivirus in Food Safety	Tokyo Medical Society, University of Tokyo	Japan
Renukaradhya Gourapura	Nanoparticles encased conserved peptides of Influenza virus elicit cross-protective T cell response	Department of Veterinary Microbiology and Public Health, Kamataka Veterinary, Animal and Fisheries Sciences University	India
	Nanotechnology based viral vaccines: a novel strategy to elicit cross-protective response in pigs	Institute of Virology and Immunology	Switzerland
<b>Food Science and Technology</b>			
Jiyoung Lee	Drinking water quality in rural Far North, Cameroon: analysis of contamination sources, hygiene behaviors, and health outcomes	Third International Congress on Pathogens at the Human-Animal Interface	Thailand
Ahmed Yousef	Chilean Salmon Industry	Chilean Salmon Industry	Chile
	Emerging foodborne pathogens with potential significance to the middle east	10th Dubai International Food Safety Conference	United Arab Emirates
Hua Wang	Global collaboration on antibiotic resistance mitigation and food safety.	China National Center for Food	China
	Innovative research and mitigation on antibiotic resistance: recent advancements.	SCUT Foreign Expert Master Seminar, South China University of Science	China
	Innovative research and mitigation on antibiotic resistance: recent advancements.	South China Agricultural University	China
	Antibiotic resistance: non-pathogenic bacteria, food safety and innovative research and mitigation outcomes	Fudan University Forum on Science and Technology	China

Name	Presentation Title	Venue	Country
	Global collaboration in food safety research, education and extension	Shanghai Academy of Agricultural Sciences	
	Global collaboration in food safety research, education and extension.	Fudan University	China
	Global collaboration in food safety research, education and extension	Ministry of Agriculture	China
M Giusti	Intramolecular and intermolecular copigmentation of acylated cyaniding derivatives from Red Cabbage for the production of blue colors	MARS Anthocyanin Research Meeting at the Scuola Internazionale Superiore di Studi Avanzati (SISSA)	Italy
Melvin Pascall	Food packaging research in the Food Science Department, OSU	South China Univ. of Technology, Fudan Univ., Min. of Ag., Chinese Academy of Ag. Sc.	China
	Shelf life extension using sanitized ice	International Conference on Translation Research - joint conference between College of Medicine and Avinashilingam University	India
Steven Schwartz	Understanding Bioavailability and Metabolism of Carotenoids in Processed and Formulated Foods	University of Hohenheim	Germany
	Synthesis, formation, occurrence and function of apolycopenoids: Naturally-occurring acycloretinoids?	3rd International Conference on Retinoids	Japan
	Hass Avocados Enhance Bioavailability and Bioconversion of Carotenoids from Fruits and Vegetables in Humans	VIII World Avocado Congress	Peru
	Influence of different tomato and lycopene diets on the metabolic profile of mice	2nd International Symposium on Profiling	Peru
	Understanding Absorption and Metabolism of Carotenoids	2015 KoSFoST International Symposium and Annual Meeting	South Korea
V M Balasubramanian	Process engineering principles in the development and application of high pressure based technologies for the food industry.	12th International Congress on Engineering and Food (ICEF12)	Canada
	Nonthermal Technologies for Food.	12th International Congress on Engineering and Food (ICEF12)	Canada
Valente Alvarez	Antibiotic resistance Mitigation and Dairy Food Safety	Global Collaboration Conference on Antibiotic Resistance Mitigation and Food Safety: Science, Innovation and Strategies	China
	Microbiology and Quality of Milk During Handling and Shelf-life	International Conference on Food Safety	Mexico
<b>Food, Agricultural and Biological Engineering</b>			
Frederick Michel	Optimisation of pretreatments for corn and cellulosic ethanol production	Centre for Sustainable Chemical Technologies Summer Showcase, University of Bath	United Kingdom
Yebo Li	Solid-state anaerobic digestion: challenges and opportunities	2015 International Composting Conference	China
Sudhir Sastry	Open innovation: an academic perspective	International Congress on Engineering and Food (ICEF12)	Canada
	A quarter-century of emerging process technologies: from the demonization of heat to the confluence of thermal and nonthermal.	International Congress on Engineering and Food (ICEF12)	Canada
	Electric field processing: at the interface between thermal and nonthermal.	2015 International Nonthermal Processing Workshop	Greece
	Electrothermal processing: combining heat and electric fields.	Institute for Thermal Processing Specialists' (IFTPS) 5th. European Conference,	Spain
<b>Horticulture and Crop Science</b>			
John Finer	Transgene expression analysis in soybean	Satya Wacana Christian University	Indonesia
David Francis	El manejo de plagas usando la resistencia genética: nuevos métodos para problemas antiguos y los métodos clásicos para problemas emergentes.	1er Simposio Internacional de Manejo Integrado de Plagas (MIP) en Solanáceas	Ecuador
Imed Dami	Freezing Tolerance of Vitis Vinifera Cultivars New to Northeastern United States	19th International Symposium of the Group of International Experts of Vitivinicultural Systems for CoOperation (GiESCO) Viticulture Conference	France
	Exogenous Abscissic Acid Increases Bud Freezing Tolerance of Vitis vinifera 'Pinot gris' Grown in Cold Regions of the United States	19th International Symposium of the Group of International Experts of Vitivinicultural Systems for CoOperation (GiESCO) Viticulture Conference	France

