

July 2007



BARC is part of the USDA's Agricultural Research Service and encompasses programs at the Beltsville Agricultural Research Center; the U.S. National Arboretum in Washington, D.C.; and worksites in Chatsworth, New Jersey; Presque Isle, Maine; and McMinnville, Tennessee. BARC is the largest and most diversified agricultural research complex in the world. BARC's record of accomplishments and its ongoing programs have made it a world leader in agricultural research.

Blowing Our Own Horn!

BARC SCIENTISTS WIN FEDERAL LABORATORY CONSORTIUM AWARD FOR TECHNOLOGY TRANSFER

Four BARC scientists and a scientist from the FDA were selected as winners of the 2007 Award for Excellence in Technology Transfer by the Federal Laboratory Consortium for Technology Transfer (FLC). The award recognizes laboratory employees who have accomplished outstanding work in the process of transferring a technology developed by a federal laboratory to the commercial marketplace. **Drs. Mark Feldlaufer, Jan Kochansky, Jeff Pettis, Matt Kramer and Margaret Oeller** were recognized at an award ceremony at the FLC National Meeting in Arlington, Texas for their effort to develop a "New Antibiotic to Control American Foulbrood Disease of Honey Bees".

BARC'S RESEARCH SCIENTIST AND EARLY CAREER SCIENTIST OF THE YEAR WINNERS

Dr. Yakov Pachepsky, a Soil Scientist in our Environmental Microbial Safety Laboratory has been selected as the Research Scientist of the year for "Research and international leadership in development and application of models in agricultural hydrology." He currently leads the unique research program on fate and transport of



manure-borne pathogenic microorganisms that has led to the breakthrough in understanding of the effect of manure particles on pathogenic bacteria transport.

Dr. Wade Crow, Research Physical Scientist in the Hydrology and Remote Sensing Laboratory, has been selected as the Early Career Scientist of the year for "Enhancing



Community Interest...

AGRICULTURAL SCIENCE EDUCATION AT BELTSVILLE ELEMENTARY SCHOOL

For the fourth straight year, the **Friends of Agricultural Research-Beltsville (FAR-B)** cooperating with BARC, the National Agricultural Library, and the ARS Information Staff demonstrated the returns from world-class agricultural science research to grades 1-6 at the Beltsville Elementary School. Described as in-school, science enrichment field trips, these events have proved big hits with school administrators, teachers, and especially enthusiastic youngsters who are just awakening to the meaning of science in their lives. This year, scientists presented their version of plant science enrichment adapted to the elementary school level. Every student took an hour in the school gymnasium rotating on signal at fifteen minutes intervals among four plant science stations (plant basics, uses of plants, plants as food, and plants and the environment). In recognition of the hours spent on this project, FAR-B received the **President's Gold Medal Volunteer Service Award for 2007 presented by the President's Council on Service and Civic Participation**. This is third year in a row that FAR-B has been recognized. For more information about FAR-B visit: <http://www.ars.usda.gov/Aboutus/docs.htm?docid=9914>

the value of remote sensing observations for agricultural applications through the development of data assimilation and land surface modeling techniques." One of his many contributions was the first demonstration that surface soil moisture observations from passive microwave sensors in space can improve the accuracy of streamflow predictions made by a hydrologic model.

FAST-FOOD EATING HABITS OF CHILDREN



The article entitled "Effect of Fast-Food Consumption on Energy Intake and Diet Quality among Children in a National Household Survey" published in the January 2004 issue of *Pediatrics* was the most accessed article in April 2007. The study, based on ARS' What We Eat in America 1994-96 and 1998 surveys, found that fast

food items replaced foods such as milk, fruits, and non-starchy vegetables in 4 to 19 year old children's diets. A comparison of 2-day dietary data showed that children, on the day they ate fast food items, had higher intakes of energy, saturated fat, and added sugars but had substantially lower intakes of more nutrient dense foods than on the day they did not eat any fast food items. **Dr. Shanthy Bowman** from the Beltsville Human Nutrition Research Center, **Dr. Steven Gortmaker**, Harvard School of Public Health, and **Dr. David Ludwig** and colleagues, Harvard School of Medicine, coauthored this study. This article, and others based on data gathered in the What We Eat in America survey, is helping state legislatures decide whether to require the display of nutrient content of menu items in fast food and other restaurants and eating facilities. (For more information contact: shanthy.bowman@ars.usda.gov)

