

# BARC e-Update



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**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 RECOGNIZED BY BUSINESSES FOR THE BAY



In recognition of its leadership in nutrient management, BARC has been recognized by Businesses for the Bay for Outstanding Achievement for Nutrient Reduction, Federal Government in 2006. Businesses for the

Bay, a voluntary pollution prevention program of the EPA's Chesapeake Bay Program, has approximately 728 members and partners—businesses, industries, government facilities, and other organizations in the Chesapeake Bay watershed. Its mission is to build support for pollution prevention among all organizations in the watershed. BARC has been a member since 2001, represented by **Mr. Dave Prevar**, Area Safety and Health Manager, and **Mr. Tom Franklin**, Environmental Protection Specialist. Each year, Businesses for the Bay recognizes outstanding participants in a number of categories with Environmental Excellence Awards. BARC's nomination reflects the successful collective efforts of Research Support Services (**Mr. Keith Hummel**, **Mr. Dan Shirley**, and staff); the positive impact on the Bay from BARC's research and participation in Bay-related committees and other activities; and the commitment of BARC management. Nutrient reduction is one aspect of BARC's Environmental Management System.



### BARC SCIENTIST WINS WEST AGRO, INC. AWARD

**Dr. Anthony Capuco**, Research Physiologist with BARC's Bovine Functional Genomics Lab, is the 2006 winner of the American Dairy Science Association's West Agro, Inc. Award. This award was created to recognize outstanding research of milk quality as affected by control of mastitis, management of milking, and practices in production of milk. Capuco is the lead scientist of research which applies a functional genomics approach to the study of the regulation of mammary gland function, and his contributions to the understanding of bovine mammary physiology have been internationally recognized.



### FRUIT LAB RESEARCH RESULTS IN MOST-ACCESSED PAPER

Three BARC scientists, **Drs. Brent Black**, **Stan Hokanson**, and **Kim Lewers**, had the most-accessed online paper in the journal *Hort Science* for 2005, according to the American Society for Horticultural Science. The paper is titled, "Fruit Nitrogen Content of Sixteen Strawberry Genotypes Grown in an Advanced Matted Row Production System," and was published in August 2005. Their studies have revealed that different strawberry cultivars accumulate different levels of nitrogen in the whole plant and also in the fruit. This affects the amount of nitrogen fertilizer required for the strawberry crop and for any crop that follows.



### NEW POULTRY FACILITY DEDICATION

On August 16, 2006, BARC held a building dedication ceremony for its new poultry facility. Speeches were given by Congressman Steny Hoyer, 5th District, Maryland; Senator Paul Sarbanes; Dr. Edward Knipling, ARS Administrator; and **Dr. John McMurtry**, Research Leader of BARC's Growth Biology Laboratory. The event was hosted by **Dr. Phyllis Johnson**, Director of BARC.



L to R: Knipling, Sarbanes, Johnson, Hoyer, McMurtry

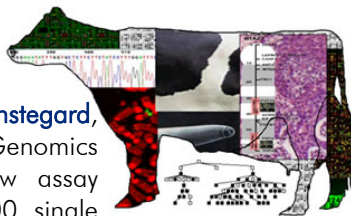
### BARC PARTNERSHIP WITH MIAMI DADE COLLEGE



ARS and Miami Dade College, have partnered over the last 4 years to provide internship experiences at the USDA. This summer several of BARC's scientists hosted 6 students from Miami Dade during an 8-week summer internship. The student experiences were hosted and supported by **Dr. Allen Smith**, **Dr. Delores Hill**, **Dr. Fatima Tahira**, **Mr. Nigel Gapper**, **Dr. Bruce Whitaker**, and **Dr. Gary Sammuels**. We appreciate and commend them for their support and commitment to mentoring students of diverse backgrounds and experiences. The students were placed in various labs which allowed for a broad range of learning, sharing, and growth and development.