Name	Presentation Title	Venue	Country
Michelle Jones	Identifying genes involved in pollination-induced corolla senescence in petunia using RNA-sequencing	14th World Petunia Days	Switzerland
Jyan-Chyun Jang	Tandem CCCH Zinc Finger proteins in plant growth and stress responses	Hunan Agricultural University	China
	Tandem CCCH Zinc Fingers in plant growth and stress responses	Chinese Academy of Sciences	China
	Plant Tandem Zinc Finger proteins in RNA binding and decay	Chinese Academy of Sciences	China
Kristin Mercer	Adaptation of crop landraces to environmental variation in an era of climate change: maize and chile in Mexico	University of British Columbia, Biodiversity Research Centre Lunch Seminar Series	China
Ohio State Extension			
Sanja Ilic	Listeria monocytogenes in vegetable production in North America	Sokoine University of Agriculture	Tanzania
Francis Barker	GIS Farm Record-Keeping	Farm Record-Keeping	Ukraine
Gustavo Schuenemann	Factores de riesgo y enfermedades de la vaca en transición	Curso de Posgrado - La vaca en transición: manejo y toma de decisiones, Departamento de Producción	Argentina
	Hipocalcemia y cetosis: prevención y tratamiento en vaca lecheras	Curso de Posgrado - La vaca en transición: manejo y toma de decisiones, Departamento de Producción	Argentina
	Epidemiología de las pérdidas embrionarias y fetales en vacas lactando	Curso de Posgrado - La vaca en transición: manejo y toma de decisiones, Departamento de Producción	Argentina
	Efecto del manejo preparto sobre la eficiencia reproductiva en vacas lactando	Curso de Posgrado - La vaca en transición: manejo y toma de decisiones, Departamento de Producción	Argentina
	Caso de estudio: evaluación de factores de riesgo de eficiencia reproductiva (qué mirar, importancia, monitoreo)	Curso de Posgrado - La vaca en transición: manejo y toma de decisiones, Departamento de Producción	Argentina
	Management practices for successful calving	Western Canadian Dairy Seminar	Canada
	Improvement of reproductive performance with emphasis on transition cow management	International Symposium: Global approach to control of diseases and improvement of	Japan
	Integrando Equipos de Trabajo de alto Desempeño	ENGALC	Mexico
Peggy Hall	Farm Land Leasing Workshops--Current Lease Arrangement Findings	International Farm Management Association 20th Congress 2015	Canada
Theresa Ferrari	Water First for Thirst: Teen leaders as advocates for healthy living	5th International Conference on Health, Wellness, & Society	Spain
	Adolescents' perspectives on challenges and support experienced during a parent's military deployment	Fifth International Conference on Health, Wellness, & society	Spain
James Hoorman	ECO Farming: Improving soil ecology and nutrient recycling	SANTFA Annual Conference, Australia	Australia
Plant Pathology			
Guo-Liang Wang	Dissecting the molecular mechanism of AvrPiz-t-Piz-t-triggered resistance against Magnaporthe oryzae,	3rd Beijing International Symposium on Molecular Plant Pathology (3rd BISMPP),	China
	Principles and Applications of Plant Genomics, Hainan	Hainan University,	China
	Molecular Mechanism of Rice Resistance and Breeding Strategies against Magnaporthe oryzae,	HuaZhi Bitech Company	China
	Molecular Mechanism of Rice Resistance and Breeding Strategies against Magnaporthe oryza	China Agriculture University	China
	Roles of the Ubiquitination Proteasome System in Rice Immunity	Institute of Genetics And Developmental Biology , CAAS	China
	Recent Progress in Dissecting the PTI and ETI Pathways in Rice	Institute of Plant Protection, CAAS,	China

