Michelle L. Gaynor

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Education

Expected Ph.D., Botany 2018 – 2023
University of Florida, Gainesville, FL; Advisor: Dr. Pamela S. Soltis

B.S., Biology 2014 – 2018
University of Central Florida, Orlando, FL; Advisor: Dr. Eric A. Hoffman

Publications

**equally contributing authors*
ORCID ID: 0000-0002-3912-6079

4. **Gaynor ML,** Walters LJ, and Hoffman EA. 2019. Assessing genetic diversity within natural populations of smooth cordgrass to ensure effective restoration efforts. *Restoration Ecology*, 27(6): 1452 – 1462. doi: 10.1111/rec.13014

3. An H, Qi X, **Gaynor ML**, Hao Y, Grebken SC, Mabry ME, Conant GC, Barker M, Fu T, Yi B, and Pires JC. 2019. Transcriptome and organellar sequencing highlights the complex origin and diversification of allotetraploid *Brassica napus*. *Nature Communication*, 10: 2878. doi: 10.1038/s41467-019-10757-1

2. **Gaynor ML,** Marchant DB, Soltis DE, and Soltis PS. 2018. Climatic niche comparison among ploidal levels in the classic autopolyploid system, *Galax urceolata* (Diapensiaceae). *American Journal of Botany,* 105(10): 1–12. doi: 10.1002/ajb2.1161.

1. **Gaynor ML,** Ng J, and Laport RG. 2018. Phylogenetic structure of plant communities: Are polyploids distantly related to co-occurring diploids? *Frontiers in Ecology and Evolution*, 6(52): 1-14. doi: 10.3389/fevo.2018.00052.

In review:

Gaynor ML*, Lim-Hing S*, and Mason CM. Genome duplication impact on secondary metabolite composition in non-cultivated species: A systematic meta-analysis. *In Review.*

Gaynor ML, Fu C, Gao L, Lu L, Soltis DE, and Soltis PS. Biogeography and ecological niche evolution in Diapensiaceae inferred from phylogenomic data. *In Review for Journal of Systematics and Evolution.*

In preparation:

Flemming AD, Belitz MW, **Gaynor ML**, Love K, Melton AE, Moran SM, Pirlo J, Randall Z, and Singer RA. Interdisciplinary uses of natural history data aggregation. *In prep.*

Folk RA*, **Gaynor ML***, Okuyama Y, Grady CJ, and Guralnick RP. Ancestral niche and range contact through time in the *Heuchera* group. *In prep.*

Non-peer reviewed publications:

Min Y, and **Gaynor ML**. 2019. Get to know your new student representative. Plant Science Bulletin 65(3): 177 – 179.

Gaynor ML. 2019. Climatic niche modeling for beetleweed (*Galax urceolata*, Diapensiaceae). iDigBio Research Spotlight.

Gaynor ML and Lim-Hing S. 2019. Establishing a BSA student chapter at our university. Plant Science Bulletin 65(1): 53-54.

Gaynor ML. 2018. Making the most out of summer off-campus research experiences. *University of Central Florida Office of Undergraduate Research*, Student Blog.

Research Experience

University of Florida Botany Research Assistantship Aug. 2018 – Present
Dr. Pamela S. Soltis and Dr. Douglas E. Soltis
Florida Museum of Natural History, University of Florida

Undergraduate Researcher Jan. 2015 – Aug. 2018
Dr. Eric A. Hoffman and Dr. Linda J. Walters
Department of Biology, University of Central Florida
Assessing genetic diversity within natural populations of smooth cordgrass to ensure effective restoration efforts.

NSF-funded Undergraduate Research Experience (REU) May 2017 – Aug. 2017
Dr. J. Chris Pires
Division of Biological Sciences, University of Missouri
Unraveling the origins of allotetraploid *Brassica napus*.

iDigBio NSF-funded Research Internship May 2017
Dr. Pamela S. Soltis and Dr. Douglas E. Soltis
Florida Museum of Natural History, University of Florida
Absence of niche divergence among ploidal levels in a classic autopolyploid system, *Galax urceolata*.

NSF-funded Undergraduate Research Experience (REU) May 2016 – Aug. 2016
Dr. Julienne Ng and Dr. Robert G. Laport
Ecology & Evolutionary Biology, University of Colorado-Boulder
The influence of genome duplication on Brassicaceae and Rosaceae

communities across the United States.

Research Assistant and Student Science Training Program Scholar May 2013 – Aug. 2013
Dr. Kevin Kenworthy
IFAS Department of Agronomy, University of Florida
Rooting characteristics of elite Zoysiagrass genotypes.

