

# BARC e-Update



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November 2006

**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 SCIENTIST HONORED BY AAAS

 **Dr. Donald T. Krizek** of BARC's Sustainable Agricultural Systems Laboratory has been elected a Fellow of the American Association for the Advancement of Science (AAAS). The honor of being elected a Fellow of AAAS began in 1874 and is acknowledged with a certificate and rosette. Dr. Krizek is being recognized for his distinguished contributions to plant physiology in photoperiod research and the direction of programs in sustainable agriculture. Visit the AAAS at [www.aaas.org](http://www.aaas.org).

### BARC SCIENTIST HONORED BY ASHS

**Dr. Robert Griesbach** of BARC's Floral and Nursery Plants Research Unit was inducted as a Fellow of the American Society of Horticultural Science (ASHS) during its recent annual meeting which was held in New Orleans. Dr. Griesbach is being recognized for his leadership and expertise in the genetics and biochemistry of flower color and for the development of unique horticultural crops. Visit the ASHS at [www.ashs.org](http://www.ashs.org).



## Community Interest...

### AGREEMENT SIGNING BETWEEN COG & BARC

On December 4, 2006, Mr. David Robertson, Executive Director of the Metropolitan Washington Council of Governments (COG) and **Dr. Phyllis Johnson**, Director of BARC, will sign a non-funded Cooperative Agreement at COG headquarters in Washington, DC. The purpose of this agreement is to strengthen cooperation in a collaborative effort to fulfill the applicable commitments of the Chesapeake 2000 Agreement of the Chesapeake Bay Program as well as the general goals of the 2001 Anacostia Watershed Restoration Agreement. COG and BARC have been working towards a range of restoration goals since 1988. COG is a regional organization of 21 Washington area local governments. COG provides a focus for action and develops sound regional responses to such issues as the environment, affordable housing, economic development, health and family concerns, human services, population growth, public safety, and transportation. Visit COG on-line at [www.mwcog.org](http://www.mwcog.org).

qualifications may be noted in the descriptions of the specific internships. Interns participate in regularly scheduled educational programs and field trips, work on independent projects related to the arboretum, and interact with the arboretum's professional staff. Internships start in May/June 2007 and last 3-12 months, depending on the position. College credit may be arranged by the student and is encouraged. Applications for these internships will be accepted through February 16, 2007. For more information, please contact **Ms. Nancy Luria** at [nancy.luria@ars.usda.gov](mailto:nancy.luria@ars.usda.gov).

### USDA/ARS CFC KICKOFF



**Horace Holmes**  
ABC 7/WJLA

On November 15<sup>th</sup>, BARC hosted ARS' 2006 Combined Federal Campaign (CFC) Kickoff. The keynote speaker at this event was Mr. Horace Holmes, news reporter and co-anchor of ABC 7/WJLA TV's weekend news. Mr. Holmes' speech focused on the importance of selfless giving and on the ability of all people to make significant positive changes in the lives of others. Also

speaking at this

event was Mr. Ralph Nappi, Jr., president and CEO of the Make-A-Wish Foundation of the Mid-Atlantic. Mr. Nappi shared heartwarming success stories from the Foundation. The 2006 ARS CFC coordinator is Ms. Angelia Fleming Loggie.



**Ralph Nappi, Jr.**  
Make-A-Wish Foundation

### 2007 INTERNSHIP OPPORTUNITIES AT THE US NATIONAL ARBORETUM

The US National Arboretum offers a limited number of internships to qualified individuals seeking on-the-job work experience and training in horticulture, botany, research, education, facilities management, and public garden administration. Applicants need to have completed coursework or have acquired practical experience in horticulture or a related field. Basic gardening or laboratory skills, interest in plants, and the ability to work independently are very important. Additional

