

# Uma J Nagendra

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## EDUCATION

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|------|--|---------------------------|
| 2017 | Ph.D. in Plant Biology / Advisor: Chris Peterson   | The University of Georgia |
|      | <i>"Disturbed relationships: Plant-Soil interactions following tornado damage in Southern Appalachian forests"</i> |                           |
| 2009 | BA in Biology and Comparative Literature   | Swarthmore College        |

## PROFESSIONAL APPOINTMENTS

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|----------------------------|---|
| 2017 – present             | <i>Conservation Operations Manager and Ecologist</i> / Supervisor Lei Wann<br>Limahuli Garden and Preserve, National Tropical Botanical Garden, Hā‘ena, HI  |
|                            | <ul style="list-style-type: none"><li>• Manages all conservation and restoration programs in 1,000 acre preserve, including rare plant collection and preservation, endangered seabird preservation, invasive animal and plant control, and biocultural restoration following natural disturbance</li><li>• Supervises two teams of full-time staff members in remote fieldwork, accessed by helicopter or by foot</li><li>• Mentors and lead graduate students, interns, and volunteer groups</li><li>• Cultivates a safe and cooperative working environment in challenging terrain</li><li>• Designs and implements monitoring programs for vegetation change, predator control, post-disturbance succession, and riparian diversity</li><li>• Analyzes monitoring program results using ArcGIS and R; shares findings with local and regional conservation partners</li><li>• Collaborates with local and regional organizations for shared biological and cultural conservation goals</li><li>• Maintains budgeting and reporting for multiple state and federal conservation contracts</li><li>• Pursues private, state, and federal grant and contract funding sources</li></ul> |
| 2011 – 2017                | <i>Graduate Research and Teaching Assistant</i> / Supervisor Chris Peterson<br>Department of Plant Biology, The University of Georgia, Athens, GA   |
|                            | <ul style="list-style-type: none"><li>• Topic: tree seedling and soil microbial responses to tornado damage</li><li>• Organized, funded, and managed concurrent experimental and observational studies</li><li>• Analyzed original data using ArcGIS, R, JMP, and SAS</li><li>• Supervised and mentored 11 undergraduate researchers in 4 years</li><li>• Designed and co-taught a fully online university course on Georgia Natural History</li><li>• Assistant-taught university courses in Plant Taxonomy, Community Ecology, Soil Ecology, and Georgia Natural History</li></ul>  |
| 2010 and 2011<br>(summers) | <i>Wetland Delineation Vegetation Technician</i> / Supervisor Sarah Runck<br>The Center for Environmental Management of Military Lands, Fairbanks, AK   |
|                            | <ul style="list-style-type: none"><li>• Mapped wetland-upland boundaries on military-owned lands in Alaska using handheld GPS and satellite imagery</li><li>• Identified woody and herbaceous vegetation to species level using dichotomous keys</li><li>• Characterized boreal ecosystems according to National Vegetation Classification system</li><li>• Described soils by color and texture</li><li>• Determined wetland characterization of vegetation, soils, and hydrology using Army Corps of Engineers protocol</li></ul>   |
| 2010                       | <i>Luquillo Forest Dynamics Plot Technician</i> / Supervisor Chris Nytech<br>Luquillo LTER, Río Piedras, Puerto Rico  |

- Conducted census of tropical tree seedlings in 1x2 m and 1x1 m plots with anthropogenic and natural disturbance history
  - Identified tropical forest seedlings to species level
  - Collected environmental data such as canopy openness and soil moisture for each plot
  - Participates in efficient data management procedures
- 2009      *The Corridor Project Research Technician* / Supervisor Lars Brudvig  
The Savannah River Site, Aiken, SC
- Monitored plots containing native plants in longleaf pine savannah restoration project
  - Measured native plant survival, growth, and productivity in fragmented landscape
- 2005 – 2009      *Plant Records Assistant* / Supervisor Rhoda Maurer  
The Scott Arboretum of Swarthmore College, Swarthmore PA
- Conducted inventory for all woody plants in the 350+ acre arboretum
  - Mapped and measured individual plants for virtual visitors map

