International Programs in Agriculture and Natural Resources

KOSOVO

September 2016
KOSOVO: Improving and Expanding Wine Production

IPAN is working with International Orthodox Christian Charities (IOCC), Baltimore, MD, to improve wine grapes and the wine produced for the Visoki Decani Monastery in western Kosovo. By improving the Monastery’s production capacity and wine quality, IOCC hopes to create jobs, improve living standards and bring stability to an area marked by ethnic strife. IPAN has partnered with IOCC on several projects to provide agricultural and extension assistance in Kosovo, Ethiopia, and Tanzania.

The Monastery’s winery and vineyards are located in Velika Hoča, an hour away. Winemaking has been done in the Velika Hoča area for over 600 years, and the winery produces 50,000 liters of wine each year. The area is in a river valley surrounded by mountains that shield it from cold winter winds but give way to a temperate Mediterranean climate.

In October 2015, Joe Fiola, AGNR’s Viticulture Specialist, and Dan Kugler, IPAN, traveled to Velika Hoča village, where they met Father Marko, the Monastery’s wine technologist. Dr. Fiola added varying levels of tannins and taste tested oak chip blends, with the goal of creating a premium wine that can be sold at a higher price. The sales help support the mission of the Monastery. Fr. Marko and our IOCC colleagues visited Dr. Fiola’s WMREC lab and trial plots and several Maryland wineries in May 2016.

We are continuing to work with IOCC on advancing the Velika Hoča wine industry for the Visoki Decani Monastery.
Kosovo: University of Pristina

We are also working with the Faculty of Agriculture at the University of Pristina to improve grain, vegetable and fruit production in vulnerable rural communities there. IOCC is installing grain mills for the farmers to process their locally grown grains. The flour will then be used for humanitarian aid and commercial bread products to be distributed by the Monastery. The Faculty of Agriculture is interested in developing cooperative extension, in which the university would conduct applied research and work with farmers and agri-businesses to improve the quality and production of vegetables and fruits.
Malawi sits in Southeastern Africa, near Tanzania and Mozambique. The size of Pennsylvania, but with more than 17 million people, Malawi is one of the poorest countries in the world. Stan Juma is part of a cadre of Malawian and African graduate students chosen by the Norman E. Borlaug Leadership Enhancement in Agriculture Program (Borlaug LEAP) for the prestigious Fellowship.

Borlaug LEAP matches Fellows with U.S. university researchers and a Consortium of International Agricultural Research (CGIAR) Center mentor. In a competitive process, Dr. Ray Weil, Department of Environmental Science & Technology, proposed working with Stan Juma. Ray is a soil scientist who worked in Malawi in the 1970s and considers it his “second home.”

Stan’s goal is to improve his skills and education with U.S. university researchers and return to his country where he can have a significant impact in research or shaping policy.

Stan reflects on his work as a Borlaug LEAP Fellow and returning to Malawi:

I am working with Dr. Weil in several projects, taking both soil and plant samples at several farms in the eastern shore farms, as well as near Frederick, Clarksville and the UMD research farm (Hayden) and working in the lab, grinding both soils and plant tissue samples for analysis and also analyzing samples for active carbon and sulfur in soybean.

What is the significance of your fellowship to Malawi.

The fellowship has helped me gain lots of skills that I never had and which was a gap in Malawi. The outstanding one is the management of cover crops under no till/Conservation Agriculture maize production system.

Agriculture in Malawi is facing lots of challenges which also affect adoption of improved and sustainable farming technologies. Identifying and promoting cover cropping in Maize cropping systems can help solve most if not all of these challenges. The advantages are too numerous to be discussed, but the main ones are reduced labor, reduced inputs costs (herbicides and fertilizers), improved carbon sequestration and nitrogen cycling, improved soil biology, fertility and health. Promoting this in Malawi would contribute to Agriculture Revolution in Malawi which we need right now and which I want to be part of. Currently, I together with a team of 5 young Malawian LEAP scholars...
wian scientists have submitted for registration, the first ever Agronomy Society of Malawi which we feel will be a platform to initiate and promote this revolution.

