

Richard G.J. Hodel

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Education

December 2017	Ph.D., Botany Program, Department of Biology University of Florida, Gainesville, FL Supervisors: Dr. Douglas Soltis and Dr. Pamela Soltis
August 2011	M.S., Biology Appalachian State University, Boone, NC
May 2002	B.A., Music Amherst College, Amherst, MA

Relevant Experience

2020-present	Postdoctoral Research Fellow Department of Botany, National Museum of Natural History and Data Science Lab, Office of the Chief Information Officer, Smithsonian Institution, Washington, DC Supervisors: Dr. Rebecca Dikow and Dr. Jun Wen
2021-present	Data Carpentries Instructor Office of the Chief Information Officer, Smithsonian Institution
2018-2019	Postdoctoral Research Fellow Department of Ecology and Evolutionary Biology, University of Michigan, Ann Arbor, MI Supervisors: Dr. Lacey Knowles and Dr. Stephen Smith
2016-2017	Research Assistant <i>Amborella</i> Genome Project, University of Florida
2016-2017	Research Assistant iDigBio (Integrated Digitized Biocollections), University of Florida
2011-2017	Teaching Assistant University of Florida Biology Department
2009-2011	Teaching Assistant Appalachian State University Biology Department

Publications

(* = undergraduate co-author, # = graduate student mentee co-author)

27) 2023. Dikow R, DiPietro C, Trizna MG, Bredenbeck Corp H, Bursell MG, Ekwealor JTB, **Hodel RGJ**, Lopez N, Mattingly WJB, Munro J, Naples RM, Oubre C, Robarge D, Snyder S, Spillane JL, Tomerlin MJ, Villanueva LJ, White AE. Developing responsible AI practices at the Smithsonian Institution. *Research Ideas and Outcomes*, doi: 10.3897/rio.9.e113334