## RESEARCH ACTIVITIES AND EXPERIENCE

### Funding and Awards

- 2020      NRCS Conservation Innovation Grant, \$85K over 3 years for revegetating challenging areas using drone technology
- 2018      Fish and Wildlife Service Partners Program, \$67K over 3 years for rare plant collection and ex-situ habitat restoration
- 2015      Fish and Wildlife Service Partners Program, \$67K over 3 years for riparian habitat restoration  
\**National Science Foundation Community Ecology Section*, \$10,000 grant to increase diversity at the Southeastern Ecology and Evolution Conference (\*Principal Investigator: Dr. Lisa Donovan. Uma contributed 50% of proposal, but cannot be listed as co-PI due to granting agency restrictions)
- 2013      *NSF Graduate Research Fellowship*, \$32,000 stipend and \$12,000 research funds annually for 3 years  
*Haines Family Field Botany Award*, \$915 over 12 months
- 2012      *Plant Biology Graduate Student Association Research Assistance Award*, \$250 over 12 months
- 2011      *Presidential Fellowship*, University of Georgia Graduate School
- 2008      Robert '53 and Ellin Grossman Scholar
- 2006      HHMI Summer Research Fellowship for Undergraduates

### Peer-reviewed Publications (\* denotes undergraduate co-author)

**Nagendra UJ**, \*Seesanthar V, \*McCoy MC and Peterson CJ. **In revision.** Seedling survival near same-genus trees in a mapped Piedmont forest dynamics plot.

Coyle DR, **Nagendra UJ**, Taylor MK, Campbell JH, Cunard CE, Joslin AH, Mundepi A, Phillips CA, Unks RR, and Callahan MA. 2017. Soil fauna responses to natural disturbances, invasive species, and global climate change: Current state of the science and a call to action. *Soil Biology and Biochemistry*, 110, 116-133.

**Nagendra UJ** and Peterson CJ. 2016. Plant-soil feedbacks differ in intact and tornado-damaged areas of the Southern Appalachian Mountains, USA. *Plant and Soil*, 402, 103-116.

### Additional Publications for General Public

Letman J, Lorence D, **Nagendra UJ**, Ragone D, Ronsted N, Walsh S, Wood K. 2020. How NTBG contributes to plant health. *National Tropical Botanical Garden's The Bulletin*, 36(2), 6-12

**Nagendra, U.**, Wood, K. & Nyberg, B. 2020. *Cyrtandra wainihaensis*. *The IUCN Red List of Threatened Species* 2020: e.T91179486A91179655. <https://dx.doi.org/10.2305/IUCN.UK.2020-2.RLTS.T91179486A91179655.en>. Downloaded on 28 September 2021.

**Nagendra, U.**, Nyberg, B. & Wood, K. 2020. *Euphorbia eleanoriae*. *The IUCN Red List of Threatened Species* 2020: e.T44131A83799613. <https://dx.doi.org/10.2305/IUCN.UK.2020-2.RLTS.T44131A83799613.en>. Downloaded on 28 September 2021.

**Nagendra, U.**, Nyberg, B. & Wood, K. 2020. *Euphorbia halemanui*. *The IUCN Red List of Threatened Species* 2020: e.T44132A83799761. <https://dx.doi.org/10.2305/IUCN.UK.2020-2.RLTS.T44132A83799761.en>. Downloaded on 28 September 2021.

Wood, K., Nyberg, B. & **Nagendra, U.** 2020. *Labordia lydgatei*. *The IUCN Red List of Threatened Species* 2020: e.T30935A83802336. <https://dx.doi.org/10.2305/IUCN.UK.2020-2.RLTS.T30935A83802336.en>. Downloaded on 28 September 2021.

**Nagendra, U.**, Nyberg, B. & Wood, K. 2020. *Melicope paniculata*. *The IUCN Red List of Threatened Species* 2020: e.T33675A83803153. <https://dx.doi.org/10.2305/IUCN.UK.2020-2.RLTS.T33675A83803153.en>. Downloaded on 28 September 2021.

Wood, K., Nyberg, B. & **Nagendra, U.** 2020. *Melicope quadrangularis*. *The IUCN Red List of Threatened Species* 2020: e.T33559A83803234. <https://dx.doi.org/10.2305/IUCN.UK.2020-2.RLTS.T33559A83803234.en>. Downloaded on 28 September 2021.

**Nagendra UJ.** 2018. In the Face of Record Flooding, Limahuli is Resilient in the Rain. *National Tropical Botanical Garden's The Bulletin*, 34(2).

