

The Center for International Programs Congratulates...

June Henton and Govind Kannan for being named Food Security Champions of Change by the White House as part of the President's 10-year food security initiative for the African continent. Henton and Kannan were 2 of 11 activists from around the country who were invited to the White House to receive their awards. Henton, from Auburn University, is a professor and dean of the College of Human Sciences, where she has provided leadership for outreach programming on a variety of food security-related topics. She founded Auburn University's Universities Fighting World Hunger (UFWH) campaign and the Hunger Solutions Institute, and is involved with the UN World Food Programme's Student War on Hunger Campaign. NIFA has proudly provided modest support over recent years to the UFWH. Kannan, dean of the College of Agriculture, Family Sciences and Technology at Fort Valley State University, focuses on applied research and outreach to empower small farmers. He has played a lead role in establishing a research consortium of 1890 land-grant institutions focused on integrated plant-animal farming systems to promote economic stability and environmental stewardship. The program has grown under leadership to promote international information exchanges across Africa, South America, Asia, and Europe.

Cornell University, for receiving the first NIFA Global Engagement Partnership Award on October 11, 2012. The International Programs team in the College of Agriculture and Life Sciences at Cornell University was recognized for its exceptional efforts to strengthen U.S. and global agriculture. The award also recognizes Cornell's commitment to global engagement with students, farmers, professionals, and governments, for the benefit of agriculture in the U.S. and abroad. Sonny Ramaswamy, NIFA Director, said Cornell's application clearly demonstrated outcomes, critical and unique impacts, and programs that have long-term sustained benefits.

U.S., India, Africa Trilateral University Partnership Program

The U.S. government and the government of India launched a new partnership that brings together the capabilities of the two nations to address poverty and hunger in Africa. Under the auspices of the U.S.-India Strategic Dialogue, the United States Agency for International Development (USAID), USDA's Foreign Agricultural Service (FAS) and NIFA are partnering to facilitate relationships between US, Indian and African colleges of agriculture in Malawi and Kenya.

The US/India/Africa Tri-Lateral University Partnership program builds upon strong, pre-existing relationships between U.S. colleges of agriculture and equivalent African and Indian institutions to promote food security in Africa. USDA and USAID envision innovative, three-way partnerships that reach out to the private sector and other stakeholders to address the needs of African agricultural universities so that they are able to effectively support national development objectives.

The partnership in Kenya is composed of Egerton University, The Ohio State University (OSU), and Punjab Agricultural University (PAU) in India. The partners will jointly develop

and implement capacity building programs designed to improve Egerton's ability to support Kenyan national agricultural development objectives. These institutional capacity building efforts will focus on transferring appropriate technology from PAU that supports Egerton capacity to effectively engage with agri-businesses and support economic development.

The Malawi partnership includes the Lilongwe University of Agriculture and Natural Resources (LUANAR), Michigan State University (MSU), and Tamil Nadu Veterinary and Animal Sciences University (TANUVAS) in India. This program will better align the role of higher education with the critical needs of farmers and others (especially women) throughout the dairy value chain. Drawing on the combined experiences of LUANAR, MSU, and TANUVAS (including Tamil Nadu Cooperative Milk Producers Federation), the program will enhance agricultural community development through applied technology- and curriculum development at LUANAR. The program will ultimately lead to improved efficiency and educational capacity at LUANAR and improved economic development for Malawi.

Rutgers University: IR-4's International Submissions Help US Food Crop Growers in a Global Market

The NIFA-funded IR-4 Project has been helping US growers of specialty crops obtain control solutions to their agricultural pest problems since 1963. Prior to passage of the Food Quality Protection Act in 1996, IR-4 research focused on newer, reduced risk chemistries to meet the needs of US farmers. Although the IR-4 Project has been very successful in obtaining registrations for many "reduced risk" products and safer chemistries for specialty crop growers, the use of these products has sometimes limited US growers abilities to export their commodities treated with these the newer products because of a lack of Maximum Residue Limits (tolerances, MRLs) abroad. In order to assist US growers competing in a global agricultural market, IR-4 has been working on several fronts to establish global MRLs to support our exports. In recent years, USDA's Foreign Agricultural Service (FAS) has provided Technical Assistance for Specialty Crops (TASC) grants to IR-4 for global projects.

IR-4 has for several years submitted a magnitude of residue (MOR) data to the Joint Food and Agriculture Organization/World Health Organization (FAO/WHO), meeting on Pesticide Residues (JMPR), under the auspices of the WHO and FAO, for several years. The JMPR provides independent scientific expert advice to the Codex Committee on Pesticide Residues (CCPR) by recommending the establishment of Codex MRLs (that would be used by many countries around the world). Since 2006, IR-4 data and submissions to JMPR have resulted in the establishment of more than 50 MRLs on several crop (or crop groups)/pesticide combinations. In 2011 IR-4 submitted approximately 24 MOR studies to the 2012 JMPR with the intention of establishing 30 or more Codex MRLs. In 2012, IR-4 plans to submit more than 50 MOR studies on 7 separate chemicals requesting the establishment of Codex MRLs. Furthermore, the greater acceptance of crop groups and sub-groups, an process co-chaired by IR-4 and the U.S. Environmental Protection Agency (EPA), by regulatory authorities globally allows MRLs to be extended to more minor crops through extrapolation thereby allowing a more rapid adoption of the safer products and permitting U.S. growers to use these products and to export their produce globally (lowering trade barriers to U.S. minor crop producers).