- 26) 2023. Mitchell N, McAssey EV, **Hodel RGJ**. Emerging methods in botanical DNA/RNA extraction. *Applications in Plant Sciences*, doi: 10.1002/aps3.11530
- 25) 2023. Wen J, Stull GW, **Hodel RGJ**. Collection-based integrative systematics in the new age of informatics and genomics. *Pleione*, in press.
- 24) 2023. Liu NG, Ma DK, Zhang Y, **Hodel RGJ**, Xie SY, Wang H, Jin ZT, Li FX, Jin SH, Zhao L, Xu C, Wei Y, Liu BB. Phylogenomic analyses support a new infrageneric classification of *Pourthiaea* (Maleae, Rosaceae) using multiple inference methods and extensive taxon sampling. *Taxon*, in press.
- 23) 2023. Jin ZT, **Hodel RGJ**, Ma D, Wang H, Ren C, Ge BJ, Jin SH, Chao X, Wu J, Liu B. Nightmare or delight: taxonomic circumscription meets reticulate evolution in the phylogenomic era. *Molecular Phylogenetics and Evolution*, doi: 10.1016/j.ympev.2023.107914
- 22) 2023. Nie ZL, **Hodel RGJ**, Ma ZY, Johnson G, Ren C, Meng Y, Ickert-Bond SM, Liu ZQ, Zimmer E, Wen J. Climate-influenced boreotropical survival and rampant introgressions explain the thriving of New World grapes in the north temperate zone. *Journal of Integrative Plant Biology*, doi: 10.1111/jipb.13466
- 21) 2023. Dikow R, Ekwealor JTB, Mattingly WJB, Trizna MG, Harmon E, Dikow T, Arias CF, **Hodel RGJ**, Spillane J, Tsuchiya MTN, Villanueva L, White AE, Bursell MG, Curry T, Inema C, Geronimo-Anctil K. Let the records show: attribution of scientific credit in Natural History Collections. *International Journal of Plant Sciences*, doi: 10.1086/724949
- 20) 2023. Su N, **Hodel RGJ**, Wang X, Wang JR, Xie SY, Gui CX, Zhang L, Chang ZY, Zhao L, Potter D, Wen J. Molecular phylogeny and inflorescence evolution of *Prunus* (Rosaceae) based on RAD-Seq and genome skimming analyses. *Plant Diversity*, doi: 10.1016/j.pld.2023.03.013
- 19) 2022. **Hodel RGJ**, Soltis DE, Soltis PS. Hindcast-validated species distribution models reveal future vulnerabilities of mangroves and salt marsh species. *Ecology and Evolution*, doi: 10.1002/ece3.9252
- 18) 2022. Walker JF, Smith SA, **Hodel RGJ**, Moyroud E. Concordance-based approaches for the inference of relationships and molecular rates with phylogenomic datasets. *Systematic Biology*, doi: 10.1093/sysbio/syab052
- 17) 2022. **Hodel RGJ**, Massatti R, Knowles LL. Hybrid enrichment of adaptive variation revealed by genotype-environment associations in montane sedges. *Molecular Ecology*, doi: 10.1111/mec.16502
- 16) 2022. **Hodel RGJ**, Zimmer EA, Liu BB, Wen J. Synthesis of nuclear and chloroplast data combined with network analyses supports the polyploid origin of the apple tribe and the hybrid origin of the Maleae–Gillenieae clade. *Frontiers in Plant Science*, doi: 10.3389/fpls.2021.820997
- 15) 2022. Liu BB, Ren C, Kwak M, **Hodel RGJ**, Xu C, He J, Zhou WB, Huang CH, Ma H, Qian GZ, Hong DY, Wen J. Phylogenomic analyses in the apple genus *Malus* s.l. reveal widespread hybridization and allopolyploidy driving the diversifications, with insights into the complex biogeographic history in the Northern Hemisphere. *Journal of Integrative Plant Biology*, doi: 10.1111/jipb.13246
- 14) 2021. Hu H, Scheben A, Verpaalen B, Tirnaz S, Bayer P, **Hodel RGJ**, Batley J, Soltis D, Soltis P, Edwards D. *Amborella* gene presence/absence variation is associated with abiotic stress responses that may contribute to environmental adaptation. *New Phytologist*, doi: 10.1111/nph.17658
- 13) 2021. Liu, BB, Ma ZY, Ren C, **Hodel RGJ**, Sun M, Liu XQ, Liu, GN, Hong DY, Zimmer E, Wen J. Capturing single-copy nuclear genes, organellar genomes, and nuclear ribosomal DNA from deep genome skimming data for plant phylogenetics: A case study in Vitaceae. *Journal of Systematics and Evolution*, doi: 10.1111/jse.12806