### **Selected Presentations**

Wann L and **Nagendra U.** Biocultural conservation in practice in Limahuli Valley. Oral talk presented at: World Conservation Congress; 2021 September; Marseilles, France and remote.

Mo'okini-Oliveira P, **Nagendra UJ**, Winter K. Shining a Light on 'O'opu: A Year in Review of the Hā'ena 'O'opu Restoration Project. Oral talk presented at: The Hawaii Conservation Conference, 2021 September; remote.

**Nagendra UJ**, Edmonds M, Nagle C, Guss J, and Dewalt Z, Driskill S, Rothe J, Raine AF. Many hands together: a multi-pronged approach to endangered seabird habitat preservation in Upper Limahuli Preserve, Kaua'i. Oral talk presented at: The Hawaii Conservation Conference, 2020 September; remote.

**Nagendra UJ**, Edmonds M, Nagle C, Guss J, and Dewalt Z. Evaluating new technology for rodent management in Upper Limahuli Preserve Oral talk presented at: The Hawaii Conservation Conference, 2020 September; remote.

Nagendra UJ, Champlin K. After the Flood: Building Resilience in Limahuli Valley. Oral talk presented at: Earth Matters public lecture series; 2019 September 17; Lihue, HI

**Nagendra UJ**, Edmonds M, Nagle C, Guss J, and Dewalt Z. 10 years of conservation in Upper Limahuli Preserve. **Poster session** presented at: The Hawaii Conservation Conference; 2019 July 10; Honolulu, HI

**Nagendra UJ**, Nagle C, and Winter K. Using an automatic trapping grid to reduce rodents on Kaua'i: First five years. **Poster session** presented at: The Hawaii Conservation Conference; 2018 July 24-26; Honolulu, HI

**Nagendra UJ.** Landslide observations and restoration plans for Limahuli Preserve, Kaua'i. Oral talk presented at: Hawaii Ecosystems Meeting; 2018 June 25-26; Hilo, HI

**Nagendra UJ.** Disturbed relationships: Plant-soil interactions following tornado damage in Southern Appalachian forests. **Seminar** presented at: The University of Georgia Department of Plant Biology; 2017 March 31; Athens, GA

**Nagendra UJ** and Peterson CJ. Seedling survival near conspecific trees in a mapped Piedmont forest dynamics plot. **Oral talk** presented at: The Ecological Society of America Annual Meeting; 2016 August 8-12; Ft Lauderdale, FL.

**Nagendra UJ** and Peterson CJ. Plant-soil feedbacks in tornado-damaged Southern Appalachian forests: field and greenhouse studies. **Oral talk** presented at: The Ecological Society of America Annual Meeting; 2015 August 9-14; Baltimore, MD.

**Nagendra UJ** and Peterson, CJ. Resilient earth: Rapid soil recovery following tornado disturbance, regardless of disturbance severity. **Oral talk** presented at: IUFRO 2014 – Wind and Trees International Conference; 2014 August 3-8; Sao Pedro, Brazil.

**Nagendra UJ** and Peterson, CJ. Not so hot: Rapid recovery of soil temperature and respiration following tornado disturbance, regardless of disturbance severity. **Poster session** presented at: American Geophysical Union Annual Meeting; 2013 Dec 9-13; San Francisco, CA.

**Nagendra UJ** and Peterson, CJ. Shifts in plant-soil feedbacks after severe wind disturbance for two southern Appalachian tree species. **Oral talk** presented at: Southeastern Ecology and Evolution Conference; 2013 March 2; Orlando, FL.

**Nagendra UJ** and Peterson CJ. Potential alterations to plant-soil feedbacks following wind disturbance. **Poster session** presented at: Ecological Society of America Annual Meeting; 2012 Aug 5-10; Portland, OR.