Name	Presentation Title	Venue	Country
	Molecular Dissection of Rice Innate Immunity to Magnaporthe oryzae,	Department of Soil and Crop Sciences, Sokoine University of Agriculture	Tanzania
	Function of two rice E3 ligases targeted by the fungal effector AvrPiz-t	Sichuan Agricultural University	China
	Molecular Basis of Rice Immunity Against Magnaporthe oryzae,	College of Life Sciences, Wuhan University	China
	Genome-wide association mapping of new rice resistance genes to Magnaporthe oryzae isolates from four African countries.	ARC Workshop organized by the B&M Gates Foundation	United Kingdom
	Genome-wide association mapping of new rice resistance genes to Magnaporthe oryzae isolates from four African countries	Annual meeting of the African Rice Blast Project	Kenya
Pierluigi Bonello	Mechanisms of Drought-Induced Susceptibility of Austrian Pine to Diplodia sapinea	Genetics of Tree-Parasite Interactions	France
	Fourier-transform infrared (FT-IR) spectroscopy discriminates Chamaecyparis lawsoniana (Port-Orford-cedar) individuals that are resistant and susceptible to the invasive pathogen Phytophthora lateralis	Genetics of Tree-Parasite Interactions	France
	Constitutive phenolic biomarkers identify Quercus agrifolia (coast live oak) resistant to the invasive pathogen Phytophthora ramorum	Genetics of Tree-Parasite Interactions	France
	Abiotic stress and mechanisms of induced tree susceptibility to fungal pathogens	IUFRO Tree Biotechnology Conference 2015	Italy
Pierce Paul	Practical and Economic aspects of Decision making in Plant Disease Management	Brazilian Congress of Plant Pathology	Brazil
Sally Miller	Biology and management of bacterial diseases of Solanaceous vegetables	INIAP First International Symposium on Integrated Pest Management of the Solanaceae: Knowledge for Healthy Food Production	Ecuador
	Linking soil and plant health to improve tomato production in the Morogoro Region of Tanzania	Sokoine University of Agriculture	Tanzania
<b>Environment and Natural Resources</b>			
Brian Lower	Pushed, Poked, and Prodded: Documenting Changes in Magnetotactic Bacteria from Wetland to Pure Culture	25th Annual Goldschmidt Conference	Czech Republic
Rattan Lal	Soil and Society	Alberta Soil Science Workshop	Canada
	Soil and Global Peace	39th annual conference of the Soil Science Society of Nigeria	Nigeria
	Soil Carbon Sequestration and Climate Change	VIII Costa Rican Soil Science Congress	Costa Rica
	Beyond DNC-2015	Dresden Nexus Conference	Germany
	Soil Security and Carbon Sequestration	Malaysian Society of Soil Science,	Malaysia
	Challenges of Measuring and Managing Soil C Sink for Mitigating Climate Change,	Global Soil Week 2015	Germany
	Soil as a Sink of Atmospheric CO <sub>2</sub> and CH <sub>4</sub>	Global Soil Week 2015	Germany
	Environmental Sustainability	International Conference on Climate Change and Multi-dimensional Sustainability in African Agriculture	Tanzania
	Managing Landscape for Environmental Sustainability	International Conference on Climate Change and Multi-dimensional Sustainability in African Agriculture	Tanzania
	Global Issues and IUSS	International Conference on Climate Change and Multi-dimensional Sustainability in African Agriculture	Tanzania
	Achieving Emission Neutrality in Australia by Managing Terrestrial Carbon Pool and Using Nuclear Energy	Cooperative Research Center for Contamination Assessment and Remediation of the Environment (CRC-CARE) National Workshop	Australia
	Carbon Sequestration in Soils: A Challenge for Food Security and Climate Action	INRA	France
	Soil Carbon Pool as an Environmental Indicator	International Conference on Environmental Indicators (ICEI)	Canada
	Integrated Resource Management for Efficient Food Production	International Soil Conference on "Sustainable Uses of Soil in Harmony with Food Security (ISC2015)	Thailand