- 12) 2021. **Hodel RGJ**, Zimmer E, Wen J. A phylogenomic approach resolves the backbone of *Prunus* (Rosaceae) and identifies signals of hybridization and allopolyploidy. *Molecular Phylogenetics and Evolution*, doi: 10.1016/j.ympev.2021.107118
- 11) 2021. **Hodel RGJ**, Massatti R, Bishop SGD#, Knowles LL. Testing which axes of species differentiation underlie covariance of phylogeographic similarity among montane sedge species. *Evolution*, doi: 10.1111/evo.14159
- 10) 2020. Kou Y, Zhang L, Fan D, Cheng S, Li DZ, **Hodel RGJ**, Zhang YZ. Evolutionary history of a relict conifer *Pseudotaxus chienii* (Taxaceae) in southeast China during the late Neogene: old lineage, young populations. *Annals of Botany*, doi: 10.1093/aob/mcz153
- 9) 2019. One Thousand Plant Transcriptomes Initiative (author list includes **Hodel RGJ**). A phylogenomic view of evolutionary complexity in green plants. *Nature*, doi: 10.1038/s41586-019-1693-2
- 8) 2018. **Hodel RGJ**, Chandler LM#, Fahrenkrog AM, Kirst M, Gitzendanner MA, Soltis DE, and Soltis PS. Linking genome signatures of selection and adaptation in non-model plants: exploring potential and limitations in the angiosperm *Amborella*. *Current Opinion in Plant Biology*, doi: 10.1016/j.pbi.2018.04.003
- 7) 2018. **Hodel RGJ**, Knowles LL, Dunaway JF*, Payton AC, McDaniel SF, Soltis PS, and Soltis DE. Terrestrial species adapted to sea dispersal: differences in propagule dispersal of two Caribbean mangroves. *Molecular Ecology*, doi: 10.1111/mec.14894
- 6) 2017. **Hodel RGJ**, Chen S, Payton AC, McDaniel SF, Soltis PS, and Soltis DE. Adding loci improves phylogeographic resolution in red mangroves despite increased missing data: comparing microsatellites and RAD-Seq and investigating loci filtering. *Scientific Reports*, doi: 10.1038/s41598-017-16810-7
- 5) 2017. Fan DM, Zhixia S, Bo L, Yixuan K, **Hodel RGJ**, Zhirong J, and Zhang ZY. Dispersal corridors for plant species in the Poyang Lake Basin of southeast China identified by integration of phylogeographic and geospatial data. *Ecology and Evolution*, doi: 10.1002/ece3.2999
- 4) 2016. **Hodel RGJ**, Salcedo-Segovia CM, Landis JB, Crowl AA, Sun M, Liu X, Gitzendanner MA, Douglas NA, Germain-Aubrey CC, Chen S, Soltis DE, and Soltis PS. The report of my death was an exaggeration: a review for researchers using microsatellites in the 21st century. *Applications in Plant Sciences*, doi: 10.3732/apps.1600025
- 3) 2016. **Hodel RGJ**, Gitzendanner MA, Germain-Aubrey CC, Liu X, Crowl AA, Sun M, Landis JB, Salcedo-Segovia CM, Douglas NA, Chen S, Soltis DE, and Soltis PS. A new resource for the development of SSR markers: Millions of loci from a thousand plant transcriptomes. *Applications in Plant Sciences*, doi: 10.3732/apps.1600024
- 2) 2016. **Hodel RGJ**, Cortez MB*, Soltis PS, and Soltis DE. Comparative phylogeography of black mangroves (*Avicennia germinans*) and red mangroves (*Rhizophora mangle*) in Florida: Testing the maritime discontinuity in coastal plants. *American Journal of Botany*, doi: 10.3732/ajb.1500260
- 1) 2013. **Hodel RGJ** & Gonzales EB. Phylogeography of sea oats (*Uniola paniculata*), a dune-building coastal grass in southeastern North America. *Journal of Heredity*, doi: 10.1093/jhered/est035

Manuscripts Submitted

- 3) Xu C, Jin ZT, Wang H, Xie SY, Lin XH, **Hodel RGJ**, Zhang Y, Ma DK, Liu B, Liu GN, Jin SH, Zhao L, Ren C, Hong DY, Liu BB. Dense sampling of taxa and genomes untangles the phylogenetic backbone of a non-model plant lineage rife with hybridization and allopolyploidy. In review, *Systematic Biology*.

- 2) Jin ZT, Ma DK, Liu NG, **Hodel RGJ**, Jiang Y, Ge BJ, Liao S, Duan L, Ren C, Xu C, Wu J, Liu BB. Revolutionizing *Pyrus* phylogeny: Deep genome skimming-based inference coupled with paralogy analysis yields a robust phylogenetic backbone and an updated infrageneric classification of the pear genus (Maleae, Rosaceae). In review, *Taxon*.
- 1) **Hodel RGJ**, Winslow SK*, Liu BB, Johnson G, Trizna M, White AE, Dikow RB, Potter D, Zimmer EA, Wen J. A phylogenomic approach combined with morphological characters gleaned via machine learning uncovers the hybrid origin and biogeographic history of the plum genus. In review, *Systematic Biology*. Biorxiv doi: 10.1101/2023.09.13.557598