## TEACHING AND MENTORING

### Teaching Recognition

2017	<i>Graduate Certificate in University Teaching</i> , University of Georgia Graduate School
2016	<i>Outstanding Graduate Teaching Assistant</i> , University of Georgia Graduate School
2015	<i>Teaching Portfolio Certificate</i> , University of Georgia Graduate School

### Teaching and Mentoring Experience

**2017 – present** / *Mentor: multiple internship and service learning programs at Limabuli Garden and Preserve*

- Co-leads high school, undergraduate and graduate interns in a variety of programs centered around biocultural conservation, ecological restoration, and horticulture
- Programs range from one-week to three months to one year in length
- Cultivates a culture of safety, curiosity, and cross-cultural exchange in a challenging field environment
- Guides interns through independent projects in stream monitoring, vegetation monitoring, and collections management
- Many service members and interns end their terms by presenting at a regional conference

**Summer 2021** / *Co-instructor: Botanical Conservation Collections - from Discovery to Restoration*

- Instructed undergraduate and graduate students for one week of remote summer elective course
- Guided students through case-studies and discussions on biocultural restoration and rare plant reintroductions

**Spring 2017** / *Teaching Assistant: Plant Taxonomy Lab*

- Instructed undergraduate and graduate students in weekly 2 hour hands-on laboratory assignments
- Guided students through skill-based labs in plant collection, identification, and dissection
- Designed and implemented assessments (quizzes and exams) focusing on skill application

**Fall 2014 and 2015** / *Co-developer: Natural History of Georgia Plants*

- Re-designed existing course for an online format
- Developed interactive online lessons and project-based assessments
- Handled day-to-day communications, tech support, and weekly assessments
- Presented innovative natural history lesson plans at local and regional conferences

**Summer 2013 – Fall 2015** / *Co-instructor: Independent Research for Undergraduates*

- Mentors 1-3 undergraduates per semester in independent ecological research (11 total)
- Guides students on project design, data collection, data analysis, and project writeup
- Coaches students to present project results at regional conference or symposium

**Summer 2015** / *Writing Workshop Assistant*

- Provided bi-weekly feedback to 5 international post-docs and research professionals
- Guided writers to clearly explain their research ideas, findings, and methods
- Co-led bi-weekly group workshop sessions

**Spring 2015** / *Teaching Assistant: Soil Biology and Ecology*

- Managed research methodology-based lab sections for graduate student
- Guided students in team-based research projects in a Georgia Piedmont controlled burn plot
- Co-led bi-weekly paper discussions

**Spring 2015** / *Mentor: Women in Science (WiSci UGA)*

- Met monthly with undergraduate mentee to discuss career goals and research plans

**Spring 2014** / *Teaching Assistant: Plant Population and Community Ecology*

- Co-led weekly paper discussions with graduate students
- Addressed student concerns during field and computer-based lab sessions

### **Teaching presentations and Guest Lectures**

Peterson CJ and **Nagendra UJ**. Technological, philosophical and design tips and resources for an online environmental issues course. **Invited presentation** for the Franklin Faculty Teacher Speaking Series. 2016 October 26; Athens, GA.

**Nagendra UJ** and Peterson CJ. Guided Nature Trails: Teaching natural history online with project-based curriculum. **Poster session** presented at: Southeastern Ecology and Evolution Conference; 2015 March 13-15; Athens, GA.

Creativity in Plant Ecology. **Guest lecture** presented in: First Year Odyssey course “Creativity in the Humanities and Sciences.” September 2015

Plant-soil feedbacks and community patterns. **Guest lecture** presented in: Graduate course “Plant Population and Community Ecology.” April 2014

### **SCIENCE ENGAGEMENT ACTIVITIES AND EXPERIENCE**

#### **Science Engagement Recognition**

- 2016 *Ecological Society of America Reporting Fellow*, PLOS Ecology Community, \$500
- 2015 *Best Graduate Student Poster Presentation*, Southeastern Ecology and Evolution Conference
- 2014 *Grand Prize and Biology Category Winner*, AAAS International Dance-Your-PhD Contest, \$1,000  
*Best Graduate Student Presentation*, Plant Biology 3 Minute Thesis Competition

#### **Science Engagement Experience**

**Feb 2016 – 2017 / Organizer:** ContraSynthesis

- Developed five [Appalachian-style contra dances](#) that illustrate key concepts in photosynthesis
- Presented at *Athens Folk Music and Dance Society's* monthly contra dance, UGA's *Interdisciplinary Research Conference*, and the *Ecological Society of America*.

