

Renata Poulton Kamakura, Ph.D.

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EDUCATION

University of Chicago

B.S. in Biological Sciences

Minor in Environmental and Urban Studies

Chicago, IL, USA

2018

Duke University

M.S. in Ecology

Ph.D. in Ecology

Durham, NC, USA

2024

SKILLS AND COMPETENCIES

Languages: English (native) | Spanish (advanced) | French (intermediate)

Programs: R (advanced) | Python (intermediate) | ArcGIS Pro (advanced) | Linux (intermediate) | Google Earth Engine (intermediate) | Microsoft Office Suite (advanced) | InDesign (intermediate) | Covidence (advanced) | Weather Research & Forecasting Model (intermediate)

WORK EXPERIENCE

University of British Columbia

Killam Postdoctoral Research Fellow

Vancouver, BC, Canada

August 2025 - Present

- Conduct research on the drivers of urban forest structure and health in collaboration with Dr. Lorien Nesbitt and the Urban Natures Lab

National Academies Gulf Research Program

Science Policy Fellow

College Station and Houston, TX, USA

August 2024 - July 2025

- Managed project for the Gulf of Mexico Coastal Ocean Observing System (GCOOS) to understand the impacts of marine heatwaves on nearshore coastal and terrestrial systems, especially cities.
- Modeled coastal weather in Houston/Galveston Bay region to compare marine heatwave and non-marine heatwave weather patterns using the Weather Research & Forecasting model.
- Supported development of future marine heatwave alert tool in collaboration with researchers from University of South Alabama/Dauphin Island Sea lab and GCOOS by getting feedback from potential user groups and identifying partners for future beta testing and dissemination.
- Co-wrote a GCOOS framework for coastal climate services to direct future GCOOS product development.
- Facilitated collaborations with other regional ocean observing associations on marine heatwave research projects
- Wrote reports on the impacts of marine heatwaves on coastal and marine species, ecosystems, and industries in the Gulf and Caribbean, available on [the GCOOS website](#).

Duke University

Bass Connections Graduate Assistant

Durham, NC, USA

Jul 2022 – Jun 2023

- Co-designed the year-long syllabus and prepared a lesson plan for lectures on introductory Environmental Justice and Community Engagement for participating students.
- Facilitated work sessions with a team designing a stakeholder engagement tool, including soliciting and incorporating feedback and guidance from NC Environmental Justice leaders in a Community Advisory Board.
- Provided written and oral feedback on student's class performance and suggested final grades.

Columbia Land Trust*Intern*

Vancouver, WA, USA

Feb 2019 – Jul 2019

- Assisted in grant preparation and submission.
- Provided data and feedback to Conservation Leads writing 4-year conservation plans for regions of interest.
- Researched income sources and research partnerships for the development of the East Cascades Oak Partnership.
- Supported Engagement Program Manager Rahul Devaskar and local community groups to increase engagement with currently underrepresented groups in environmental work and land conservation.
- Advocated for conservation and specific land trust projects in meetings with local legislators.
- Produced restoration GIS maps to analyze survey data on western gray squirrel, and support fundraising, land protection, stewardship, and planning goals for the land trust.

Dorena Genetic Resource Center | U.S. Forest Service*Conservation Land Management Intern - Chicago Botanic Garden*

Cottage Grove, OR, USA

Jun 2018 – Feb 2019

- Collected, extracted, cleaned, and tested seeds for future propagation and restoration projects.
- Maintained several species of terrestrial plants in the nursery for future restoration projects and white pine blister rust research (pruned, fertilized, transplanted, and applied pesticides).
- Analyzed data on Pacific Madrone (*Arbutus menziesii*) from different locations across the western U.S. to study the impacts of local adaptation on growth rate, mortality, and phenology, resulting in a peer-reviewed manuscript.

Chicago Botanic Garden*REU Student*

Chicago, IL, USA

Jun – Aug 2017

- Developed a project under Adrienne Ernst studying the effects of propagule pressure on invasive species establishment rate in tallgrass prairies.
 - Turned into senior honors thesis, co-advised by Dr. Cathy Pfister: “Effects of Nonlocal Species Propagule Pressure and Phylogenetic Diversity on Nonlocal Species Growth in Newly Restored Tallgrass Prairies.”
- Collected dry biomass estimates and identified seedlings to species in experimental prairie restoration.
- Mentored a high school student on a project studying invasive species relatedness to natives affected their establishment success.
- Presented research at the REU student symposium and at the Ecological Society of America meeting, where I received the 1st place award for student posters in the Restoration Ecology section.