## IMPACTS OF GENETIC BOTTLENECKS ON SOYBEAN GENOME DIVERSITY

The domestication of soybean or any other crop is likely to impose a genetic bottleneck in that only a small fraction of the wild species is selected and becomes part of the domesticated crop. Also, growing a crop in different regions may also impose a genetic bottleneck in that only a few highly desirable types may be selected to be introduced. Genetic bottlenecks can cause a myriad number of potential problems from vulnerability to a new pest to the lack of genetic variation with which to make subsequent genetic improvement. Three distinct genetic bottlenecks have occurred in soybean: 1) domestication in Asia from the "wild soybean" to produce genetic lines grown by Asian farmers over the past 4,000-5,000 years, 2) the introduction of a small number of genetic lines from Asia to North America in the early 20th century that formed the basis of North American soybean cultivars, and 3) intensive breeding and selection over the past 75 years which resulted in the cultivars that are currently grown by US soybean producers. By genetic analysis it was determined that domestication and the small number of genetic lines introduced to North America, not plant breeding, was responsible for most of the loss in soybean diversity. This result is contrary to the long held assumption that modern crop cultivars have limited genetic diversity as a result of intensive selection imposed by plant breeding practices. The full report of this research appeared in the November 7, 2006 issue

of the Proceedings of the National Academy of Sciences (PNAS). For information, contact **Dr. Perry Cregan** ([creganp@ba.ars.usda.gov](mailto:creganp@ba.ars.usda.gov)) or **Dr. David Hyten** ([hytend@ba.ars.usda.gov](mailto:hytend@ba.ars.usda.gov)), both with BARC's Soybean Genomics and Improvement Laboratory.



**Wild Soybean**      **Soybean Landraces**

## LINGONBERRY NURSERY STOCK INFECTED WITH EXOTIC PATHOGENIC FUNGUS ~ OR NOT!

A grower in New Jersey was about to ship out nursery stock of lingonberry (*Vaccinium vitis-idaea*), a new crop in the US, to farmers throughout the US. Just prior to shipment, he noticed a leaf disease. The fungus causing this disease was tentatively identified as a pathogen that does not occur in the US. Dr. Peter Oudemans of Rutgers University asked scientists at BARC's Systematic Botany and Mycology Laboratory (SBML) to confirm the identification of the assumed exotic fungus. Close examination and a molecular sequence determined that this fungus was actually a relatively common species that was undescribed but already known in the US on other species of *Vaccinium*. As a result of this systematics research, the nursery stock of lingonberry was safely shipped, and \$100,000 was saved for the grower. **Dr. James Polashock** (stationed in Chatsworth, NJ) of BARC's Fruit Lab did the sequencing, and **Dr. Lisa Castlebury** from SBML analyzed the sequence.

## Mark Your Calendar!

### BELTSVILLE AREA DISTINGUISHED LECTURE SERIES

*This seminar is open to the public*



**Allison A. Yates**, PhD, RD, Director of the Beltsville Human Nutrition Research Center (BHNRC), will deliver the first Beltsville Area Director's Distinguished Lecture of the 2006-2007 season.

**Date:** Monday, December 11, 2006

**Time:** 10:30 a.m. - 11:30 a.m.

**Place:** Building 003 Auditorium, BARC-West

**Title:** "A Three-Dimensional View of Nutrition Today: Research, Policy, and Consumer Expectations"



### FULL MOON HIKES AT THE US NATIONAL ARBORETUM

January 3, 2007 ~ 7:00 p.m. - 9:00 p.m.

or

January 4, 2007 ~ 7:00 p.m. - 9:00 p.m.

Enter the US National Arboretum through the R Street gate as a whole new world awakens when the sun goes down. Take part in an invigorating five-mile hike over hill and dale with an Arboretum staffer as your guide. You'll see forest and field in a

whole new light, and, if you're very quiet, some of the creatures who venture out under the cover of darkness. Learn about the human and natural history that has shaped the land under your feet. The hikes go on regardless of the weather, so dress appropriately and lace up your best walking shoes. These popular hikes fill quickly, so reserve your place now! Sorry, no pets or children under 16 are allowed. Hikes are offered monthly. The fee for the hike is \$15 (FONA Members are \$12). For more information or to register, please visit [www.usna.usda.gov/Education/events](http://www.usna.usda.gov/Education/events).

### INVASIVE PLANTS WORKSHOP

January 24, 2007 ~ 9:00 a.m. - 4:30 p.m.

US National Arboretum Administration Building Auditorium

Anyone who manages a property has likely encountered rampant, unwanted plant growth. This workshop provides information on securing funding and negotiating contracts to remove invasive plants from public and private landscapes and natural areas. An afternoon field exercise features the arboretum's work in managing invasives. The fee for this workshop is \$50 (FONA Members are \$40). For more information or to register, please visit [www.usna.usda.gov/Education/events](http://www.usna.usda.gov/Education/events).



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