

DEPARTMENTAL SEMINAR SERIES

TITLE: **Frozen Genetic Resources: Cryopreservation strategies for conserving vegetatively propagated plants**

SPEAKER: *Dr. Gayle Volk, USDA-ARS National Center for Genetic Resources Preservation, Fort Collins, CO, USA*

LOCATION: Room 1307 - Thornbrough

TIME: 3:35 pm

DATE: Wednesday, February 25, 2015

ABSTRACT

Genebank collections of fruit crops and woody ornamentals are expensive to maintain in field or greenhouse conditions and remain vulnerable to environmental or biological threats. Vegetatively propagated perennial species such as apple, ash, poplar, and willow are ideally cryopreserved using dormant buds collected mid-winter, desiccated, and slowly cooled prior to placement into liquid nitrogen (LN). We have shown that the buds survive in LN for over 20 years and develop into plants by direct rooting or grafting. Less cold-hardy and herbaceous materials can be cryopreserved as shoot tips. My research focuses on understanding the physiological processes of cryopreservation and identifying the key bottlenecks that must be overcome for widespread application of this technology for effective, long-term genebanking.

Biography

Dr. Volk is a Plant Physiologist at the USDA-ARS National Center for Genetic Resources Preservation, one of the largest seed banks in the world. Dr. Volk has more than 80 journal publications on genetic diversity and cryobiology of crops such as apple, pear and orange. She is engaged in development and coordination of global agricultural genebanking strategies. In her role as the chair of the U.S. Apple Crop Germplasm Committee, she coordinated the publication of the U.S. Apple Crop Vulnerability Statement (2014). Dr Volk's research is funded by the USDA, as well as, several other commodity groups.