

## VARIETY AND GERMLASM RELEASES

### Carrot

Apopka (1985)  
B2302, B2566 (1986)  
B2566 Carrot Inbred (1987)  
Savory [(B8080xB2302)xB2566] (1986)  
Beta III (1986)  
B493, B9304 (1986)  
HCM (High Carotene Mass) (1987)  
Atlantis [(B4367xB36402)xB3180] (1987)  
B3180 (1987)  
Carolong [(6439Sx6274M2)xApopka] (1987)  
B5280 (1988)  
B6366 (1993)  
B7254 (1993)  
B6333 (1993)  
B6253 (1993)  
B7262 Purple Carrot Inbred (1993)  
B7322 (1993)  
B5238 (1993)  
Wisconsin Wild Cytoplasm (1993)  
Motley Dwarf Resistant Population (1993)  
B1111 (2009)

### Cucumber

Wisconsin 2843 multiple disease resistance (1985)  
'Wautoma' cucumber (1986)  
Wisconsin 5207 multiple disease resistance (1986)  
Wisconsin 1983 cucumber (1986)  
Cucumber population WI 6383 and derived inbreds  
WI 5098 and WI 5551 (1993)  
Cucumber germplasm: isozyme genetic stocks  
W6743, W6744, W6745 (1996)  
Early Orange Mass 400, Early Orange Mass 402,  
and Late Orange Mass 404: High-Carotene  
Cucumber Germplasm (1997)  
Cucumber germplasm: isozyme genetic stocks  
W6743, W6744, W6745

### Onion

B1717, B1828, B2354 Yellow storage inbreds(1999)  
Galanthum-cytoplasmic male-sterile onion  
population (1999)  
B8667 yellow inbred (2007)  
Ski-1 red inbred(2007)  
OH-1 genetic stock (2007)

### Potato

M1-M5 Tetraploid clones with resistance to cold-  
induced sweetening (2011)



The Vegetable Crops Research Unit of the Agricultural Research Service branch of the United States Department of Agriculture is located in Madison, Wisconsin, and is associated with the Departments of Horticulture, Entomology, and Plant Pathology at the University of Wisconsin-Madison.

#### CONTACT INFORMATION

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United States Department of Agriculture  
Agricultural Research Service

## Vegetable Crops Research Unit



# VCRU Research Projects



## OUR MISSION

The mission of the research unit is to investigate the genetics, cytogenetics, taxonomy, gene flow, disease resistance, insect interactions, molecular biology and breeding strategies of vegetable and fruit crops. This includes the investigation of chromosome behavior, phylogeny, pest resistance and suppression, intra- and interspecific crossing, nutritional quality, flavor, storage quality, and effects of environmental stress and insects on *Solanum* species, carrot, cucumber, onion, garlic, and cranberries. This also includes the use of exotic germplasm, germplasm enhancement, and development of production technologies where needed.



### **JOHN BAMBERG - POTATO GERMPLASM INTRODUCTION - JOHN.BAMBERG@ARS.USDA.GOV**

Administration of the US working collection of potato germplasm, the Inter-Regional Potato Introduction Station (NRSP-6), Sturgeon Bay, WI. Research related to the introduction, preservation, classification, distribution and evaluation of wild and cultivated tuber-bearing species of *Solanum* (potato).



### **PAUL BETHKE - POST-HARVEST PHYSIOLOGY OF POTATO TUBERS - PAUL.BETHKE@ARS.USDA.GOV**

Tuber water relations, carbohydrate metabolism, & physiological age conducted at the molecular, cellular, whole tuber, & commercial-storage levels. Long-term goals are to better understand potato physiology, and to identify specific molecular and cellular events that predict or influence the marketability of stored potatoes.



### **JOHANNE BRUNET - GENE FLOW - JOHANNE.BRUNET@ARS.USDA.GOV**

Gene flow by insect pollinators; movement of genes via pollen between agricultural fields, between natural populations and between crop and wild relatives. Impact of landscape features on gene flow. Potential risk of gene flow and transgene escape in agricultural systems.



### **DENNIS HALTERMAN - POTATO DISEASE RESISTANCE - DENNIS.HALTERMAN@ARS.USDA.GOV**

Molecular mechanisms of disease resistance in potato. Resistance to the oomycete late blight pathogen *Phytophthora infestans*, as well as *Verticillium dahliae*, a soil-borne fungus that causes wilting and premature senescence, *Alternaria solani*, which causes potato early blight, and Potato Virus Y.



### **MICHAEL HAVEY - ONION AND CUCURBIT GENETICS - MICHAEL.HAVEY@ARS.USDA.GOV**

Molecular and classical genetics of vegetables, including the organellar genetics of Cucumis, anticarcinogenic compounds in the Alliiums, mechanisms of virus resistance, and development of molecular markers for selection of high value traits. Genetic improvement and inbred development for cucumber and onion.



### **SHELLEY JANSKY - POTATO GERMPLASM ENHANCEMENT - SHELLEY.JANSKY@ARS.USDA.GOV**

Germplasm enhancement using wild *Solanum* species. Identification and genetics of valuable traits in wild relatives. Introgression of wild germplasm into cultivated potato. Reproductive biology focusing on crossing barriers and mechanisms to overcome these barriers. Ploidy manipulations using haploids and 2n gametes.



### **PHILIPP SIMON - CARROT AND GARLIC GENETICS - RESEARCH LEADER - PHILIPP.SIMON@ARS.USDA.GOV**

Genetics and biochemistry of culinary and nutritive factors in carrots and garlic. Terpenoid and sugar genetics. Genetics, plant cell culture, and genetic transformation.



### **DAVID SPOONER - POTATO AND CARROT GERMPLASM SYSTEMATICS - DAVID.SPOONER@ARS.USDA.GOV**

Investigation of the species boundaries and phylogenetic relationships of wild and cultivated potatoes, tomatoes, and carrots using comparative morphology and DNA marker and DNA sequence analysis. Collects wild germplasm of these species worldwide, and maintains a herbarium of the NRSP-6 potato collections at Sturgeon Bay, WI.



### **SHAWN STEFFAN - CRANBERRY ENTOMOLOGY - SHAWN.STEFFAN@ARS.USDA.GOV**

Trophic structure of arthropod communities in cultivated and wild *Vaccinium* systems; field-scale manipulation of beneficial insect populations; evaluation of novel insect population suppression systems; surveillance of invasive insect species.



### **YIQUN WENG - CUCUMBER GENETICS AND BREEDING - YIQUN.WENG@ARS.USDA.GOV**

Genetics and genomics of important traits in cucumber; development of molecular markers and applications in breeding practice; genetic diversity, phylogenetics and comparative genomics in Cucumis species; development of cucumber genomic resources.



### **KYLE WILLIS - GENETICS OF PATHOGEN-HOST INTERACTION - DAVIDK.WILLIS@ARS.USDA.GOV**

Molecular genetics of the plant-pathogen interaction; genetics of brown spot disease of snap bean caused by the bacterium *Pseudomonas syringae* pv. *syringae*; quantifying virus replication and gene expression in both the plant hosts and insect vectors.



### **JUAN ZALAPA - CRANBERRY BREEDING, GENETICS, AND GENOMICS - JUAN.ZALAPA@ARS.USDA.GOV**

Genetic tool development, genetic diversity & population structure of wild populations, identification of valuable traits in wild *Vaccinium* & their introgression into cultivated varieties; inheritance determination of important traits, field evaluation of cranberry germplasm, germplasm enhancement for use by growers, consumers, and researchers.