Year Long Strawberry Production System with Bioenergy



Three USDA-ARS labs are collaborating to develop year round strawberry production. **Dr. Fumi Takeda**, of the USDA-ARS Appalachian Fruit Research Station near Kearneysville, West Virginia, has developed a production system that begins with optimal timing of propagation of planting stock from runners and leads to fruit production in fall and again in spring. Several cultivars were tested in the system, and a few were found to be acceptable. **Dr. Kim Lewers** of the USDA-ARS Genetic Improvement of Fruits and Vegetables Laboratory at BARC, has partnered with Dr. Takeda to develop even better cultivars for this production system. The first seedlings from the breeding portion of the project will be evaluated jointly by Drs. Takeda and Lewers in spring of 2008 in Beltsville and again that fall at both Beltsville and the University of Maryland Wye Research and Education Center near Queenstown, Maryland, where Dr. Takeda has been fine-tuning the production system. In addition, **Dr. Patricia Millner** of BARC's Food Safety Laboratory, is partnering with Drs. Lewers and Takeda to develop an enclosed container composting system for generating heat. This innovative system should result in a reduction in heating costs during production. This research is now at a stage appropriate for commercial evaluation and/or partnering. Interested parties should contact the Office of Technology Transfer, 10300 Baltimore Avenue, USDA-ARS, BARC-W., BLDG-003, RM-208, Beltsville, MD 20705-2350, Tel: 301-504-6421, FAX: 301-504-6001, sandra.matteson@ars.usda.gov.

On the Research Side...

LIGHT BROWN APPLE MOTH FOUND IN CALIFORNIA

Invasive insects represent significant potential losses to U.S. agriculture in terms of the damage they inflict to commodities, the cost of their control, and the disruption they cause to international trade agreements. **Dr. John W. Brown** of the Systematic Entomology Laboratory, working with colleagues in California and Australia, has confirmed the presence in the U.S. of the light brown apple moth, *Epiphyas postvittana*, a native of Australia and an important pest of apple and citrus in many parts of the world. Its discovery in the San Francisco Bay area represents the first records of the species in North America. Because larvae of this moth feed on the leaves, flowers, and fruit of nearly 250 different species of herbaceous plants, including apple, citrus, litchi, rose, grapes, and many other agricultural and ornamental plants, the potential economic impacts of this invasive are staggering. The accurate and timely identification of pests, invasive species, and potential biological control agents is typical of the service the Systematic Entomology Laboratory provides to action agencies such as APHIS and the world agricultural community in general on a daily basis. Contact: John.Brown@ars.usda.gov.

UMCP-TAIWAN-BARC FOOD SAFETY RESEARCH INTERACTION

Dr. Stephen Delwiche, Agricultural Engineer in our Instrumentation and Sensing Laboratory, in cooperation with **Professor Y. Martin Lo**, Department of Nutrition and Food Science, University of Maryland College Park, will be hosting a Ph.D. student from National Taiwan University, starting in late August. In fulfillment of the requirements for a doctorate in Bio-Industrial Mechatronics Engineering and funded by a highly competitive scholarship by the National Science Council of Taiwan, candidate I-Chang Yang will divide his time between Dr. Lo's and Dr. Delwiche's laboratories during a one-year period of practical training. Possessing a strong background in non-destructive inspection of biomaterials through Near Infrared spectroscopy, multi- and hyper-spectral imaging, Mr. Yang will assist Dr. Delwiche in studies involving the assessment of safety-related damage in cereal grains and oilseeds. Contact: Stephen.Delwiche@ars.usda.gov.

Mark Your Calendar!

A PEPPER FOR EVERY POT!

The U.S. Botanic Garden and the Information Service of the Agricultural Research Service, U.S. Department of Agriculture will co-sponsor an exhibit entitled "A Pepper for Every Pot" (<http://www.usbg.gov/whats-happening/exhibits.cfm>). This exhibit will be held in the Plant Exploration wing of the U.S. Botanic Garden Conservatory in Washington, D.C., from **June 16 to November 11, 2007**. Peppers have long been an important agricultural crop in subtropical regions, and many different varieties can be found in cuisines around the world. This exhibit explores the diversity of peppers, including many recently introduced varieties, and celebrates peppers' beauty, flavors, and nutritional benefits. A poster and plant display within the exhibit will highlight the new culinary / ornamental pepper releases of **Drs. John Stommel** and **Rob Griesbach** of BARC who have been studying the genetics of peppers for over 15 years leading to the development of unique pepper germplasm with novel fruit and foliage pigmentation.

MID-ATLANTIC PLANT MOLECULAR BIOLOGY MEETING

August 16-17. The Mid-Atlantic Plant Molecular Biology meeting (MAPMBS 2007) will be held on August 16-17 at the Patuxent Wildlife Visitors Center, Laurel, MD. For more information contact Co-Chairs Dr. Ben Matthews (301-504-5730, matthewb@ba.ars.usda.gov) or Dr. Leslie Wanner (301-504-5953, wannerl@ba.ars.usda.gov).

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