**May 2015 – 2016 / Programming board, Graphic designer:** Athens Science Café

- Assists in planning and organizing monthly public science discussions (Science Cafés)
- Designs eye-catching and informative [posters](#) to advertise events
- Spearheaded science storytelling event in collaboration with local storytelling series for April 2015

**Jan 2015 – 2016 / Writer and Editor:** Athens Science Observer

- Writes periodic [blog posts](#) on science, ecology, and recent research for a general audience
- Critiques undergraduate and graduate student blogs for clarity, structure, and tone
- Creates [webcomics](#) to combine creative visuals, storytelling, and scientific concepts

**Aug 2016 / Ecological Society of America Reporting Fellow:** PLOS Ecology Community

- Covered new research presented at ESA's annual meeting [blog posts](#)
- Curated a live twitter feed to share conference events in real time over social media

**June 2015 – Sept 2015 / Director, Choreographer, Performer:** AAAS' International Dance Your PhD Contest

- Collaborated with aerialists and scientists to present research through dance for [award-winning video](#)
- Edited [final video](#) that competed with 21 submissions from researchers across the world

**March 2015 and 2016 / Choreographer, Performer, Panelist:** Atlanta Science Festival

- Choreographed and performed two science-infused [aerial dances](#) for the Atlanta Science Festival
- Answered questions on ecology, natural disasters, and chemistry on a post-performance panel

**March 2014 – March 2015 / Co-chair, organizing committee,** Southeastern Ecology and Evolution Conference

- Led organizing committee for regional conference geared towards early-career ecologists
- Recruited high-profile plenary speaker (Dr. Nalini Nadkarni) for plenary on public engagement

- Co-wrote a successful NSF proposal (\$10,000) to fund scholarships for underrepresented students
- Increased overall conference participation by 50%, from 150 in previous years to 225

**March 2015 / Co-Organizer:** “Science Communication Workshop,” SE Ecology and Evolution Conference

- Led 20 undergraduate and graduate students in 45-minute workshop on science communication
- Used hands-on activities to practice science communication, open dialogue and share ideas
- Guided workshop participants towards broader science communication resources

**Jan 2012 – May 2015 / Instructor:** Hilsman Middle School AgriScience Outreach

- Taught weekly hands-on plant science lessons in local middle school during Spring semester
- Designed original lesson plans: Biomes of the World, Biodiversity, Intro to Soils

**Jan 2011 – March 2011 / Program Assistant:** Teaching Responsible Earth Education (T.R.E.E.)

- Arranged meals and hospitality for 5<sup>th</sup> and 7<sup>th</sup> grade student groups
- Assisted in preparing materials for 3- to 5-day immersive environmental education
- Supervised student groups during indoor and outdoor experiential learning activities

**Sept 2006 – Dec 2008 / Writing Associate:** Swarthmore College Writing Center

- Led peer conferences with introductory Biology students to improve lab reports

### **Science Engagement Presentations**

**Nagendra UJ.** Toe-tapping Science: A folk dance for photosynthesis. **Workshop** led at: Ecological Society of America; 2015 August 11; Ft Lauderdale, FL.

**Nagendra, UJ.** Disturbed relationships: How seedlings and soils survive after tornadoes. **Public presentation** at: Student Science Series sponsored by Athens Science Café; 2015 December 1; Athens, GA.

**Nagendra, UJ. Invited guest speaker** for: Spotlight on the Arts Festival 4’33” competition; 2015 November 5; Athens, GA.

**Nagendra, UJ.** Creativity in Plant Ecology. **Invited guest lecture** for: First Year Odyssey course “Creativity in the Humanities and Sciences”; 2015 September 30; Athens, GA.

**Nagendra UJ.** Shifting Soil, Changing Winds: Dancing through the PhD. **Oral talk** presented at: DanScience; 2015 Aug 22; Brisbane, Australia

**Nagendra UJ.** Tornadoes and trapeze: an experience in communicating science through aerial dance. **Invited talk** presented at: HighWire Academic Publishing Conference; 2015 April 12-14; Palo Alto, CA.

### **PROFESSIONAL SOCIETIES**

Ecological Society of America

American Association for the Advancement of Science

Public Communication of Science and Technology Network

### **COMMUNITY SERVICE AND OUTREACH**

2014- Volunteer, Athens For Everyone

2010-2011 T.R.E.E. Sunship Earth and Sunship III volunteer, New Orleans, LA

2008 Botany Spring Break Intern: National Museum of Natural History, Washington D.C.

2005-2011 Habitat restoration: Athens, GA; Swarthmore, PA; New Orleans, LA