Funding Obtained

Total = \$461,260

<u>Smithsonian Institution NMNH CORE Research Grant</u> (\$70,000)	2023-2024
"The grape plant family as a window into exploring terrestrial plant biodiversity assembly across the tropical-temperate biome transition." (Hodel RGJ Co-PI with A. Talavera, G. Stull, E. Zimmer, J. Wen)	
<u>Smithsonian Institution Biodiversity Genomics Postdoctoral Fellowship</u> (\$123,000)	2022-2024
"Integrating genomic, phenomic, and environmental data of black cherry herbarium specimens to explore patterns and processes of species diversification." (PI: Hodel RGJ)	
<u>Smithsonian Institution Peter Buck Postdoctoral Fellowship</u> (\$191,050)	2020-2022
"Combining phylogenomics and collections-based deep learning technologies to resolve phylogeny, assess ancient polyploidy, and infer the biogeographic history of <i>Prunus</i> (Rosaceae)." (PI: Hodel RGJ)	
<u>Smithsonian Institution Scholarly Studies Grant</u> (\$36,000):	2020-2021
"Leveraging phylogenomic and biogeographic insight from <i>Prunus</i> (Rosaceae) to understand latitudinal diversity gradient and processes governing tropical-to-temperate transitions." (Hodel RGJ led writing of the grant; Co-PI with J. Wen and E. Zimmer)	
<u>NSF DDIG</u> (\$19,455):	2015-2017
"Comparative phylogeography of three co-distributed Neotropical mangrove species." (Hodel RGJ Co-PI with D. Soltis)	
<u>University of Florida</u> (\$15,150 total)	
Oliver Austin Dissertation Award (\$500)	2019
Graduate School Doctoral Dissertation Award (\$7,000)	2017
Grinter Fellowship (\$4,000)	2011-2014
Florida Museum of Natural History Lockhart Research Award (\$1,000)	2014
Carrie Lynn Yoder Scholarship for Plant Ecology and Conservation Research in Florida (\$500)	2013
Michael L. May Interdisciplinary Grant (\$1,000)	2013
Michael L. May Research Grant (\$300)	2013
Graduate Student Council Travel Grants (\$850)	2011-2013
<u>Society of Systematic Biologists</u> Software Symposium Travel Grant (\$500)	2016

<u>American Society of Plant Taxonomists</u>	
Travel Grants (\$1,005)	2012-2016
<u>Florida SeaGrant</u> Scholar Award (\$2,000)	2013
<u>Botanical Society of America</u>	
Genetics Section Award (\$1,000)	2013
Graduate Student Research Award (\$500)	2013
<u>Sigma Xi</u> Grant in Aid of Research (\$500)	2012
<u>Appalachian State University</u>	
Student Research Grants (\$1,100)	2009-2010

Awards and Certifications

- Data/Software Carpentries Certified Instructor 2021
- Science Communication Fellow 2019
 - University of Michigan Museum of Natural History
- DEI (diversity, equity, inclusion) course certificate 2019
 - University of Michigan Rackham Graduate School
- Oliver Austin Dissertation Award, Florida Museum of Natural History 2018
- University of Florida Department of Biology 2018
- Graduate Student Best Paper Award
- University of Florida Graduate School Doctoral Dissertation Award 2017
- University of Florida Department of Biology 2015
- Graduate Student Service Award