IPAN: Is a PhD in your future?
Yes, my career path is clear now and I believe I have taken a good direction in as far as my area of expertise is concerned. I have learnt a lot from Dr. Ray Weil and he is a big figure and model in my life. I would love to increase my level of knowledge in my area, do a lot of insightful research and provide a wide range of solutions and improvement to existing challenges and would grab every PhD opportunity that would come my way. UMD would be my first choice, God willing.

Photos courtesy of Dr. Ray Weil

The ENST graduate student "Deep-N" team take soil samples from 2 meters deep to study leaching loss of nitrogen and how to prevent it. Left to Right: Anthony Dattilio, Phil Schwartz, Keri Gran, Albert Soo, Stan Juma, Allen Burke

ISSS website contains detailed information:

J-1 Visiting Scholar Tips for Faculty

Plan Ahead—the process can take months!

- First thing: contact your Business Office about your plans. They will guide you through the paperwork.
- Determine funding for Scholar’s appointment. Will Scholar have a grant, fellowship, or will he/she need extra funding?
- When you issue a letter of invitation, include these key items:
  - Name of PI
  - Description of research
  - Dates Scholar will be at UMD
  - Who is providing funding
  - Statement that Scholar will return to home country
- The Business Office and International Student and Scholar Services (ISSS) need the Scholar’s CV, passport scan, evidence of English proficiency, and data collection sheet
- When Scholar arrives, he/she must:
  - check in with ISSS
  - purchase health insurance. The Health Center sells insurance.
  - Get University ID card
  - Talk to Business Office about a Working Fund advance for stipend or per diem

Photos courtesy of Dr. Ray Weil

Stan measuring active soil carbon
Barret Wessel, Denmark

Barret Wessel, a Ph.D. student in the Department of Environmental Science and Technology, has been awarded a Fulbright Grant for research in Denmark. He will study two marine ecosystems and apply soil science approaches to generate benthic (sediment and substratum) maps and conceptual models. He has secured affiliations with Drs. Erik Kristensen and Mogens Flindt of the University of Southern Denmark. Upon his return to the U.S. he plans to complete his dissertation, pursue a professorship, and continue to research geographically diverse marine ecosystems, particularly in Nordic countries.

From University of Maryland news, UMD RIGHT NOW

2+2 Program with China Universities Continues to Grow

AGNR is welcoming 18 students from China this Fall, as the 9th cohort to study here. All of the students have completed at least two years at their home university before coming to UMD. One of the attractions of the program is the potential to earn a degree from UMD and the home university.

The students apply in the Spring to their university coordinator and then must have top grades and English language in order to be referred to AGNR for admission.

Thirteen students are transferring from China Agricultural University (CAU) and five students are from Northwest Agriculture & Forestry University (NWAFU). Majors in AGNR’s Department of Agricultural and Resource Economics (AREC) are the most popular, with Department of Nutrition and Food Science (NFSC) in second.

In Fall 2015, IPAN began teaching an UNIV 100 class just for the Chinese students, to help them navigate university resources, such as using the library and career center.

The majority of the 2+2 students enter graduate school and several are in PhD programs.

Photo by Ann Leger

2016-17 AGNR Student Exchanges

Full Year
Ilona Wittenberg, NFSC, to University College Cork Undergraduate Courses

Fall Semester
Hope Loiselle, ENSP, to University of Auckland (New Zealand)
Elizabeth Sese, ENSP, to School for Field Studies in Tanzania
Maggie Wartman, ENSP, to EcoQuest New Zealand
Twenty years from now you will be more disappointed by the things you didn’t do than by the ones you did do. So throw off the bowlines. Sail away from the safe harbor. Catch the trade winds in your sails. Explore. Dream. Discover

— Mark Twain

Maya Wallick, ANSC senior, participated in a Spring 2016 student exchange to University College Dublin

I’m entering my senior year. I always knew I wanted to study abroad in college. My mom studied abroad in Russia while in college and really encouraged me to do something similar. I wanted to experience living in a different country for a long period of time so that I could really become familiar with a different city and culture.

