

ARS and You



Research for the Growing World

April 2010

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Greetings to all of you! After a blustery start, spring is finally here and the year is well under way. By now, you have received several issues of *ARS & You*, our monthly employee newsletter. *ARS & You* is for you and about you. It is also designed to convey the vast diversity of ongoing and progressive activities in ARS. It's a tool to keep each of us in touch with one another.

I have enjoyed reading about your participation in various workshops, leadership and stakeholder meetings, and other activities—and I am sure your colleagues have as well. This year ARS has already hosted numerous national program workshops, topical meetings, dedication ceremonies, and other special events that have allowed us to connect with our many stakeholders who serve as our customers, partners, cooperators and supporters of our research. By seeking customer and stakeholder input, we are able to customize our research programs and priorities and transfer technology to fit the needs of those who want and need our information to solve agricultural problems and achieve beneficial public outcomes.

Examples of our problem-solving skills can be found in the “Did You Know” column, which is designed to inform you about unique and interesting ARS success stories and research outcomes. I look forward to future articles in this section showcasing our many scientific achievements—emphasizing research solutions that have moved from the laboratory to the outside world.

And of course, we couldn't be the “problem-solving agency” without you. That is why I'm always happy to read about the many notable and prestigious awards and acknowledgements garnered by ARS scientists and staff. An organization is only as good as its people, and you make ARS great. I couldn't be more proud of the people that make up this wonderful organization.

Keep those submissions coming, and I look forward to reading about you in the future!

Handwritten signature of Edward B. Knipling.

Edward B. Knipling, ARS Administrator

Around ARS



USDA Secretary Tom Vilsack's People's Garden Initiative asks all USDA employees to consider establishing or supporting a garden at their USDA location worldwide,

or in their community nearby. The goals of this effort are community involvement, collaboration, and sustainability. Potential types of involvement are as varied as one's imagination, from a vegetable garden with produce contributed to charities in need, a rain garden to mitigate runoff, or a native plants pollinator garden to show how biodiversity can benefit our environment. Remember to get involved. Consider participating in a People's Garden effort. Already there are over 100 sites across the country and even some at our overseas embassies. ARS locations in Texas, North Dakota, Illinois and Maryland have established very different gardens appropriate to their sites. For more details, see www.usda.gov/peoplesgarden. To see a listing of current projects, or to enter a new garden, go to the USDA eAuthentication system at: www.longport.usda.gov.



Research Nutritionist **Lisa Jahns**, ARS Grand Forks Human Nutrition Research Center, Grand Forks, ND, is coordinating the upcoming 34th National Nutrient Databank Conference, July 12–14,

2010, in Grand Forks, ND. This year's theme is "Prairie to Plate: Exploring Food and Nutrient Database Frontiers." This conference provides ARS human nutrition experts the opportunity to showcase their work, and to interact with data users to guide and improve future research to more closely align with stakeholder needs. Abstracts for poster submissions are being accepted until May 31. Conference information can be found at: <http://www.nutrientdataconf.org>.

Joseph Kozlovac, ARS Agency Biosafety Officer, served as an instructor for the 3rd Annual 2010 Leadership Institute for Biosafety Professionals, April 13–15, 2010, at Emory University, Atlanta, GA. The event was sponsored by the American Biological Safety Association (ABSA), the Elizabeth R. Griffin Research Foundation, and the Emory University Leadership Institute for Biosafety Professionals. The Leadership Institute was developed based on an increased need for leadership training among biosafety professionals and the recognition that biosafety professionals need to be leaders to be successful in integrating safety with science.

Research Food Technologist **Jose De J. Berrios**, ARS Western Regional Research Center, Processed Foods Research Unit in Albany, CA, facilitated a Strategic Planning Workshop to discuss the role that pulse legume crops will play in finding solutions, through research, to the critical health and sustainability challenges facing the world. The workshop focused on developing a strategic plan for the U.S. Pulse Industry to answer short- and long-term research needs in the areas of nutrition and health, functionality/end use, and sustainability. To fulfill the goals of the Pulse Health Initiative, the USA Dry Pea and Lentil Council and the U.S. Dry Bean Council have joined efforts to form the American Pulse Association. The workshop was held on March 30–31, 2010, in Beltsville, MD.