Invited Seminars

- “Synthesizing digitized extended specimen data for research, education, and outreach.” Cleveland Museum of Natural History, June 2023.
- “Big data in the details: connecting genotypes and phenotypes to understand plant biodiversity in extreme environments.” New York Botanical Garden, February 2023.
- “Phenotype × genotype × environment interactions across evolutionary scales.” Chicago Botanic Garden/Northwestern University Plant Conservation Program, January 2023.
- “Insights from phenotype × genotype × environment interactions in species-specific functional traits in non-model systems.” University of Michigan Department of Ecology and Evolutionary Biology, June 2022.
- “The roles of hybridization and genome doubling in the diversification of the apple tribe and cherry genus.” University of North Texas Department of Biological Sciences, May 2022.
- “The ancient hybrid origin of the apple tribe and recent adaptive hybridization in montane sedges.” Ball State University Department of Biology, January 2022.
- “Insights from phylogeographic discord in montane sedges and phylogenomic discord surrounding the origin of the apple tribe.” University of Zürich Institute for Systematic and Evolutionary Botany, October 2021.
- “Embracing discord in comparative phylogeography and phylogenomics.” University of Maryland Department of Ecology and Evolutionary Biology, November 2020.

- “Exponential data: a cause for optimism.” Smithsonian National Museum of Natural History Earth Optimism Lightning Talk, April 2020.
- “What can discordance tell us about phylogeographic concordance?” Duke University, December 2019.
- “Comparative phylogeography and conservation genomics of three mangrove species in the neotropics.” University of Florida Whitney Marine Laboratory, May 2017.
- “Conservation genetics and phylogeography of neotropical mangroves.” Stetson University, January 2016.
- “Comparative phylogeography of mangroves in the northern Caribbean.” El Verde Field Station (University of Puerto Rico), March 2014.

Oral Presentations at Scientific Meetings

- Hodel RGJ, Winslow SK, Weaver W, Dikow RB, Wen J. Linking phenotype, genotype, and environmental data from museum specimens in the *Prunus serotina* (black cherry) species complex. Botany 2023, Boise, ID.
- Hodel RGJ, Winslow SK, Liu BB, Johnson G, Trizna M, White AE, Dikow RB, Potter D, Zimmer EA, Wen J. A phylogenomic approach combined with morphological characters gleaned via machine learning uncovers the hybrid origin and biogeographic history of the plum genus. Evolution 2023, Albuquerque, NM.
- Hodel RGJ, Zimmer E, Liu BB, Johnson G, Potter D, Wen J. Dissecting the role of reticulate evolution in the diversification of *Prunus* (Rosaceae). Botany 2022, Anchorage, AK.
- Hodel RGJ, Zimmer E, Wen J. Wide hybridization followed by aneuploidy explains the origin of the apple tribe. Botany 2021, Virtual Meeting.
- Hodel RGJ, Zimmer E, Wen J. Nuclear phylogenomic analysis resolves the backbone of *Prunus* and identifies lineages impacted by frequent reticulate evolution. Botany 2020, Virtual Meeting.
- Hu H, Scheben A, Verpaalen B, Tirnaz S, Bayer PE, Hodel RGJ, Batley J, Soltis DE, Soltis PS, Edwards D. The *Amborella* pangenome suggests gene presence/absence variation is associated with environmental adaptation. Plant and Animal Genome 2020, San Diego, CA.
- Hodel RGJ, Bishop SGD, Massatti R, Knowles LL. Range size, not niche breadth, influences the phylogeographic patterns of montane sedges. Botany 2019, Tucson, AZ.
- Hodel RGJ, Walker JF, Knowles LL, Smith SA. Range size, not niche breadth, influences the phylogeographic patterns of montane sedges. Evolution 2019, Providence, RI.
- Hodel RGJ, Bishop SGD, Massatti R, Knowles LL. Assessing drivers of phylogeographic concordance in co-distributed sedge species pairs at two spatial scales. Botany 2018, Rochester, MN.
- Hodel RGJ, Chandler LM, Gitzendanner MA, Soltis PS, Soltis DE. Population genomic analyses of resequenced *Amborella trichopoda* individuals reveal chromosomal regions of selection and genetic diversity associated with local environmental conditions. International Botanical Congress 2017, Shenzhen, China.
- Hodel RGJ, Soltis PS, Soltis DE. Intraspecific genetic relationships of two coastal species (red and white mangroves) reveal broad phylogeographic patterns in the Caribbean. Evolution 2017, Portland, OR.
- Hodel RGJ, Soltis DE, Soltis PS. Projecting the potential future distributions of three mangrove species in Florida and beyond using ecological niche modeling. Evolution 2016, Austin, TX.