## NEXT-GENERATION LARGE-SCALE ANALYSIS OF GENETIC VARIATION & FUNCTION

**Bovine Genotyping** - In a new partnership with Illumina, Inc., San Diego, CA, BARC scientists **Drs. Curt Van Tassell** and **Tad Sonstegard**, both of the Bovine Functional Genomics Laboratory, will develop a new assay design to genotype over 50,000 single nucleotide polymorphism (SNP) genetic markers simultaneously using an Illumina BeadStation. This Bovine BeadChip will be used to genotype over 10,000 cattle samples representing at least 10 different breeds in a collaboration including scientists at the University of Missouri and University of Alberta. The resultant genomics tools developed will be used to allow accurate prediction of genetic merit for dairy cattle at birth, and these efforts will serve as a model for improved breeding of other agricultural species. This project has been made possible through the award of a USDA Natural Research Initiative grant and cooperative research and development agreements with the National Association of Animal Breeders, Columbia, MO, and with Merial, Inc., Duluth, GA. For more information, contact Dr. Van Tassell at [curtvt@aipl.arsusda.gov](mailto:curtvt@aipl.arsusda.gov).



**Soybean genotyping** - The Illumina BeadStation has never been used for the assay of single nucleotide polymorphisms (SNP) in soybean. **Drs. Perry Cregan** and **Dave Hyten** of BARC's Soybean Genomics and Improvement Lab undertook the first analysis of soybean SNPs.



SNP analysis using the Illumina BeadStation was shown to reduce analysis time from many weeks to only a few days. Currently, the laboratory is working with Illumina, Inc. to create an assay for 1536 soybean SNP markers in parallel. Incredibly, the analysis of the 1536 loci will take exactly the same amount of laboratory time as the assay of the 384 loci that was just completed. SNP marker development is used for marker assisted selection for the genetic improvement of soybean. For

more information, contact Dr. Cregan at [creganp@ba.ars.usda.gov](mailto:creganp@ba.ars.usda.gov).



## Mark Your Calendar!

### UPCOMING SYMPOSIUM ON WOMEN IN AGRICULTURE



"Success in Science, Scholarship, and Business," a Symposium on Women in Agriculture, will be held on Thursday, September 14<sup>th</sup> from 9 a.m. until 5 p.m. at the University of Maryland, College Park. This event is co-sponsored by the university, USDA/

CSREES, and BARC, with goals of highlighting the accomplishments of Women in Agriculture at the university's 150 year anniversary mark and highlighting work options available to students in 2006 in diverse agricultural careers. The keynote address will be given by Dr. Phyllis Wise, provost of the University of Washington and former dean of agriculture and life sciences at UC-Davis. **Dr. Phyllis Johnson**, BARC's Director, will give one of the opening greetings; **Dr. Erin Connor**, Research Molecular Biologist with BARC's Bovine Functional Genomics Laboratory, will serve as a panelist; **Dr. Joan Lunney**, Research Chemist with BARC's Animal Parasitic Diseases Laboratory, will lead one of the round-table discussions; and **Dr. Ann Smigocki**, Research Geneticist with BARC's Molecular Plant Pathology Laboratory, will present a scientific poster. Both Drs. Lunney and Smigocki have represented BARC on the symposium planning committee. The ARS Recruitment Office will have an employment booth at the event. For information on this event, you may contact Loretta Carstens at [lcarsten@umd.edu](mailto:lcarsten@umd.edu).

### U.S. NATIONAL ARBORETUM'S HARVEST MOON PHOTO SHOOT WORKSHOP

**DATE: Thursday, October 5<sup>th</sup>, 5 p.m. – 8 p.m.**

The arboretum shines in an extraordinary way between the sunset and moonrise. Join photographer-teacher Joshua Taylor, Jr. to capture those moments on film. The National Capitol Columns are natural (and cooperative!) photographic subjects. Mr. Taylor will take students through the basics of composition, film speeds, exposure times and use of tripods in low light photography. Students will each receive a study guide and individualized attention in this workshop. Registrants will receive an equipment & supplies list with their workshop confirmation. Registration for this workshop is required, and there is a \$75 fee (\$60 for FONA members). For more information, visit [www.usna.usda.gov](http://www.usna.usda.gov).



### U.S. NATIONAL ARBORETUM CHINESE SCHOLAR'S STONE EXHIBIT

**DATE: September 2<sup>nd</sup> – 24<sup>th</sup>, 10 a.m. – 3:30 p.m.**

National Bonsai & Penjing Museum International Pavilion, Special Exhibits Wing  
Scholar stones, including Lingbi and Taihu stones collected in China, will be on display as well as stones from the permanent Museum collection and stones from private collections. For more information, please visit [www.usna.usda.gov](http://www.usna.usda.gov).

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