On March 25, 2010, ARS Office of International Research Programs staff hosted a high-level delegation from Pakistan, following a Strategic Dialogue between **USDA Secretary Tom Vilsack** and Pakistan's Secretary of Agriculture Muhammad Zia-ur-Rehman, which focused on U.S.-Pakistan cooperation in agriculture. The group met with ARS national program leaders and researchers to discuss areas of mutual interest for future research in wheat production, livestock health and production, and irrigation and water management.



ARS and National Institute of Food and Agriculture (NIFA) staff co-sponsored an Animal Health Research Planning Workshop on March 23–24, 2010. The workshop was attended by 149 stakeholders—including representatives from government agencies,

universities, industry, commodity groups and veterinarian groups. **Dr. Molly Jahn**, Deputy Under Secretary for Research, Education and Economics (REE) and **Dr. Roger Beachy**, NIFA Director and USDA Chief Scientist, gave introductory remarks. Plenary session talks on the importance of animal agriculture were presented by Dr. Mike Apley, Professor, Production Medicine/Clinical Pharmacology, Kansas State University and Dr. Jim McKean, Iowa State University Extension Veterinarian. Industry leaders gave presentations on research priorities of 10 different animal species—beef cattle, dairy cattle, sheep, goats, swine, horses, and special species that included farmed exotic ruminants, turkeys, broiler chickens and layer chickens. Breakout sessions were held to discuss potential research priorities by animal species, and also to discuss alignment with REE priorities and funding sources (private and public). The results of this workshop will assist ARS and NIFA in developing their research programs for the next 3–5 years.

On March 24–25, 2010, staff from the ARS National Agricultural Library, Alternative Farming Systems (AFSIC) and Rural Information Centers attended the Women In Agriculture Meeting in Baltimore, MD, and the Post-Conference, “Women and Working Lands,” held at USDA in Washington, DC. The Post-Conference was hosted by **USDA Deputy Secretary Kathleen Merrigan** and featured keynote speaker, **First Lady of Agriculture Christie Vilsack**. Mrs. Vilsack provided information on her personal commitment to rural libraries and the role USDA has in developing avenues for women in agriculture. **Stephanie Ritchie** of AFSIC was recognized in the printed program as a key resource for recognizing

historic women who work the lands. Ritchie was also verbally acknowledged at the reception by feature artist and scholar Cynthia Vagnetti for her work in identifying historical women and photos.

On March 18, 2010, Research Scientist **Michael Haas**, ARS Eastern Regional Research Center, Fats, Oils and Animal Coproducts Research Unit, Wyndmoor, PA, and **Robert Fireovid**, ARS National Program Leader for Bioenergy, Beltsville, MD, participated in the Second National Oil Heat Industry Conference and Policy Summit, held in Washington, DC. The purpose of the meeting was to increase awareness within the oil heating industry of the advantages and the technical issues related to incorporating biobased fuels, especially biodiesel, into home heating fuels. This is an especially relevant topic in the northeastern part of the country where home heating systems using petroleum fuels are common.



Large white turkey.

Research Physiologists **Murray R. Bakst** and **Julie Long** with the Beltsville Agricultural Research Center, Animal Biosciences and Biotechnology Laboratory in Beltsville, MD, conducted a workshop titled, “Methods of Artificial Insemination Technology and Fertility Evaluation in Poultry.”

The workshop was held on March 16–17, 2010, at the Midwest Poultry Federation in St. Paul, MN.

In an effort to combat citrus greening—one of the most devastating citrus diseases—national leaders met at the ARS Office of National Programs in Beltsville, MD, for the Citrus Strategic Research Planning Meeting held on March 16–17, 2010. Participants included ARS national program leaders and researchers, California, Texas, and Florida university researchers, USDA National Institute of Food and Agriculture (NIFA) National Program Leaders, USDA Animal Plant and Health Inspection Service Administrators, California and Florida State Department of Agriculture agricultural leaders and

scientists, private industry members and U.S. Citrus Mutual representatives. The program focused on developing a coordinated, national research plan leading to solutions for citrus greening.