- Hodel RGJ, Chen SC, Soltis PS, Soltis DE. More than SNPs: mining chloroplast sequences from a RAD-Seq data set. Society for Systematic Biologists 2015, Ann Arbor, MI.
- Hodel RGJ, Chen SC, Soltis PS, Soltis DE. Microsatellites vs. RAD-Seq: A comparison of markers for population genetic inference in red mangroves (*Rhizophora mangle*). Evolution 2014, Raleigh, NC.
- Hodel RGJ, Chen SC, Soltis PS, Soltis DE. Microsatellites vs. RAD-Seq: A comparison of markers for population genetic inference in red mangroves (*Rhizophora mangle*). Botany 2014, Boise, ID.
- Hodel RGJ, Soltis PS & Soltis DE. Phylogeography and conservation genetics of two Neotropical mangrove species. Botany 2013, New Orleans, LA.
- Hodel RGJ, Cortez MB, Soltis PS & Soltis DE. Phylogeography and population genetics of three Florida mangrove species. Poster presentation, International Biogeography Society 2013, Miami, FL.
- Hodel RGJ, Soltis PS & Soltis DE. Phylogeography and conservation genetics of black mangroves (*Avicennia germinans*) in Florida. Evolution 2013, Snowbird, UT.
- Hodel RGJ & Gonzales E. Phylogeography of sea oats (*Uniola paniculata*), an ecologically important coastal dune grass in the southeastern United States. Botany 2012, Columbus, OH.

Professional Service

Conference workshop planning and organizing

- Lead organizer of workshop presented at Botany 2023, Botany 2022, and Botany 2021 conferences (“Using deep learning with digitized herbarium specimen image data”). Planned workshop to train members of the plant science community to use machine learning algorithms to analyze digitized herbarium sheet data. See GitHub repository: https://github.com/richiehodel/Botany2023_DLworkshop
- Workshop instructor, Botany 2016 conference (“Crash course in niche modeling”). Helped organize iDigBio workshop at Botany 2016, which trained other members of the plant science community in data acquisition, georeferencing, data processing in R, and niche modeling in MAXENT.

Participation in peer review

- Special Issue Editor: *Applications in Plant Sciences*, "Emerging methods in botanical DNA/RNA extraction", published June 2023.
- Associate Editor: *Applications in Plant Sciences*.
- Reviewer: *Nature Plants*, *Molecular Ecology*, *Journal of Systematics and Evolution*, *Biological Journal of the Linnean Society*, *Scientific Reports*, *New Phytologist*, *PLoS ONE*, *American Journal of Botany*

Departmental/institutional service

- National Museum of Natural History Genomics Task Force, 2021-2022. Worked with a team of researchers at the museum to design strategies to improve interdepartmental communication, with a focus on seminars, collaboration, and community.
- FLMNH 5K/10K fun run founder and organizer, 2012-2017. Organized an annual fun run for several labs in the Florida Museum of Natural History.

- Judge for UF URAP (Undergraduate Research Assistantship Program) presentations; scored oral presentations and posters created by undergraduates in the UF Biology Department.
- University of Florida Department of Biology Graduate Student Association (BGSA) Vice President, 2015-2016.
- University of Florida BGSA Fundraising and Public Relations Committee Representative, 2014-2015.

Outreach / Public Service

2023:

- Career panelist for Natural History Research Experience summer interns
Served as panelist to discuss graduate school, and academic and non-academic career options with undergraduates.