Grants (Total ~ $4840)

2019 American Society of Plant Taxonomists Travel Award for Botany 2019. ($335)
2018 American Society of Plant Taxonomists Travel Award for Botany 2018. ($335)
2018 Student Undergraduate Research Council Research Funding, University of Central Florida. ($300)
2017 NSF-sponsored REU Travel Grant Program for Botany 2017. Rocky Mountain Biological Laboratory. ($1000)
2017 The Botanical Society of America Undergraduate Student Research Award. ($200)
2017 Undergraduate Travel Award for Botany 2017, Student Undergraduate Research Council, University of Central Florida. ($300)
2016 Undergraduate Student Travel Award for Botany 2016, Office of Undergraduate Research, University of Central Florida. ($300)
2016 Sigma-Xi Grant-in-Aid for Research. ($1000)
2016 Florida Undergraduate Research Conference Travel Grant, Office of Undergraduate Research, University of Central Florida. ($70)
2016 Undergraduate Research Grant, Office of Undergraduate Research, University of Central Florida. ($500)
2015 Undergraduate Research Grant, Office of Undergraduate Research, University of Central Florida. ($500)

Fellowships (Total ~$117600)

2020 – 24 National Science Foundation Graduate Research Fellowship, National Science Foundation. ($102000)
2018 – 21 Grinter Fellowship Award, University of Florida. ($6000)
2016 –18 Research and Mentoring Program (RAMP) Scholar, University of Central Florida. ($5600)
2016 – 17 Boeing Inc. Undergraduate Research Fellow, University of Central Florida. ($2000)
2016 NSF-funded Undergraduate Research Experience Fellow, University of Central Florida. ($1000)
2015 Summer Undergraduate Research Fellow, University of Central Florida. ($1000)

Honors and Awards

2019 Acclaimed Knight, University of Central Florida.

2018 Young Botanist Award, Botanical Society of America.
2018 Honorable Mention, Graduate Research Fellowship Program, National Science Foundation. *Awarded in 2019
2017 Winter Park Garden Club Scholarship. ($1500)
2016 – 18 President's Honor Roll, University of Central Florida.
2016 Golden Opportunity Scholars with the American Agronomy Society, Crop Science Society of America, and Soil Science Society of America.
2014 – 18 Florida Bright Future Scholarship. ($8547)
2014 EXCEL Program Scholar, University of Central Florida.

Presentations

Oral (Total = 8)

2019 **Gaynor ML,** Lim-Hing S, and Mason CM. Genome duplication impact on secondary metabolite composition in non-cultivated species. *Botany 2019*. Tucson, AZ.
2018 **Gaynor ML,** Walters LJ, and Hoffman EA. Assessing genetic diversity within natural populations of smooth cordgrass to promote effective restoration efforts. *Botany 2018*. Rochester, MN.
2017 **Gaynor ML**. Student scholarship recipient speaker. *University of Central Florida College of Science Scholarship Luncheon*. Orlando, FL.
2017 **Gaynor ML,** Walters LJ, and Hoffman EA. Assessing genetic diversity within natural populations of smooth cordgrass to promote effective restoration efforts. *2017 ASA, CSSA, and SSSA International Annual Meeting*. Tampa, FL.
2017 **Gaynor ML,** Laport RG, and Ng J. The influence of genome duplication on Brassicaceae and Rosaceae communities across the United States. *Botany 2017.* Fort Worth, TX. **Best Ecology Undergraduate Presentation. ($100)**
2017 **Gaynor ML,** Walters LJ, and Hoffman EA. Assessing genetic diversity within natural populations of smooth cordgrass to promote effective restoration efforts. *Eureka*. University of Central Florida. Orlando, FL. **1st Place Student Presenter Award.**
2015 **Gaynor ML,** Walters LJ, and Hoffman EA. Assessing genetic diversity within natural populations of smooth cordgrass to ensure effective restoration efforts. *Summer Undergraduate Research Presentation*. University of Central Florida, Orlando, FL.
2013 **Gaynor ML,** and Kenworthy KE. Rooting characteristics of elite Zoysiagrass genotypes. *Student Science Training Program Presentation*. University of Florida, Gainesville, FL.

Poster (Total = 18)

2019 **Gaynor ML,** Soltis DE, and Soltis PS. 2019. Phylogenetic patterns of ecological niche evolution in Diapensiaceae. *Botany 2019*. Tucson, AZ.

2019 **Gaynor ML,** Marchant DB, Soltis DE, and Soltis PS. 2018. Climatic niche comparison among ploidal levels in the classic autopolyploid system, *Galax urceolata* (Diapensiaceae). *International Polyploidy Conference*. Gent, Belgium.