The U.S. Global Climate Research Program is embarking on a new effort to look at human health impacts of climate change as a pilot effort focusing on relevant issues from a societal perspective. A new cross-cutting interagency Climate Change and Human Health Group (CCHHG) was formed to accomplish this effort, with members from



Andrew French uses aerial remote sensing data to estimate crop water use.

the National Institute of Environmental Health Science, the National Oceanic and Atmospheric Agency, the Smithsonian Institution, the Department of Homeland Security, the Department of Defense, the Office of Technology and Science Policy and the Department of Agriculture. The group's first meeting was held on March 10, 2010, with representation on behalf of ARS by the

Office of National Programs, Animal Production and Protection National Program Leaders. These efforts relate to agricultural research due to the connection between agricultural processes and health, such as pesticide and fertilizer use, livestock effects on plant distribution, and control of invasive species. Agricultural workers are more susceptible to some of the effects of climate change, such as increases in heat stress and exposure to pathogen-transmitting insects.

Physical Scientist **Andrew French**, ARS U.S. Arid Land Agricultural Research Center (ALARC) in Maricopa, AZ, visited Australia from February 1, 2010 to March 5, 2010, where he participated in the Australian Airborne Calibration/Validation Experiment (AACES)—a project in the Murrumbidgee Catchment, New South Wales, to validate remote sensing of soil moisture. The Tewkesbury Bequest, Department of Civil

and Environmental Engineering, University of Melbourne, sponsored French. There, he presented a seminar on remote sensing techniques to estimate crop water use. French was also sponsored by the International Centre of Water for Food Security (IC Water), Charles Sturt University at Wagga Wagga, to develop collaborative links with ALARC for research on remote sensing over irrigated agriculture.

ARS National Agricultural Library (NAL), Animal Welfare Information Center (AWIC) staff conducted a 1-½ day workshop held on March 17–18, 2010, in Beltsville, MD, titled, “Meeting the Information Requirements of the Animal Welfare Act.” The workshop targeted individuals responsible for making sure that biomedical research using animals regulated by USDA comply with information requirements of the Animal Welfare Act. The focus of the workshop was on the “alternatives concept,” which requires investigators to document consideration of alternative procedures that reduce pain or distress to animals, and to avoid unnecessary duplication of previous animal experiments. The workshop will be conducted again on May 5–6, 2010, in Beltsville, MD, and is open for registration.

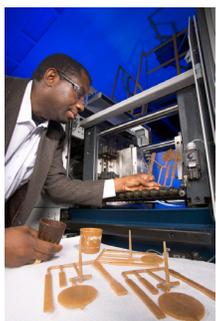
ARS Research Chemist **George Piazza** and Chemical Engineer **Rafael Garcia** with the ARS Eastern Regional Research Center's Fats, Oils and Animal and Coproducts Research Unit in Wyndmoor, PA, were cited in a recent issue of *Industrial Bioprocessing Alert* for their innovative work on renewable flocculants, a substitute for the synthetic polymer polyacrylamide (PAM)—used in wastewater treatment, and as an erosion control agent on irrigated farms and (earthen) canals. The two scientists are seeking to find new uses for byproducts generated during meat processing, including using gelatin and meat and bone meal (MBM) as an alternative to PAM.

In celebration of the Virginia Department of Forestry's 100th anniversary, NAL is providing them with a variety of Smokey Bear materials that will be exhibited at various libraries across the state of Virginia. They include posters, original drawings,

photographs, films, memorabilia, audio recordings, and unique artist proofs such as "... Only You Can Prevent Forest Fires." Some of NAL's 19 original paintings created by Smokey Bear artist Rudolph Wendelin may be displayed at the Virginia Fine Arts Museum. NAL houses one of the largest collections of the U.S. Forest Service Smokey Bear Collection, which documents the history of Smokey Bear, one of the most successful ad campaigns in history.