2022:

- National Museum of Natural History cherry week hybridization expert
Coinciding with the National Cherry Blossom Festival, I worked with a reporter on a story detailing the hybrid origin of the Yoshino cherries in the D.C. tidal basin.

2021:

- Presentation to Natural History Research Experience summer interns
“Genomic data reveal the complex evolutionary origin of the apple tribe”
- National Museum of Natural History social media takeover for cherry week
Coinciding with the National Cherry Blossom Festival, I shared photos and data via the NMNH social media accounts to illustrate the science behind when cherry trees blossom.

2020:

- After School Botany Course via Q?rius at National Museum of Natural History
Served as co-instructor for weekly Botany course for high school students in January-February 2020. Instructed students on microscopy, biogeographic analyses, and genetic analyses.

2019-2018:

- Michigan Museum of Natural History
Shared my research with the public in several “Meet a Scientist Saturdays”

2017-2015:

- Florida Museum of Natural History
Earth Day Programming co-organizer

2014:

- High School Teacher Training
Through UF’s CPET (center for precollegiate education and training), presented techniques for integrating natural history collections into science at the high school level.

Forensic Consulting

In collaboration with Dr. Matt Gitzendanner, Dr. Jacob Landis, and detectives from the Temple Terrace (FL) Police Department, used plant identification and DNA sequencing to positively

identify a sample as white mangrove (*Laguncularia racemosa*) that led to an arrest, and the filing of murder charges by the Temple Terrace police in an investigation ([see news article](#)). Served as an expert witness in the subsequent trial.

Outreach Videos

Created to share the important ecosystem services associated with mangroves (<https://www.cifor.org/thinkforests/video/the-value-of-mangrove-forests/>)

Graduate Students Mentored

Sasha Bishop (University of Michigan; currently PhD candidate)
 Luke Chandler (University of Florida; currently PhD candidate)
 Jeprianto Manurung (University of Leipzig; currently postdoctoral researcher)

Undergraduate Students Mentored

Sundre Winslow (American University)	2022-2023
Camilia Johari (University of Michigan)	2019
Wade Chen (University of Florida)	2015-2016
Jordan Dunaway (University of Florida)	2015
Veronica Moïño (University of Florida)	2015
Maria Cortez (University of Florida)	2013-2015
Rennette Zavala (University of Florida)	2014
Morgan Trzyna (University of Florida)	2014
Emily Becks (University of Florida)	2014

Additional Information: job-related training and skills

Field Work

Organized and led field expeditions to collect plant tissue for genomic analyses:

2023: South Carolina, Georgia, Alabama, Florida, Tennessee, North Carolina

2015: Antigua, Aruba, Cayman Islands, Costa Rica, Grenada, Jamaica

2014 - 2010: Puerto Rico, Bahamas, Florida, Louisiana

Lab Skills

Proficient in, and have trained others in the following techniques:

- DNA and RNA extraction
- Microsatellite genotyping
- Sanger sequencing
- Preparing DNA libraries:
 - RAD-Seq
 - Hyb-Seq
 - Whole Genome Sequencing
- Preparing RNA libraries: RNA-Seq
- Flow Cytometry

Bioinformatic Skills

Proficient in, and have trained/mentored others in the following techniques:

- Artificial Intelligence (AI) and Machine Learning (ML) inference using biological data (e.g., images, acoustic data) using PyTorch and FastAI
- R, Python, Command line, Jupyter notebooks, GitHub
- *de novo* and reference-based transcriptome and whole genome assembly
- *de novo* and reference-based RAD-Seq and Hyb-Seq assembly
- Phylogenomic/transcriptomic inference methods
- Phylogeographic/population genetic data analysis pipelines
- Simulating data for phylogenomic/phylogeographic analyses

References

1) Dr. Jun Wen

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4) Dr. Pamela S. Soltis*

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* co-PhD advisors; will write a joint letter

Last updated November 23, 2023