

Jennifer M. Cruse-Sanders
State Botanical Garden of Georgia
2450 South Milledge Ave., Athens, GA 30605
Phone: 706-542-6131, email: crusesanders@uga.edu

Professional Preparation:

Ph.D. in Botany, University of Georgia, Athens, GA (2003)
M.S. in Botany, University of Georgia, Athens, GA (1997)
B.A. in Biology, Boston University, Boston MA (1992)

Appointments:

Director, State Botanical Garden of Georgia, University of Georgia (2017-present)
Vice President for Science and Conservation, Atlanta Botanical Garden (2012-2017)
Director of Research and Conservation, Atlanta Botanical Garden (2008-2012)
Research Associate Rancho Santa Ana Botanic Garden (2006-2015)
Assistant Professor of Biology, Salem College, Winston-Salem, NC (2005-2008)
Keck Postdoctoral Fellow, Rancho Santa Ana Botanic Garden, Claremont Graduate University (2003-2005)

Awards:

2016, Botanic Garden Conservation International, Marsh Award for International Plant Conservation
2016, National Areas Association, National Carl N. Becker Stewardship Award
2015, USDA Forest Service, Wings Across America International Award for Urban Communities in Conservation for the Greater Atlanta Pollinator Partnership
2014, Audubon -Toyota TogetherGreen, Conservation Fellowship for Urban Habitat Conservation and Creation of Pollinator Habitats
2014, Technology Association of Georgia, STEM education award finalist for the Greater Atlanta Pollinator Partnership
2009, Institute for Museums and Library Services funded Imperiled Butterfly Conservation Management fellow

Publications (*undergraduate student coauthors):

Cruse-Sanders, J.M. 2016. Postcards from the Field: The role of partnership and horticulture in plant conservation in the Southeastern United States of America. *Sibbaldia* 14: 141-156.

Cruse-Sanders, J.M., & A. Casas. 2016. Evolutionary impacts of human activities on plants: Medicinals, domestication, and conservation at botanic gardens. In A. Casas, J. Torres-Guevara y F. Parra (Eds) Domesticacion en el Continente Americano: Historia y perspectivas del manejo de recursos geneticos en el Nuevo Mundo Pp. 714-737.

Casas, A., J. Blancas, A. Otero-Arnaiz, J.M. Cruse-Sanders, R. Lira, Aide. Avendano, F. Parra, S. G. Rodriguez, C. J. F. Urbina, I. Torres-Garcia, S. Rangel Landa. 2016. Evolutionary Ethnobotanical Studies of Incipient Domestication of Plants in Mesoamerica. In R. Lira, A. Casas, J.J. Blancas (eds), Ethnobotany of Mexico: Interactions of people and plants in Mesoamerica. Springer, Pp. 257-285. DOI: 10.1007/978-1-4614-6669-7

Gustafson, D. J. J.M. Cruse-Sanders, K. Bucalo, M. Duplantier. 2015. Survey of genetic diversity and seed germination rates of the southeastern endemic *Symphotrichum georgianum* (Alexander) G.L. Nesom (Asteraceae) from large and small populations 1,2. *Journal of the Torrey Botanical Society*: 143(3): 274-284.

Stephens, J.D. W.L. Rogers, K. Heyduk, J.M. Cruse-Sanders, R. O. Determann, T.C. Glenn, R.L. Malmberg. 2015. Resolving phylogenetic relationships of the recently radiated carnivorous plant genus *Sarracenia* using target enrichment. *Molecular Phylogenetics and Evolution* 85: 76-87.