Notable Awards

Daniel Strickman, National Program Leader for Veterinary and Medical Entomology, ARS Office of National Programs, Beltsville, MD, received the John N. Belkin Award at the American Mosquito Control Association meeting on March 29, 2010, in Lexington, KY. This award is given for meritorious achievement in the field of mosquito systematics and biology. Strickman has 34 years of experience working with mosquitoes, having performed research on taxonomy, integrated pest management, dengue and malaria.



Charles Onwulata

Food Technologist **Charles Onwulata**, with the ARS Eastern Regional Research Center, Dairy Processing and Products Research Unit in Wyndmoor, PA, will be named a Fellow by the Institute of Food Technologists (IFT), for his outstanding research in the areas of extrusion processing, microencapsulation and food structuring, which led to successful commercialized products. IFT will honor Onwulata at its Annual Meeting and Food Expo on July 19, 2010, in Chicago, IL.

Research Chemist **Jeanette (Jan) M. Cardamone**, with the ARS Eastern Regional Research Center's Fats, Oils and Animal Coproducts Research Unit in Wyndmoor, PA, was selected as the 2010 recipient of the American Chemical Society (ACS), Cellulose

and Renewable Materials (CELL) Division Fellow Award. This award is given to recognize CELL members whose dedication, leadership, and enthusiastic service has kept the organization moving forward. Cardamone's participation in ACS has led to over 10 ACS symposia, 8 ACS book chapters, and 1 ACS book edition.



D. Michael Glenn

D. Michael Glenn, Plant Physiologist and Laboratory Director of the ARS Appalachian Fruit Research Station in Kearneysville, WV, was awarded the American Society for Horticultural Science Outstanding Fruit Publication Award for 2009. The publication, "Particle Film Mechanisms of Action That Reduce the Effect of Environmental Stress in 'Empire' Apple," outlines how a reflective kaolin particle film on plant leaves and fruit reduces plant temperature and diffuses light into the canopy to increase photosynthesis and fruit quality. Glenn will be honored on August 2, 2010, at an award ceremony at the Annual Meeting of the American Society for Horticultural Science in Palm Desert, CA.

Research Geneticist **Chad Finn**, ARS Horticultural Crops Research Unit in Corvallis, OR, was elected a Fellow of the American Society of Horticultural Science. Finn is one of the world leaders in berry crop genetics, having participated in the release of at least 35 new cultivars—10 strawberry, 13 blackberry, 6 raspberry, and 6 blueberry. Total fruit sales from these cultivars in 2008 were \$18.4 million in the Pacific Northwest, with an additional \$1.2 million in plant sales at wholesale nurseries. He will be honored on August 2, 2010 at an award ceremony at the Annual Meeting of the American Society for Horticultural Science in Palm Desert, CA.

Soil Scientist **Richard Todd**, ARS Renewable Energy and Manure Management Research Unit, Bushland, TX, contributed to the project "Air Quality: Reducing Emissions from Cattle

Feedlots and Dairies,” which won the 2010 Texas Environmental Excellence Award from the Texas Commission on Environmental Quality.



Stephanie Rodrigues in the lab.

High school student intern **Stephanie Rodrigues**, with the ARS Food Composition and Methods Development Laboratory, Beltsville, MD, worked on a science project entitled “Curry Leaves: A Culinary Agent with Antioxidant Power.” Rodrigues worked under the direction of Research Chemist **Devanand (Dave) Luthria** of the same laboratory. She was

awarded first place in the “Chemistry Division” at Eleanor Roosevelt High School’s science fair, and received multiple prizes at the PG County Regional Science Fair—including first place in the chemistry category, best presentation for chemistry, the Sigma Xi Scientific Research Society Award, an invitation to the CIA for a tour and award assembly, and a \$5,000 annual scholarship to the University of Maryland (Baltimore County).



Kim Daigle and Fred Shih look at fried chicken coated with rice flour batter.