I chose Ireland because I grew up listening to Van Morrison’s music. I soon became obsessed with all things Irish, so it’s only fitting that I study abroad in Ireland.

As an in-state student, the exchange program was the cheapest option for me to study abroad because I was able to pay the same tuition as my UMD tuition.

I took four classes while abroad (January-May 2016); three for my major, and one elective: Experimental Design and Data Analysis, Animal Behavior, Animal Nutrition II, and Introduction to Archaeology of Ireland. I would recommend this institution to anyone interested in studying abroad because I think they did a very good job of accommodating exchange students.

Photo courtesy of Maya Wallick

Maya in County Kerry, Ireland, with lamb
Over 70 delegates from 13 countries participated in the International Acid Sulfate Soils Conference, in College Park, MD, from July 13-17, 2016.

The UMD Dept. of Environmental Science and Technology (ENST) hosted the conference, along with co-sponsors College of Agriculture and Natural Resources, USDA-Natural Resources Conservation Service, Virginia Tech University, Soil Science Society of America, Smithsonian Environmental Research Center — among other notable institutions.

Acid Sulfate soils cover extensive areas on tropical coasts, South-East Asia, the Caribbean and Western Africa. They are found widespread on the coasts of Australia and around the Baltic Sea. When drained, metal sulfides that have accumulated in the subsoil are gradually oxidized, giving rise to the acidification of soil and drainage waters, often with detrimental ecological consequences. If reclaimed for agriculture, these soils are commonly used for growing rice or sugar cane in the tropics. In temperate areas they are often drained more intensively, exposing sulfides to oxidation also in deeper horizons. These soils are impacted by change in sea level and climate events.

**The Program and Tours**

The program for the meeting covered the chemistry and physics of sulfidization (the mostly biologically-driven accumulation of sulfide minerals) and sulfurization (the mostly biologically-driven oxidation of sulfides leading to extreme acidity. Other sessions addressed various reclamation issues of acid soils, as well as U.S. policy and worldwide recommendations for guidelines, regulation and policy.

There were three field tours for conference-goers: 1) the Hart-Miller Island dredge deposition site featuring both potential acid sulfate soils and active acid sulfate soils at the site near Baltimore harbor in Chesapeake Bay; 2) the UMD Research and Education facility in Upper Marlboro and the Smithsonian Environmental Research Center (SERC) in Edgewater, which featured potential acid sulfate soils in coastal marshes and subaqueous soils and sediments of Rhode River;
and 3) to Southern Maryland and the Richmond and Fredericksburg, VA areas, where participants viewed an acid sulfate exposure from the Nanjemoy formation along the Potomac River and then visited active acid sulfate soil exposures in mining operations and housing developments and at the Stafford Regional Airport, VA, and also visited dredge deposition areas on the historic Shirley Plantation.

Del Fanning Honored with Award

One of the highlights of the conference was the awarding of the first Pons Medal to University of Maryland Emeritus Prof. Delvin S. Fanning (ENST). The medal is named after the late Prof. Leen Pons, of Wageningen University in The Netherlands, who helped bring acid sulfate soils and related phenomena to the center stage of environmental science. This new medal was recently approved by the International Union of Soil Sciences to be awarded to a distinguished scientist recognized for contributions to the application of acid sulfate soil science through publication, innovative research, leadership, education and service. Professor Fanning spent the last 20 years of his career (as well as these 17 years following his “retirement” in 1999), in the study of acid sulfate soils and in advocacy for solutions to environmental problems associated with acid sulfate phenomena.

Previous Acid Sulfate Soils Conferences have been held in Dakar, Senegal (1986), Ho Chi Minh City, Vietnam (1992), Tweed Heads, Australia (2002), Guangzhou, China (2008), and Vaasa, Finland (2012). The next conference is tentatively scheduled to be held in Thailand in 2020.