- *Perullo, N., R.O. Determann, J.M. Cruse-Sanders, G.S. Pullman. 2015. Seed cryopreservation and micropropagation of the critically endangered species swamp pink (*Helonias bullata* L.) In Vitro Cellular and Developmental Biology – Plant 51(3): 284-293.
- Bucalo, K. J.M. Cruse-Sanders, K.S. Burgess, A. Reynolds. 2015. Evaluating the evolutionary and genetic relationships among the Andean orchids of Ecuador. *Genome* 58(5): 202-202.
- *Khanna, S. H. Jenkins, K. Bucalo, R.O. Determann, J.M. Cruse-Sanders, G.S. Pullman. 2014. Effects of seed cryopreservation, stratification and scarification on germination of five rare species of pitcher plants. *Cryoletters* 35 (1): 29-39.
- *Lynch, S, R.K. Johnston, R.O. Determann, J.M. Cruse-Sanders, G.S. Pullman. 2013 Seed cryostorage and micropropagation of Georgia aster, *Symphotrichum georgianum* (Alexander) Nesom: A threatened species from the southeastern United States. *HortScience* 48(6): 750-755.
- Cruse-Sanders, J.M., K.C. Parker, E.A. Friar, D.I. Huang, S. Mashayekhi, L.M. Prince, A. Otero-Arnaiz, A. Casas. 2013. Managing diversity: Domestication and gene flow in *Stenocereus stellatus* Riccob. (Cactaceae) in Mexico. *Ecology and Evolution* 3: 1340-1355.
- Porter, J.M., J. Cruse-Sanders, L. Prince, R. Lauri. 2012. Species status of *Sclerocactus brevispinus*, *S. wetlandicus*, and *S. glaucus*: Inferences from morphology, chloroplast DNA sequences, and AFLP markers. *Aliso* 30 (2): 69-84
- *Johnson, T., J.M. Cruse-Sanders, G.S. Pullman. 2012. Micropropagation and seed cryopreservation of the critically endangered species Tennessee yellow-eye grass, *Xyris tennesseensis* Kral. In *In Vitro Cell. Dev. Biol - Plant.* 48 (3): 369
- *X. Ma, K. Bucalo, R.O. Determann, J.M. Cruse-Sanders and G.S. Pullman. 2012. Somatic embryogenesis, plant regeneration, and cryopreservation for *Torreya taxifolia*, a highly endangered coniferous species. *In Vitro Cell. Dev. Biol - Plant.* 48: 324-334.
- *Northcutt, C., D. Davies, R. Gagliardo, K. Bucalo, R.O. Determann, J.M. Cruse-Sanders, G.S. Pullman. 2012. Germination In Vitro, micropropagation, and cryogenic storage for three rare pitcher plants: *Sarracenia oreophila* (Kearney) Wherry (Federally Endangered), *S. leucophylla* Raf., and *S. purpurea* spp. *venosa* (Raf.) Wherry. *HortScience* 47 (1): 74–80.
- Gagliardo R, M. LaBarthe, M Zaic, J Cruse-Sanders, RO Determann. 2012. In vitro propagation of Trillium species: With notes on root formation, cleaning protocols and media formulations. *Native Plants* 13(1): 57-63.
- Smith, J., K. O'Donnell, L.L. Mount, K. Shin, K. Peacock, A. Trulock, T. Spector, J. Cruse-Sanders, R. Determann. 2011. A Novel Fusarium species causes a canker disease of the critically endangered conifer, *Torreya taxifolia*. *Plant Disease* DOI: 10.1094/PDIS-10-10-0703.
- Richards, M., J. Cruse-Sanders. 2010. A practical and integrated approach to native orchid conservation and propagation at the Atlanta Botanical Garden. *North American Native Orchid Journal* 16(1): 25-30. 2010.
- Rogers, W.L., J.M. Cruse-Sanders, R.O. Determann, and R.L. Malmberg. 2010. Development and characterization of microsatellite markers in *Sarracenia* L. (pitcher plant) species. *Conservation Genetics Resources* 2(1): 75-79.
- Friar, E.A., L.M. Prince, J.M. Cruse-Sanders, M.E. McGlaughlin, C.A. Butterworth, and B.G. Baldwin. 2008. Hybrid origin and genomic mosaicism of *Dubautia scabra* (Hawaiian silversword alliance; Asteraceae, Madiinae). *Systematic Botany* 33: 589-597.
- Friar E.A., J.M. Cruse-Sanders, M.E. McGlaughlin. 2007. Gene flow in *Dubautia arborea* and *D. ciliolata*: The roles of ecology and isolation by distance in maintaining species boundaries despite ongoing hybridization. *Molecular Ecology* 16, 4028-4038
- Friar E.A., L.M. Prince, E.H. Roalson, M.E. McGlaughlin, J.M. Cruse-Sanders, S.J. DeGroot, J.M. Porter. 2006. Ecological speciation in the East Maui-endemic *Dubautia* (Asteraceae) species. *Evolution*, 60, 1777-1792
- Otero-Arnaiz, A, A. Casas, J.L. Hamrick and J.M. Cruse-Sanders. 2005. Genetic variation and evolution of *Polaskia chichipe* (Cactaceae) under domestication in the Tehuacan Valley, central Mexico. *Molecular Ecology*, 14: 1603-1612.