2018 **Gaynor ML,** Marchant DB, Soltis DE, and Soltis PS. 2018. Climatic niche comparison among ploidal levels in the classic autopolyploid system, *Galax urceolata* (Diapensiaceae). *Science by the Shore*. St. Augustine, FL.

2018 **Gaynor ML,** Lim-Hing S, and Mason CM. Genome duplication impact on secondary metabolite composition in non-cultivated species. *Botany 2018*. Rochester, MN.

2018 **Gaynor ML,** Walters LJ, and Hoffman EA. Assessing genetic diversity within natural populations of smooth cordgrass to promote effective restoration efforts. *Showcase of Undergraduate Research Excellence.* University of Central Florida. Orlando, Fl. **Life Science Judges' Choice Award. ($500)**

2018 **Gaynor ML,** Walters LJ, and Hoffman EA. Assessing genetic diversity within natural populations of smooth cordgrass to promote effective restoration efforts. *Indian River Lagoon Symposium*. Florida Atlantic University's Harbor Branch Oceanographic Institute. Fort Pierce, FL.

2017 **Gaynor ML,** Walters LJ, and Hoffman EA. Assessing genetic diversity within natural populations of smooth cordgrass to promote effective restoration efforts. *Plants Beyond Limits,* University of Central Florida. Orlando, FL. **2nd Place Undergraduate Award. ($200)**

2017 **Gaynor ML,** An H, and Pires JC. Unraveling the origins of allotetraploid *Brassica napus. University of Missouri Summer Research Forum.* Columbia, MO.

2017 **Gaynor ML,** Marchant DB, Soltis DE, and Soltis PS. Absence of clear niche divergence among ploidal levels in a classic autopolyploid system, *Galax urceolata*. *Botany 2017.* Fort Worth, TX.

2017 **Gaynor ML,** Walters LJ, and Hoffman EA. Assessing genetic diversity within natural populations of smooth cordgrass to promote effective restoration efforts. *American Society of Plant Biologist Southern Sectional.* Orlando, FL. **2nd Place Undergraduate Poster Award. ($70)**

2017 **Gaynor ML,** Walters LJ, and Hoffman EA. Assessing genetic diversity within natural populations of smooth cordgrass to promote effective restoration efforts. *Showcase of Undergraduate Research Excellence*. University of Central Florida. Orlando, FL.

2017 **Gaynor ML,** Walters LJ, and Hoffman EA. Assessing genetic diversity within natural populations of smooth cordgrass to promote effective restoration efforts. *Indian River Lagoon Symposium*. Florida Atlantic University's Harbor Branch Oceanographic Institute. Fort Pierce, FL.

2016 **Gaynor ML,** Laport RG, and Ng J. The influence of genome duplication on Brassicaceae and Rosaceae communities across the United States. *2016 ASA, CSSA, and SSSA International Annual Meeting*. Phoenix, AZ.

2016 **Gaynor ML,** Laport RG, and Ng J. The influence of genome duplication on Brassicaceae and Rosaceae communities across the United States. *Botany 2016*. Savannah, GA. **Genetics Section Student Award. ($250)**

2016 **Gaynor ML,** Walters LJ, and Hoffman EA. Assessing genetic diversity within natural populations of smooth cordgrass to ensure effective restoration efforts. *Showcase of Undergraduate Research Excellence*. University of Central Florida. Orlando, FL.

2016 **Gaynor ML,** Walters LJ, and Hoffman EA. Assessing genetic diversity within natural populations of smooth cordgrass to ensure effective Restoration Efforts. *Southeastern Ecology and Evolution Conference*. Florida State University. Tallahassee, FL.

2016 **Gaynor ML,** Walters LJ, and Hoffman EA. Assessing genetic diversity within natural populations of smooth cordgrass to ensure effective restoration efforts. *Florida Undergraduate Research Conference.* University of Tampa, FL.

2013 **Gaynor ML,** and Kenworthy KE. Rooting characteristics of elite Zoysiagrass genotypes. *Student Science Training Program Poster Showcase*. University of Florida, Gainesville, FL.

Co-author presentations (Total = 7)

2019 Pires JC, An H, Qi X, **Gaynor ML,** Hao Y, Mabry ME, Conant GC, and Barker MS. Transcriptome and organellar sequencing highlight the complex origin and diversification of allotetraploid *Brassica napus. Botany 2019*. Tucson, AZ.

2019 Folk R, **Gaynor ML,** Soltis PS, Soltis DR, and Guralnick R. New prospects in studying hybridization: Assessing historical climatic drivers. *Botany 2019*. Tucson, AZ.

2019 An H, Qi X, **Gaynor ML,** Hao Y, Gebken SC, Mabry ME, Conant GC, Barker MS, Fu T, Yi B, and Pires JC. The genetic structure and diversification process of allotetraploid *Brassica napus*. *Evolution 2019*. Providence, RI.