Name	Presentation Title	Venue	Country
	Soil Science and Societal Challenges in the FACCE Remit	Thematic Annual Programming on Improving Soil Quality Workshop	Netherlands
	Soil and Sustainability	Japanese Society of Soil Science	Japan
	Soil Restoration for Ecosystem Services	IUSS Sustain 2015 Conference	Germany
	The Societal Value of Soil Organic Matter and Ecosystem Services	5th International Symposium on Soil Organic Matter	Germany
	Land Use Effect on Coupled Cycling of Carbon and Water in a Changing Climate	Technical University, Dresden	Germany
	Evolution of Conservation Agriculture	Institute of Soil and Water Conservation	China
	Soil science in the 21st century	International Youth Forum on Soil and Water Conservation	China
	Solutions Underfoot: The Power of Soils	Austrian Academy of Science	Austria
	International Context of SOC Sequestration	FACCE-JPI Meeting	Ireland
	Sustainable Management of Agricultural Soils	Kerala Forest Research Institute	India
	Soil carbon sequestration and management to mitigate climate change	1st International Conference : Afro-Mediterranean Soils: Constraints and Potentialities for Durable Management	Morocco

# Bangladeshi Graduate Student Addresses Food Insecurity in Home Country Through Research at Ohio State

Beau Ingle, Program Manager, Office of International Programs in Agriculture, The Ohio State University.

March 12, 2015

9.6 billion. That is what the global population is expected to reach by the year 2050, precipitating an unprecedented demand for food and other resources. The statistic and its implications have dominated discussions at recent international meetings and symposia, with a particular emphasis on the need to sustainably intensify agricultural production. Often overlooked however is how the world's developing regions are beginning to look beyond their staple food sources - rice, corn, beans, and conventional livestock to name a few - and more towards fish and other seafood to feed their growing populations. This trend has been the motivation behind research conducted by Mohammad Ashraful Alam, a Ph.D. student in fisheries and wildlife in the School of Environment and Natural Resources.

Alam is a Bangladeshi student completing his doctoral degree at Ohio State with funding from the Borlaug Higher Education for Agricultural Research and Development (BHEARD) Program, which is administered by Michigan State University and funded by the U.S. Agency for International Development (USAID) in partnership with the Association of Public and Land-grant Universities (APLU) and the International Maize and Wheat Improvement Center (CIMMYT). Along with 3 other BHEARD-sponsored graduate students – two in the Department of Plant Pathology and one in the Department of Agricultural, Environmental, and Development Economics - Alam is seeking to address serious agricultural and nutritional needs in his home country through his graduate research, thereby building the technical capacity of his home institution and enhancing food security in Bangladesh. Bangladesh is one of 19 countries that have been prioritized by USAID through the Feed the Future Initiative.

Because of Bangladesh's already high population density - approximately 160 million people in an area of land the size of Iowa - and with the population projected to continue to increase in the coming years, Alam outlines the "excessive nutritional demand" facing his country and how fish is vital to filling this nutrition deficit.



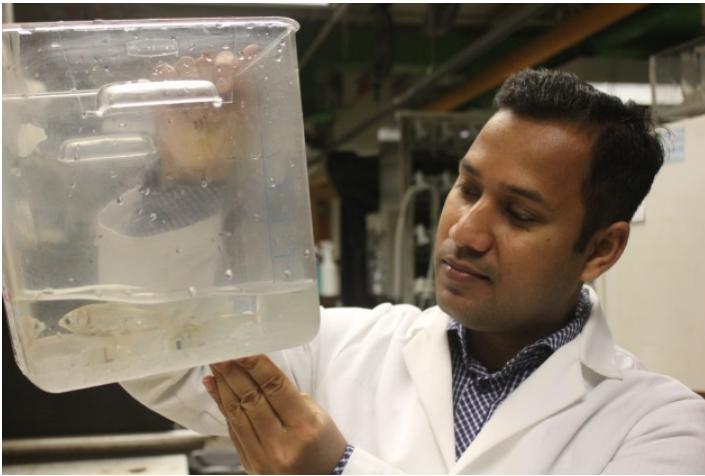
*Mohammad Ashraful Alam, a Ph.D. student in the School of Environment and Natural Resources at Ohio State University, conducts aquaculture research in the lab of Professor Konrad Dabrowski.*