ARS industry partner, CrispTek, LLC, located in Columbia, MD, won the Greater Baltimore Committee’s 2010 Best New Product Award for its ChoiceBatter, a food coating made of rice-based flours, pre-gels, and modified rice starches invented by Research Chemist **Fred F. Shih** at the ARS Southern Regional Research Center, Food Processing and Sensory Quality Research Unit in New Orleans, LA. CrispTek licensed ARS’s patented formula,

which reduces the oil absorbed in frying batters by as much as 50 percent. The batter is gluten-free and is suitable for people with Celiac Disease—an autoimmune disorder triggered by gluten that affects 3 million people in the United States. The company has signed agreements with two major U.S. food

distributors. The product is in 235 stores across the United States, including Mid-Atlantic Giant Food stores and HEB grocery stores in Texas.



Joan Lunney in her laboratory.

Research Chemist **Joan Lunney**, ARS Animal Parasitic Diseases Laboratory, Beltsville, MD, was presented with the International Journal of Biological Sciences’ 2009 “Most Cited Paper Award” for her paper on “Advances in Swine Biomedical Model Genomics.”

Terry Howell, Acting Laboratory Director and Research Leader of the ARS Soil and Water Management Research Unit, Bushland, TX, and Soil Scientist **Karen Copeland**, in the same unit—along with co-authors Suat Irmak, Ayse Irmak and Derrel Martin (University of Nebraska), and Jose Payero (Department of Primary Industries and Fisheries, Irrigated Farming Systems in Australia)—will be presented the 2010 American Society of Civil Engineers (ASCE) Journal of Irrigation and Drainage Engineering Honorable Mention Paper Award for their paper, “Variability Analyses of Alfalfa-Reference to Grass-Reference Evapotranspiration Ratios in Growing and Dormant Seasons.” The award will be presented during the World Environmental and Water Resources Congress, May 16–20, 2010, in Providence, RI.



Martin analyzes plant virus results.

Robert (Bob) Martin, Research Leader and Research Plant Pathologist, with the ARS Horticultural Crops Research Unit in Corvallis, OR, has won the Lee M. Hutchins Award from the American

Phytopathological Society for his leadership in the characterization of more than 40 viruses of small fruit crops, development of strawberry and raspberry with engineered virus resistance, and his work in developing virus control measures that can be implemented by growers. The award will be

presented at the Annual Meeting of the American Phytopathological Society in Nashville, TN, in August of 2010.

Diego Quito, a Ph.D. candidate in the Department of Botany and Plant Pathology at Oregon State University and working in the USDA-ARS Small Fruit Virology Laboratory at the Horticultural Crops Research Unit in Corvallis, OR, has been awarded the Anita S. Summers Travel Award. He will present his work on the “Characterization of a New Reovirus from Raspberry” at the Annual Meeting of the American Phytopathological Society in Nashville, TN, in August of 2010.



Retired Supervisory Research Chemist **Harry M. Farrell**, formerly with the ARS Eastern Regional Research Center, Dairy Processing and Products Research Unit, is the 2010 recipient of the California Dairy Research Foundation’s William C. Haines

Dairy Science Award. Farrell was honored at the 12th Dairy Ingredients Symposium in San Francisco, CA, on March 2–3, 2010. This award recognizes the impact that Farrell’s work has had on the dairy industry and recognizes the impact that ARS research continues to have on its customers, stakeholders and the American consumer.

Ecologist **Tom Monaco**, ARS Forage and Range Research Laboratory, Logan, UT, and Rangeland Scientist **Kirk Davies**, Range and Meadow Forage Management Research, Burns, OR, both received a Society for Range Management 2010 Outstanding Young Range Professional Award.

Information Technology Specialists **Leigh Walton** and **Lillian Bacheller**, Animal Improvement Programs Laboratory, Beltsville, MD, received the National Dairy Herd Information Association’s 2010 Outstanding Service Award. For more than 30 years, Walton and Bacheller have provided computer expertise to support USDA’s research program on genetic evaluation of U.S. dairy animals, for which the primary data were records collected through dairy herd improvement affiliates.