2018 **Gaynor ML**, Laport RG, and Ng J. Waves or ripples? Whole genome duplication and plant community structure. *Ecological Society of America Annual Meeting*. New Orleans, LA.

2018 An H, Qi X, **Gaynor ML,** Hao Y, Gebken SC, Mabry ME, Conant GC, Barker MS, Fu T, Yi B, and Pires JC. Transcriptome and organellar genome sequencing elucidate the origin and diversification of allotetraploid *Brassica napus*. *Brassica 2018.* Saint-Malo, France.

2018 An H, **Gaynor ML,** Gebken SC, and Pires JC. Origin(s) of a hybrid: history of allopolyploid *Brassica napus* using genome-wide data. *Botany 2018*. Rochester, MN.

2018 An H, **Gaynor ML,** Gebken SC, and Pires JC. Origin(s) of a hybrid: history of allopolyploid *Brassica napus* using genome-wide data. *Life Science Week*. University of Missouri, Columbia, MO.

Synergistic Activities and Outreach

2019 – Present	Peer review for: *Scientific Reports (1), Ecology and Evolution (1), Biological Journal of the Linnaean Society (1), Frontiers in Plant Science (1).*
2019 – 2021	Student Representative, Botanical Society of America (BSA).
2019 – 2020	Volunteer for Society of Systematic Biologist 2020 standalone meeting. Assisted in developing SSB2020 website (systbiol.github.io/ssb2020/).
2019 – Present	Planting Science Mentor
2018 – Present	iDigBio, University of Florida Assisted at community outreach events including WeDigBio at the Florida Museum of Natural History
2018 – Present	Girls Who Code, Eastside High School. Instructor for local high school club, which meets once a week.
2018	Class Guest, University of Missouri Guest in class to discuss NSF-REU opportunities with Makenzie Mabry.
2017 – 18	Botanical Society of the University of Central Florida Founding member and Vice President. Aims to create a community for students interested in plant science at our university. Helped organize a plant symposium during Fall 2017 and organized networking events.
2017 – 18	S.T.E.A.M, University of Central Florida. Collaborated with a digital design student to create a research poster to display at UCF and the Orlando Science Center.
2016 – 18	Student Undergraduate Research Council Member Devoted to exposing students to the different aspects of science and helping them pursue research positions at the University of Central Florida. Presented to classes and workshops on the benefits of being involved in undergraduate research
2015 – 17	Girls Exceling in Math and Science (GEMS), University of Central Florida. Served as a mentor for eight freshmen women majoring in biology through the GEMS (Girls EXCELing in Math and Science) program for two years.
2015 – 17	The Mad Scientist Research Society, University of Central Florida. Founding Member, Vice President (2015-16), and Director of Professional Development (2016-17). Aimed to create a community for undergraduate researchers at our university. Led the formation of the Seedlings mentoring program.

Professional Affiliations

2019 – Present	American Association for the Advancement of Science (AAAS)
2017 – Present	American Society of Plant Taxonomist (ASPT)
2017 – Present	American Society of Plant Biologist Southern Section (ASPB)
2016 – Present	Botanical Society of America (BSA)
2016 – Present	Sigma Xi Associate Member

Scientific Workshop Organization

2020	Botany 2020 - Time management and career planning: long-term, short-term, and daily goals. Co-organizer.
2020	SSB2020 - Using Digitized Herbarium Data in Research: Applications for Ecology, Phylogenetics, and Biogeography. Assistant instructor.
2018	ADBC Summit. iDigBio. Analytical Tools: Ecological Niche Modeling. Instructor.
2017 - 19	Botany 2017, 2018, 2019. iDigBio - Using Digitized Herbarium Data in Research: Applications for Ecology, Phylogenetics, and Biogeography. Assistant instructor.

Media Coverage

- 2019, Media coverage, Florida Museum of Natural History, University of Florida.
- 2018, Research spotlight video, Research Week 2018, University of Central Florida.
- 2017, Media coverage, University of Central Florida. “College of Science celebrates scholarships.”
- 2017, Media coverage, University of Central Florida. “Student researches Roses and Cabbage.”
- 2017, Media coverage, iDigBio. “Research experiences for undergraduates in digitized collections data.”
- 2017, Media coverage, University of Central Florida. “Student’s award-winning restoration research.”
- 2016, Media coverage, University of Central Florida. “Biology student receives golden opportunity.”

Mentoring

Undergraduate students (1):

2019 Trinity H. Depatie – Visiting from Florida Atlantic University.
Project: Phylogeography of the burrowing four-o’clock (*Okenia hypogaea*).