"Fish is playing a vital role in meeting the nutritional demands of the people in Bangladesh," shares Alam. In fact, Bangladesh now ranks 5th in the world for farmed fish production according to the United Nation's Food and Agriculture Organization's 2014 "State of World Fisheries and Aquaculture" report.

"However, to keep up with the demand of 160-plus million people, we definitely need new, dynamic, and cost-effective technologies for aquaculture systems."

In an effort to contribute to this need for new knowledge, Alam is working with Dr. Konrad Dabrowski, professor of aquaculture in the School of Environment and Natural Resources, to study how water temperatures affect the growth and physiology of freshwater fish species, including big-head carp (*Hypophthalmichthys nobilis*).

"Basically I'm trying to determine what is the most suitable temperature range for these species at their various growth stages," explains Alam, who says that this information is imperative for determining the optimal



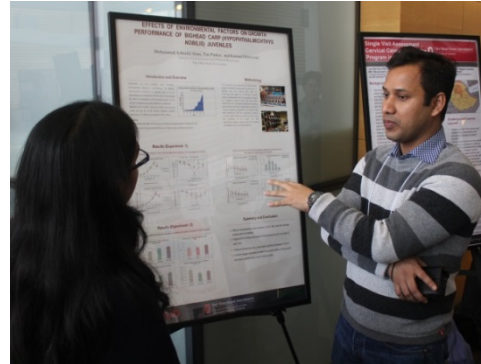
*Alam's research, which focuses on fish growth and development, will improve aquaculture knowledge not only here in the U.S. but also in his home country of Bangladesh.*

temperatures for fish to feed and grow. This knowledge can then be shared with aquaculturists trying to improve and maximize their own artificial fish production systems - systems that have become heavily relied upon to meet the growing food demand, all while wild fish stocks in Bangladesh diminish as a result of overfishing, environmental degradation, and climate change.

Alam notes that his research not only has positive implications for food security in Bangladesh, but also plays a role in conserving biodiversity and promoting environmental stewardship in South Asia. Because of the demand Bangladesh's aquaculture markets have experienced throughout the past several years, some aquaculturists have opted to import, farm, and market fish species non-native to Bangladesh, such as the African sharptooth catfish (*Clarias gariepinus*) and various piranha species. Individuals from these non-native populations then escape or are introduced by other means into the surrounding ecosystem, an occasion too common even here in the United States, and reproduce enough to sustain a population that then has the potential to threaten the ecological systems of native species.

Before coming to Ohio State University, Alam served as a Scientific Officer at the Bangladesh Fisheries Research Institute researching the presence of heavy metals in

aquatic systems. Metals such as lead, mercury, zinc, and cadmium are toxic to humans in high doses and can be present in effluents discharged into waterways from cement, fertilizer, and pharmaceutical companies in Bangladesh. Due to minimal environmental regulations and lax oversight of these industries, these metals can quickly accumulate in natural fish populations that inhabit adjacent waterways and which are a source of food for many Bangladeshis.



*Alam discusses his research poster at Ohio State's International Scholarship Symposium on February 27, 2015.*

Alam and his research program have certainly benefited from Ohio State and the School of Environment and Natural Resources' leading role in addressing a number of Ohio's water-related concerns, including the threat of invasive carp to Lake Erie or harmful algal blooms throughout the state. This level of engagement in important issues has already provided him the opportunity to present his research findings at the recent World Aquaculture Conference and Ohio State's International Scholarship Symposium.

So whether the effort is feeding his country's future generations or improving Bangladesh's ecological integrity, Alam is confident that his studies at Ohio State will better prepare him to tackle these major issues in Bangladesh and other areas of the world.