- Casas, A, J.M. Cruse-Sanders, E. Morales, A. Otero-Arnaiz, and A. Valiente-Banuet. 2005. Maintenance of phenotypic and genotypic diversity in managed populations of *Stenocereus stellatus* (Cactaceae) by indigenous peoples in Central Mexico. *Biodiversity and Conservation*, 15: 879-898.
- Cruse-Sanders, J.M., J.L. Hamrick, and J.A. Ahumada. 2005. Consequences of harvesting for genetic diversity in American ginseng (*Panax quinquefolius* L.): A simulation study. *Biodiversity and Conservation* 14:493-504.
- Otero-Arnaiz, A., J.M. Cruse-Sanders, A. Casas, and J.L. Hamrick. 2004. Isolation and characterization of microsatellites in the columnar cactus: *Polaskia chichipe* and cross-species amplification within the Tribe Pachycereeae (Cactaceae). *Molecular Ecology Notes*, 4:265-267.
- Cruse-Sanders, J.M. and J.L. Hamrick. 2004. Spatial and genetic structure within populations of wild American ginseng (*Panax quinquefolius* L., Araliaceae). *Journal of Heredity*, 95:309-321.
- Cruse-Sanders, J.M. and J.L. Hamrick. 2004. Genetic diversity in harvested and protected populations of wild American ginseng, *Panax quinquefolius* L. (Araliaceae). *American Journal of Botany* 91:540-548
- Burke, R.A., J.L. Meyer, J.M. Cruse, K.M. Birkhead, and M Paul. 1999. Soil-atmosphere exchange of methane in adjacent cultivated and floodplain forest soils. *Biogeochemistry*, 104 (D7): 8161-8171.

Grants and contracts awarded 2015-2017:

- 2017 NSF Division of Environmental Biology, Collaborative Research: Reasons for Rarity? Exploring Acclimatory and Adaptive Constraints to Commonness \$373,745
- 2016 IMLS Museums for America, Conservation award. Orchid DNA Barcoding project \$150,000
- 2016 USFWS Preventing extinction of Florida Torreya. \$20,000
- 2016 USDA Forest Service combined rare plant conservation. \$27,493
- 2016 USFWS Funding to support the GPCA Safeguarding Database. \$20,000
- 2015 NFWF Gulf Environmental Benefit Fund, Restoration of species diversity and hydrologic function in wetlands within the coastal dune lake watershed (FL). \$657,000
- 2015 Forest Service Status assessment and conservation recommendations for American Ginseng \$55,000
- 2015 USFWS Coastal Program. Propagating and Reintroducing Rare Species to Restored Bogs in Florida State Parks. \$37,000
- 2015 USFWS Restoration of rare species and establishment of pollinator gardens. \$52,000
- Other grants and contracts from the USFWS, USDA Forest Service, GA DNR, Tennessee Valley Authority, Association for Zoological Horticulture and donors amount to approximately \$70,000.

Synergistic Activities:

- Southeastern Partners in Plant Conservation (2015-present) Organizer and steering committee member. Also served on the steering committee for the At-risk species workshops for the southeast, USFWS Region 4.
- Atlanta Science Festival, Steering Committee (2013-2016) <http://atlantasciencefestival.org/>
- Georgia DNR, State Wildlife Action Plan Revision Committee (2013-2015)
- North American Orchid Conservation Center, Smithsonian Ecological Research Center, (2012-2017)
- Urban Habitat Restoration and service learning (2011-2017)
- Greater Atlanta Pollinator Partnership, www.gapp.org (2011-2017)
- Organizer of Science Café at the Atlanta Botanical Garden (2010-2016)
<https://itunes.apple.com/us/podcast/science-cafe/id373156685>
- Georgia Plant Conservation Alliance (1998-2003; 2008-present)
- Participant in Imperiled Butterfly Conservation Management Workshops, (2009-2011), funded through the Institute for Museums and Library Service.
- Atlanta Botanical Garden conservation contact for the Center for Plant Conservation, (2008-2017)