

# Richard Hodel

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## Education

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University of Florida, Gainesville, FL 2017  
Ph.D., Botany Program, Department of Biology

Appalachian State University, Boone, NC 2011  
M.S., Biology

Amherst College, Amherst, MA 2002  
B.A., Music

## Experience

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Postdoctoral Research Fellow 2018-present  
Department of Ecology and Evolutionary Biology, University of Michigan, Ann Arbor, MI

Research Assistant 2016-2017  
*Amborella* Genome Project, University of Florida, Gainesville, FL

Research Assistant 2016-2017  
iDigBio (Integrated Digitized Biocollections), University of Florida, Gainesville, FL

Teaching Assistant 2011-2017  
University of Florida Biology Department, Gainesville, FL  
Designed curriculum/syllabus and taught inaugural online version of introductory biology lab for science majors through the UF Online initiative.

Teaching Assistant 2009-2011  
Appalachian State Biology Department, Boone, NC

## Publications

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(\* = undergraduate co-author, # = invited review)

6) Hodel RGJ, Chen S, Payton AC, McDaniel SF, Soltis PS, and Soltis DE. 2017. Adding loci improves phylogeographic resolution in red mangroves despite increased missing data: comparing microsatellites and RAD-Seq and investigating loci filtering. *Scientific Reports*, 7, 17598, doi:10.1038/s41598-017-16810-7.

*Awarded University of Florida Department of Biology Best Paper Award, 2018.*

- 5) Fan DM, Zhixia S, Bo L, Yixuan K, **Hodel RGJ**, Zhirong J, and Zhang ZY. 2017. 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) **#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. 2016. The report of my death was an exaggeration: a review for researchers using microsatellites in the 21st century. *Applications in Plant Sciences*, 4, 1600025.
- 3) **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. 2016. A new resource for the development of SSR markers: Millions of loci from a thousand plant transcriptomes. *Applications in Plant Sciences*, 4, 1600024.
- 2) **Hodel RGJ**, Cortez MB\*, Soltis PS, and Soltis DE. 2016. 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*, 103, 730-739.
- 1) **Hodel RGJ** & Gonzales EB. 2013. Phylogeography of sea oats (*Uniola paniculata*), a dune-building coastal grass in southeastern North America. *Journal of Heredity*, 104, 656-665.

## **Publications submitted**

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One Thousand Plant Transcriptomes Initiative (author list includes **Hodel RGJ**). 2018. A phylogenomic view of evolutionary complexity in green plants. In review, *Nature*.

## **Awards and Fellowships**

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University of Florida Department of Biology Graduate Student Best Paper Award	2018
University of Florida Graduate School Doctoral Dissertation Award	2017
University of Florida Department of Biology Graduate Student Service Award	2015
Grinter Fellowship, University of Florida	2011-2014

## **Invited Seminars**

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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.

## Research Funding

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NSF DDIG (Co-PI with Dr. Doug Soltis): Comparative phylogeography of three co-distributed Neotropical mangrove species (\$19,455)	2015-2017
American Society of Plant Taxonomists Travel Grant (\$335)	2016
Society of Systematic Biologists Software Symposium Travel Grant (\$500)	2016
Florida Museum of Natural History Lockhart Fellowship (\$1,000)	2014
Florida SeaGrant Scholar (\$2,000)	2013
Botanical Society of America Genetics Section Award (\$1,000)	2013
Botanical Society of America Graduate Student Research Award (\$500)	2013
University of Florida Michael L. May Interdisciplinary Grant (\$1,000)	2013
University of Florida Carrie Lynn Yoder Scholarship for Plant Ecology and Conservation Research in Florida (\$500)	2013
University of Florida Michael L. May Research Grant (\$300)	2013
University of Florida Graduate Student Council Travel Grant (\$350)	2013
American Society of Plant Taxonomists Travel Grant (\$335)	2013
Sigma Xi Grant in Aid of Research (\$500)	2012
University of Florida Graduate Student Council Travel Grant (\$250)	2012
American Society of Plant Taxonomists Travel Grant (\$335)	2012
University of Florida Graduate Student Council Travel Grant (\$250)	2011
Appalachian State University Office of Student Research:	
Student Research Grant (\$250)	2010
Student Research Grant (\$250)	2009
Cratis D. Williams Graduate School Research Grant (\$300)	2009
Graduate Student Senate Research Grant (\$300)	2009