# Ohio State Faculty Build Capacity of Researchers in Ghana Through Soil Science Workshop

**Beau Ingle**, Program Manager, Office of International Programs in Agriculture, The Ohio State University.

September 23, 2015

Dr. Warren Dick, Professor in the School of Environment and Natural Resources, and Dr. Rafiq Islam, Research Scientist and Soil & Bioenergy Program Leader at Ohio State South Centers, recently traveled to Ghana from August 27- September 5, 2015 to deliver an innovative workshop entitled "Climate change, sustainable agriculture and soil health" at the University of Cape Coast.

The visit stemmed from their earlier participation in the Norman E. Borlaug International Agricultural Science and Technology Fellowship Program - a short-term research program, funded by the U.S. Department of Agriculture's Foreign Agricultural Service, that aims to address critical issues related to food security with a collaborating researcher from a developing or middle income country. These two Borlaug programs were managed by the Office of International Programs in Agriculture at The Ohio State University. While Dr. Islam advised Emmanuel Amoakwah, a research scientist at the Council for Scientific and Industrial Research's Soil Research Institute in Kumasi, Ghana, in 2013, Dr. Dick mentored Kwame Frimpong, a Senior Lecturer in the Department of Soil Science and a colleague of Emmanuel's, shortly after in 2014. Both Ghanaian researchers completed three month research fellowships with their respective advisors at The Ohio State University's College of Food, Agricultural, and Environmental Sciences, and are now back in Ghana applying the skills that they acquired and advancing novel research in the field of soil health and quality.

Ghana's University of Cape Coast, specifically its Department of Soil Science, hosted the two day workshop and welcomed more than 75 participants including university faculty members, graduate students, and research scientists from Ghana, Burkina Faso, and Liberia. During the workshop, several field-based measurement techniques such as residue measurement, soil texture, diversity of soil fauna, available nitrogen and phosphorus, soil pH, and active carbon tests were all demonstrated to the participants. In addition, a ready-to-use soil quality analysis handbook was provided to each participant as a future reference, along with an economic and convenient field-based soil test kit, which participants were taught how to use in field sessions.

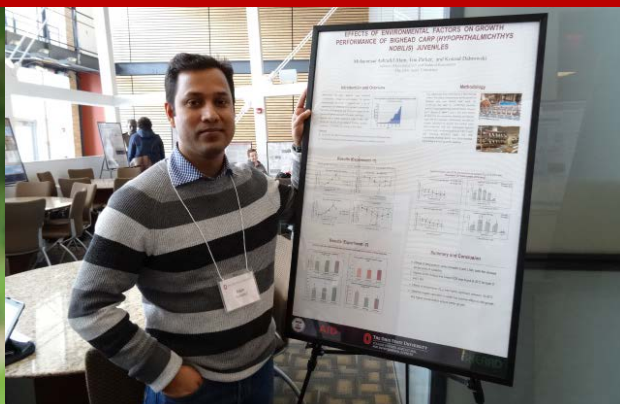
Dr. Dick presented on soil organic carbon and quality of science, while Dr. Islam delivered instruction on soil quality and sampling, and a systems approach to sustainable agriculture. One of the highlights of the workshop was a brain-storming session to identify priority-based research needs in Ghana to sustain agricultural production systems. According to Dr. Islam, the session prompted serious, but healthy debate amongst participants on the appropriate research approaches needed to promote greater soil health in a region of the world that is directly experiencing the effects of climate change.



"Low soil fertility and climate change are already affecting Ghana's dwindling natural resources and agricultural productivity," says Kwame Frimpong. "There's an urgent need for a clearer understanding and implementation of soil fertility management strategies that will promote increased agricultural productivity and food security in a socially equitable and an environmentally and economically sustainable manner."

The workshop's appeal and the quality of the information presented was reflected by the fact that attendance and interest truly exceeded everyone's expectations - to the point that not all of those interested could be accommodated. The modest registration fee far from dissuaded participation, but actually reassured and incentivized those searching for valuable training. Both Dr. Dick and Dr. Islam, along with Rian Lawrence, an undergraduate student in the School of Environment and Natural Resources who assisted with the development and delivery of the workshop, all deemed the workshop to be an overwhelming success.

"It was probably one of the most beneficial international programs I have been associated with," shared Dr. Dick, who has been engaged in international teaching and research, especially in Africa, for decades. "I definitely see this workshop style as a model for similar types of training activities in the future."



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