In addition, since 2010, at the direction of a number of domestic growers, IR-4 has conducted a number of MOR studies on crops solely for the purposes of establishing MRLs in other countries. This enables US growers to export crops legally treated with newer/ safer pesticides to these countries/blocks. Crops for which IR-4 submissions have been made to JMPR, Europe, Japan, etc. include: hops, cranberries, blueberries, beans, peas, lentils, pome fruit, stone fruit, citrus fruit, tropical fruits, avocado, pomegranate, fruiting vegetables, cucurbit vegetables, and ginseng.

These submissions have enabled U.S. growers to export their crops treated with these newer / safer chemistries to markets around the world.

Article courtesy of Johannes Corley, IR-4 Coordinator, Rutgers University.

In case you didn't see this important USDA News Release... USDA Scientists Collaborate with Global Researchers to Advance the Mapping of the Barley Genome

WASHINGTON, Oct. 17, 2012—In a major advance that will unlock the benefits of the mapping of the barley genome—one of the world's most important cereal crops—work conducted and supported by the U.S. Department of Agriculture (USDA) in collaboration with researchers around the world has resulted in the most advanced sequencing of the barley genome to date, as reported today in the journal *Nature*. The advance will give researchers the tools to produce higher yields, improve pest and disease resistance, and enhance nutritional value of barley. Past genomic research supported by USDA has provided similar benefits to crops such as tomato and corn, and helped improve cattle breeding and enhance the productivity of dairy cows.

"USDA supports innovative genomics research that is really moving us forward to meeting the many challenges we face in food, fuel and agriculture production," said Catherine Woteki, USDA's Chief Scientist and Under Secretary for Research, Education, and Economics. "This important step toward full barley genome sequencing offers enormous potential for global food security. Using the tools of genetics and genomics, we are keeping farmers profitable and our food supply safe and abundant."

Along with project investigators Timothy Close and Stefano Lonardi at the University of California, Riverside (UCR) and Gary Muehlbauer at the University of Minnesota, supported by grants from USDA's National Institute of Food and Agriculture (NIFA), USDA's Agricultural Research Service (ARS) scientists Roger Wise and Jesse Poland, together with scientists from 19 other organizations around the world, make up the International Barley Sequencing Consortium (IBSC).

Nearly twice as large as the human or maize genomes, the barley genome was a challenge to sequence, due to its complexity and its large proportion of repetitive regions, which are difficult to piece together into a true linear order. By developing and applying a series of innovative strategies that allowed them to circumvent these difficulties, the IBSC created a high-resolution assembly that places the majority of barley genes in order. This new resource provides the sequences of nearly all genes and associated regulatory regions, which will offer new direction to researchers seeking to improve barley yield and quality through functional genomics (determining the functions of important barley genes) and genomics-assisted breeding.

The work of IBSC highlighted in Nature provides a detailed overview of the functional portions of the barley genome, revealing the order and structure of most of its 32,000 genes and a detailed analysis of where and when genes are switched on in different tissues and at different stages of development. They describe the location of dynamic regions of the genome that carry genes conferring resistance to devastating diseases, such as powdery mildew, Fusarium head blight and rusts. This will provide a far better understanding of the crop's immune system. The achievement will also highlight with unprecedented detail the genetic differences among barley cultivars.

The success of the barley genome sequencing, and other grass family crops including wheat and rye, will allow breeders and scientists to effectively address the challenge of feeding the world's growing population living in an environment that increasingly challenges farmers and ranchers with extreme weather events.

The Nature paper can be found at <http://www.nature.com/nature/journal/vaop/ncurrent/full/nature11543.html>. For more information on the IBSC, please visit www.barleygenome.org.

Recent Travels

Hiram Larew, Director of NIFA's Center for International Programs, recently accompanied USDA Under Secretary and Chief Scientist Dr. Catherine Woteki to the G-20's Meeting of Agricultural Chief Scientists in Guadalajara, Mexico. This was the first-ever meeting of G-20 chief scientists, and much of the discussion focused on shared interests, lessons learned, and national and global challenges.

Shortly after the G-20 meeting, Larew participated in a panel at the eXtension national conference in Oklahoma City, OK. The discussion highlighted the growing stake that the Cooperative Extension System has in global economic, cultural and scientific trends.

He then visited Langston University (LU) and Oklahoma State University to learn more about their programs in international agriculture. Dr. Marvin Burns, dean of the School of Agriculture and Applied Sciences, and several of his colleagues with Langston's American Institute for Goat Research provided helpful background on LU's many ongoing domestic and international research and Extension programs. At Oklahoma State, Drs. David Henneberry, Mike Woods, Ed Miller, David Porter and several others described the academic, research and Extension activities that strengthen the international competencies of students, faculty and staff, and that provide technical assistance overseas.

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