Mammal Department | Field Museum*Student Researcher*

Chicago, IL, USA

Sep 2016 – Jun 2017

- Analyzed relationships between weather patterns and incidents of poaching or other damaging human land use in Tsavo National Park in Kenya under the guidance of Dr. Bruce Patterson.

Brosi Lab | Rocky Mountain Biological Laboratory*Student Researcher*

Gothic, CO, USA

Jun – Aug 2016

- Developed an independent project, under the guidance of Dr. Berry Brosi, to investigate the within-season effects of changing abundance on niche breadth.
- Identified local plant species and collected thousands of insects for later identification in rocky mountain terrain in a team of researchers.
- Authored a paper on the results of said field work and presented it to researchers at an RMBL symposium.

Freedman Lab | University of Chicago's Grossman Neuroscience Institute*Student Researcher*

Chicago, IL, USA

Mar 2015 – May 2016

- Worked with Krithika Moran under Dr. Dave Freedman on research pertaining to learning and memory with primates both through programming in R, Python, and Matlab.

- Developed scripts in r, python, and matlab for a project studying primates' learning and memory under the guidance of Krithika Moran and Dr. Dave Freedman.
- Collected and formatted images for experimental trials.
- Prepared animals for learning and memory tests.

Neuroscience Lab | Brain and Mind Research Institute and Weill Cornell Medical College New York, NY, USA
Student Researcher Jun – Sep 2015

- Investigated the effects of chronic stress on stress receptor density and dendritic size in female rat CA1 (hippocampus) under Dr. Teresa Milner.
- Co-authored a paper published in 2018 in the Journal *Neuroscience*, led by Helena McAlinn.
- Presented at the Annual Biomedical Research Conference for Minority Students; won a poster presentation award.

Nematology Lab | International Center of Insect Physiology and Ecology Nairobi, Kenya
Intern May – July 2014

- Assisted in the design and performance of three sets of experiments to test nematode reactions to different plant volatiles working under Dr. Baldwin Torto and Dr. Lucy Kananu Murungi.

ACTIVITIES, COMMUNITY SERVICE, AND LEADERSHIP

TreesDurham Durham, NC, USA
Board Member Feb 2023 – Feb 2024

- Support the staff of TreesDurham in reaching their strategic goals, especially around equity and expanding tree canopy cover access across the city of Durham.
- Participate in tree management and tree planting events alongside city partners.

Unearthing Duke Forest Working Group - Franklin Humanities Institute Durham, NC, USA
Co-convener Dec 2019 – Feb 2024

- Co-led, with 2 other graduate students, a group researching feminist and decolonial lenses to environmental science studies, epistemologies, and methodologies.
- Hosted events to share this project and the work of feminist and decolonial scholars with environmental scientists to increase awareness and dialogue.

Ecology Seminar Committee Durham, NC, USA
Co-chair Jan 2020 – May 2022

- Managed the departmental ecology seminar, coordinating speaker nominations and voting, managing speaker schedule (~27 in an academic year), and facilitating speaker travel and meetings.
- Facilitated the adaptation of seminar to an online format by hosting online speaker meetings, managing a course website, ensuring speakers had access to compensation, and securing a more diverse speaker pool.

Nicholas School Black and Latine Club Durham, NC, USA
President Jun 2020 – May 2022

- Organized departmental events celebrating Black and Latinx students, staff, faculty, and culture.
- Advocated for Black and Latinx student needs with administrators.
- Worked with the Black Graduate and Professional Students Association and other student organizations to support Black graduate and professional students across campus.

Sunrise Movement Durham Hub Durham, NC, USA
Hub Co-Coordinator Aug 2020 – Jan 2022
Hub Member Sep 2019 – Aug 2020

- Facilitated coordination across teams to work on campaigns, actions, rallies, and skill building.
- Supported team leads in developing their own organizing and management skills like meeting facilitation, 1:1 conversations, consensus building, and conflict resolution.
- Developed partnerships with organizations in Durham (especially on economic justice and racial justice) to facilitate collaborative campaigns.
- Coordinated with other hubs across the state and country for collaborative actions (e.g. around state-wide elections, COVID-relief, police reform, and environmental justice).

University of Chicago's Housing and Residence Life

Chicago, IL, USA

Resident Assistant

Sep 2016 – Jun 2018

- Developed weekly trips and activities to build dorm cohesion and culture.
- Addressed emergency situations at all hours of the day and night, ensuring that residents get the necessary medical and general care, whether physical or psychological.
- Provided conflict resolution and support for residents as they worked in a challenging academic environment.