Technical Information Specialist **Cal Thorson**, ARS Northern Great Plains Research Laboratory, Mandan, ND, received a Fellow Award from the Soil & Water Conservation Society for his leadership and impact in promoting natural resource conservation. He also received the U.S. No-Till Non-Farmer of the Year Award for 2010 from the Manitoba-North Dakota Zero Tillage Farmers Association for excellence in promoting soil conservation and no-till farming in his professional capacity.

Deceased Soil Scientist **Armand Bauer**, ARS Northern Great Plains Research Laboratory (NGPRL), Mandan, ND, received the 2010 North Dakota Agricultural Hall of Fame Inductee Award from the North Dakota Agricultural Hall of Fame for excellence in soil science research and education while on staff at North Dakota State University and the ARS NGPRL.

Research Geneticist **Larry Kuehn**, ARS Genetics and Breeding Research Unit, Clay Center, NE, received the Outstanding Recent Alumnus from the Department of Animal and Poultry Sciences Award for 2009–2010 from Virginia Tech College of Agriculture and Life Sciences. The award is a distinct honor of recognition of his achievements since graduating from the University.



Amber Whittaker

Office Automation Assistant **Amber Whittaker**, ARS Poisonous Plant Research Laboratory in Logan, UT, received the Honorable Order of Molly Pitcher Award on behalf of the 65th Fighter’s Brigade, the United States Army National Guard. This award recognizes women who have voluntarily

contributed in a significant way to the improvement of the Air Defense Artillery Community. Whittaker, a retired Air Force Staff Sergeant, was responsible for meeting the needs of 42 families of deployed soldiers, as well as 102 soldiers and their families while at her home station.

Did You Know?

Researchers at the **ARS Southern Regional Research Center** in New Orleans, LA, in collaboration with Red River Commodities, a major sunflower seed producer based in Fargo, ND, developed a process for making a **sunflower butter product** that resembles the flavor, texture and appearance of commercially available peanut butter. Red River Commodities came to ARS for their processing expertise. ARS scientific experts were able to solve a major obstacle in processing the product after discovering that improper roasting



results in poor texture, flavor and appearance. By modifying the roasting process, controlling moisture and ingredient effects, a significantly improved sunflower butter was produced. The beauty of this product is that it is an alternative to peanut butter for peanut allergy sufferers. According to the Asthma and Allergy Foundation of America, approximately 2 percent of the population suffers from peanut allergies, with symptoms ranging from a mild case of hives to severe anaphylactic shock. So, this alternative is welcome news.

Red River Commodities created SunGold Foods, Inc. a company dedicated to commercializing the sunflower product, **SunButter®**. No company has ever successfully marketed a spreadable sunflower seed butter. The product is now available in a variety

of flavors (creamy, organic unsweetened, natural, natural crunch and natural omega-3) and sizes, including new “go packs” designed for lunches and on-the-go snacking. The product is being sold to some of the largest U.S. food companies and retailers, such as Kroger, SuperValu, Walmart, Target, Trader Joe’s and Whole Foods, and recently through the QVC network. Sunflower seeds are a good source of protein, fiber, vitamin E, zinc and iron. SunButter® is currently being used in a variety of foods as an added ingredient, including in chocolate and SunButter® candy cups, energy bars and a no-peanut peanut sauce. SunButter® is an entitlement item and is thus part of the food commodities list for the USDA National School Lunch Program. This technology will increase the value of U.S. sunflower seeds, boosting profitability for U.S. sunflower farmers.

Written by Tara T. Weaver-Missick, ARS Information Staff.

Chicken Pasta with SunButter® Dressing

Ingredients

- 2 pkgs. Ramen noodles, any variety, do not use seasoning packet
- 4 boneless, skinless chicken breasts
- 1 cup Italian dressing
- 3/4 cup SunButter®

Directions

Make ramen noodles as directed on packet (without seasoning packet). Grill chicken breasts; cut into strips. Whisk Italian dressing into SunButter® gradually. Toss noodles and chicken with dressing before serving.

SunButter® information is available at:
www.sunbutter.com

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Please submit story ideas and national award items to: Tara T. Weaver-Missick, tara.weavermisick@ars.usda.gov or call 301-504-1663.