8th IASSC Organizing Committee Members

Martin Rabenhorst, Univ. MD ENST, USA
Delvin Fanning, Univ. MD ENST, USA
Brian Needelman, Univ. MD ENST, USA
Rob Fitzpatrick, Australia
Maxine Levin, USDA-NRCS, USA
Thomas Reinsch, USDA-NRCS, USA
W. Lee Daniels, VA Tech Univ., USA
Chuxia Lin, UK
Chau Minh Khoi, Vietnam
Paul Shand, Australia
Robert Quirk, Australia
Leigh Sullivan, Australia
Anton Boman, Finland
Markku Yli-Halla, Finland

Conference participants examining a post-active Acid Sulfate Soil pit at the UMD Research and Education Center in Upper Marlboro during the July 20 field tour.
The international conference “Food Security, Dietary Practices and Non-Communicable Diseases (NCDs),” was held in Accra, Ghana, in August 2016, with the goal of raising awareness of the link between food security, malnutrition, and Non-Communicable Diseases (NCDs). NCDs include undernutrition, overweight/obesity, diabetes, and high maternal mortality.

**Dr. Margaret Udahogora**, Director of AGNR’s Dietetics Program, Department of Nutrition and Food Science, was the keynote speaker. She highlighted the modifiable risk factors for NCDs in both high and low income communities and the role of food security. She advocated for a multi-sectoral approach to NCD prevention.

Panelists were Dr. Ebenezer Appiah-Denkyira, Director General, Ministry of Health, Ghana; Dr. Francis Appiah, College of Agriculture and Natural Resources, Kwame Nkrumah University of Science & Technology, Ghana; Dr. Gladys Peprah Boateng, former Chief Dietitian, 37 Military Hospital, Ghana; and Dr. Iristide Ekow Essien, a UK Community Development, Policy Development, Social Enterprise Specialist. All called for a need to strengthen a multi-sectoral commitment for combating NCDs by scaling up action across the various government and private sectors.

The panelists highlighted the challenges of attaining food security for regular utilization of safe and nutritious foods and the health consequences. Issues relating to existing curative (rather than preventive) care were addressed and they called for a stronger public health institution, quality of health care and improved capacity in policy making and implementation, with responsive and equitable health systems.

This was the first conference of its kind being hosted under a public private partnership of Let’s Go Africa Foundation, School of Biomedical and Allied Health Sciences, Ghana Institute of Horticulturists and the Ghana Dietetic Association.

The conference was sponsored by AstraZeneca and Edusei Foundation, with the goal to raise awareness of the link between food security, insufficient diet quality and NCDs, and the serious impact on health and socio-economic development in Ghana.

The conference ended with the participants developing an action plan and endorsing strategies to address the challenges faced by the enormity of NCDs and their subsequent social and economic impact in Ghana. The plan included recommending food-based dietary guidelines, increased advocacy, high impact interventions, and collaboration to promote healthy nutrition and a healthy lifestyle.
Dr. Roselina Angel’s sabbatical in South America with world’s largest Poultry producers

Dr. Roselina Angel’s nearly year-long sabbatical, ending in May 2015, took her to three countries in South America to work with poultry feed producers on nutrition, poultry management, and quality control. The Department of Animal and Avian Sciences’ professor’s goal was “to sit in the place of the people I need to do my extension with. Also to more fully understand the challenges that industry nutritionists are facing today.”

When researchers at University do applied animal nutrition work, it is essential that they maintain a sense for what the day to day challenges are for commercial nutritionists. The best way to gain this experience is actually living it. Challenges may vary by country and thus gaining experience under different conditions is important. “For example in a country like Colombia, a ship with corn may arrive, and this is most of the corn that will be available for a time. If the corn arrives wet and moldy, there is no opportunity to “return” it or get another shipment quickly as there would be in producing countries like the U.S., Brazil and Argentina. For ingredient importing countries such as Colombia, industry nutritionists have to figure out how to use low quality ingredients with minimal negative productive impact until another ship arrives with a new shipment, which may be several weeks,” Dr. Angel said.