## Presentations at Scientific Meetings

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- 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. Oral presentation, 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. Oral presentation, 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. Oral presentation, Evolution 2016, Austin, TX.
- Hodel RGJ, Chen SC, Soltis PS, Soltis DE. More than SNPs: mining chloroplast sequences from a RAD-Seq data set. Oral presentation, 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*). Oral presentation, 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*). Oral presentation, Botany 2014, Boise, ID.
- Hodel RGJ, Soltis PS & Soltis DE. Phylogeography and conservation genetics of two Neotropical mangrove species. Oral presentation, 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. Oral presentation, 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. Oral presentation, Botany 2012, Columbus, OH.

## Professional Service

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- Member, Reviewing Editor Board, *Applications in Plant Sciences*, elected term 2016-2018.
- Reviewer, *Molecular Ecology*
- Reviewer, *Journal of Systematics and Evolution*
- Reviewer, *Biological Journal of the Linnean Society*
- Reviewer, *Scientific Reports*
- Reviewer, *New Phytologist*
- Reviewer, *PLOS ONE*

Helped organize and served as instructor for the iDigBio workshop (“Crash course in niche modeling”) at Botany 2016, which trained other members of the plant science community in data acquisition, georeferencing, data cleaning and processing in R, and niche modeling in MAXENT.

Soltis Lab/Cellinese Lab 5K/10K fun run founder and organizer, 2012-2017. Organized an annual fun run for several labs in the Florida Museum of Natural History.

Organizer, biweekly pickup basketball games for staff/students of FLMNH at Broward Outdoor Center on the University of Florida Campus.

Recruited and hosted 2015 University of Florida Department of Biology graduate invited speaker.

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.

University of Florida BGSA Secretary/Treasurer, 2012-2013.

University of Florida BGSA Zoocial Committee Member, 2011-2012.

## **Outreach / Public Service**

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### **High School Teacher Training**

Through UF’s CPET (center for precollegiate education and training), presented about integrating natural history collections into science at the high school level, and trained them to use software that uses georeferenced natural history collection specimens.

### **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 capital murder charges by the Temple Terrace police in an investigation ([see news article](#))

### **Judge for UF URAP (Undergraduate Research Assistantship Program) presentations**

Scored oral presentations and posters created by undergraduates in the UF Biology Department.

### **Public Lecture/Community Discussion**

While conducting field work, led public discussion about mangroves and coastal conservation at the Long Island Museum, Long Island, Bahamas

## Outreach Video

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

## Undergraduates Mentored

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Wade Chen (University of Florida Undergraduate Scholar Program (USP) Award 2015-2016)

Maria Cortez (visiting undergraduate from UNICAMP in Campinas, Brazil, worked 40 hours a week under my supervision in 2012-2013, received M.S. in Biology in September 2016)

Jordan Dunaway (University of Florida USP Award 2014-2015; currently in medical school)

Veronica Moíño (University of Florida USP Award 2014-2015; currently in medical school)

Emily Becks (currently a graduate student in horticultural sciences)

## Professional Societies

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American Society of Plant Taxonomists  
Botanical Society of America  
Society for the Study of Evolution  
Society of Systematic Biologists

## References

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Distinguished Professor  
Florida Museum of Natural History and Department of Biology  
Gainesville, FL 32611  
Phone: (352) 273-1963  
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Dr. Pamela S. Soltis  
Distinguished Professor and Curator  
Florida Museum of Natural History  
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Gainesville, FL 32611  
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