Prior to arriving at the University of Maryland AGNR, Dr. Angel had worked as an industry nutritionists and Research Manager in the Purina Mills Specialty Business Group. Dr. Angel is a world known expert in poultry nutrition and recently was named a Poultry Science Association Fellow because of her contributions to poultry science. Originally from Colombia, South America, Dr. Angel studied in the U.S. at Iowa State University, completing her B.S., M.S., and Ph.D. there.

Brazil is home to the two of the largest poultry producers in the world. Dr. Angel worked on experimental design, field problems related to leg issues as well as feed milling problems leading to productivity decreases in the field and processing. She worked with the largest broiler producer in Argentina reviewing formulation, quality control lab, ingredient quality control and procurement, feed mill quality control, formulation as well as farm management. While the largest poultry producer is found in Brazil, Argentina is quickly gaining importance as poultry producer.

By “best” application to local conditions and the cost benefit analysis of different products under local conditions is essential. Appropriately conducted research that allows a company to make the best decisions on what feed ingredients and feed additives to buy.

Her sabbatical work in South America has provided Dr. Angel with a fuller understanding of current poultry industry constraints, while trying to meet the world’s growing demand for poultry products.
Eight youth from Japan spent a month in Maryland, living with 4-H host families as part of the States’ 4-H International Exchange program. Dr. John Wells and Brenda Mason coordinated the Maryland program, held July 22-Aug. 20. The kids, called delegates, ages 12-14, are part of 4-H in Japan.

The Japanese 4-H’ers learned about U.S. culture by living with host families, joining in family routines, eating American food, spending time with their host “sibling.” Maryland host families also benefitted from the exchange — they learn about Japan, its customs and communication. In order for a family to host a delegate, they must have a child that is around the same age as the delegate. The “host sibling” is given the responsibility of really connecting the delegate with the family and making sure that both he/she and the family are as comfortable as possible.

The delegates came from cities across Japan, including Tokyo, Kobe, and Nagano. Their English language capability was limited, which could sometimes challenge communication with host families. Some delegates admitted that they were nervous about their inability to speak English perfectly, which caused them to be quiet at times. Their chaperone, Junko encouraged them to speak English even if they are nervous, and their language would improve.

One of the major ways that they connected and improved their English was through songs that they performed for their host families with the aid of their chaperone.

Some had new experiences such as eating blue crabs and drinking lemonade (they loved it!) going to a Washington National’s game, Hershey Park and the National Zoo. Maryland 4-H also coordinated a midpoint picnic/potluck on August 7 at Mullinex Park in Frederick Co. Families were asked to come, eat, swim, play games and connect on how things were going. During this event, the Jap-

Japan 4-H exchange, continued on page 13

The Japanese delegation who visited Maryland Photo courtesy of Brenda Mason
Japanese delegates surprised the families by performing a song for them in both Japanese and English.

Brenda Mason, who is an assistant in the College Park, MD 4-H headquarters, had her own cultural education during the group’s orientation meeting. Dr. Wells explained the different beverages that we have in the U.S. When he got to lemonade, the kids were a bit confused and said they had never had it, and did not know what it was. Brenda had just bought a gallon of lemonade. “Needless to say, I was horrified. I didn’t think about the possibility that they would not know about lemonade. Luckily, I purchased other beverages, and although slightly confused about the beverage at first, they quickly declared it delicious, and proceeded to drink the entire gallon! Even though it was something so small, I really thought it was amazing that they were so open to trying new things. “

This is not the first time Maryland 4-H has participated in exchange with Japan. Maryland 4-H participates in inbound and outbound programs depending on scheduling and funding. The number of delegates accepted inbound and sent outbound also varies. Other exchange countries are Costa Rica, Tanzania, and Finland to name a few.

This year, three MD 4-H’ers went on exchanges to Tanzania, Japan, and Finland. Vera, a Maryland 4-H’er, pictured below right, with her host sibling, spent a month in Izumi, Japan.

January 2017 issue of International Programs in Agriculture and Natural Resources will include:

- AGNR needs assessment team in Rwanda
- Farmer to Farmer assignment in Kenya—Dr. Nadine Sahyoun
- Dr. Jiuzhou Song’s systems genomics project in Australia

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