Neuroscience Club | University of Chicago

Chicago, IL, USA

Member

Nov 2014 – Jun 2016

- Devised and taught 2 sets of 1-hour lesson plans for a neuroscience course geared towards high school students.
- Taught other NEURO members about recent advances in neuroscience and helped plan education events for other fellow college students.

Seeds of Justice | University of Chicago

Chicago, IL, USA

Member

Nov 2014 – Jun 2015

- Researched social-justice issues and discussed their relevance in the context of Chicago, and the broader U.S.
- Visited various social justice-centered organizations to learn about their work and the challenges they face.
- Led a group of 9 students in a 4-hour service project on the Martin Luther King Jr. Day of Service at Featherfist, an organization that works to provide housing to marginalized or underprivileged groups in Chicago.

PEER-REVIEWED PUBLICATIONS

Poulton Kamakura, R. Schueller, C., Wofford, B., Kazanzki, C.E., Hallett, R., Hauer, R., Holmes, R.V. (2025)

Socio-ecological context and tree care for street and park trees in urban and suburban areas. *Urban Forestry & Urban Greening*. 114, 129121 <https://doi.org/10.1016/j.ufug.2025.129121>

Poulton Kamakura, R. Bai, J., Sheel, V., Katti, M (2024). Biodiversity is not a luxury: unpacking wealth and power to accommodate the complexity of urban biodiversity. *Ecosphere*. 15(11), e70049.

<https://doi.org/10.1002/ecs2.70049>

Ernst, A., Barak, R., Glasenhardt, MC., Kramer, A., Larkin, D., Marx, H., **Poulton Kamakura, R.**, Hipp, A. (2023)

Dominant species establishment may influence invasion resistance more than phylogenetic or functional diversity. *Journal of Applied Ecology*. 00, 1-13. <https://doi.org/10.1111/1365-2664.14534>

Mazid, S., Waters, E. M., Lopez-Lee, C., **Poulton Kamakura, R.**, Rubin, B. R., Levin, E. R., McEwen, B. S., Milner, T. A. (2023). Both nuclear and membrane estrogen receptor alpha impact the expression of estrogen receptors and plasticity markers in the mouse hypothalamus and hippocampus. *Biology*, 12(4), 632;

<https://doi.org/10.3390/biology12040632>

Tang, B., **Poulton Kamakura, R.**, Barnett, D., Clark, J. (2023) Learning from monitoring networks: Few-large versus many-small (FLvMS) plots and multi-scale analysis. *Frontiers in Ecology and Evolution*, 11.

<https://www.frontiersin.org/articles/10.3389/fevo.2023.1114569/full>

Dyson, K., Dawas, E., **Poulton Kamakura, R.**, Alberti, M., Fuentes, T.L. (2023). Say where you sample: Increasing site selection transparency in urban ecology. *Ecosphere*. 14(3): e4466.

<https://doi-org.proxy.lib.duke.edu/10.1002/ecs2.4466>

- Journé, V., Andrus, R., Aravena, M.-C., Ascoli, D., Berretti, R., Berveiller, D., ... **Poulton-Kamakura, R.**, ... Clark, J. (2022) Globally, tree fecundity exceeds productivity gradients. *Ecology Letters*, 25, 1471– 1482. <https://doi.org/10.1111/ele.14012>
- Qiu, T., Andrus, R., Aravena, MC. ... **Poulton-Kamakura, R.**, ... Clark, J. (2022) Limits to reproduction and seed size-number trade-offs that shape forest dominance and future recovery. *Nat Commun* 13, 2381. <https://doi.org/10.1038/s41467-022-30037-9>
- Sharma, S., Andrus, R., Bergeron, Y., Bogdziewicz, M., Bragg, D. C., Brockway, D. ... **Poulton Kamakura, R.**, ... Clark, J. (2022) North American tree migration paced by climate in the West, lagging in the East. *Proceedings of the National Academy of Sciences (PNAS)*, 119(3) e2116691118. <https://doi.org/10.1073/pnas.2116691118>
- Tong, Q., Aavena Acuna, M., Andrus, R., Davide, A., Bergeron, Y., Berretti, R., Bogdziewica, M., Boivin, T., ... **Poulton Kamakura, R.**, ... Clark, J. (2021). Is there tree senescence? The fecundity evidence. *Proceedings of the National Academy of Sciences*, 118(34), e2106130118. <https://doi.org/10.1073/pnas.2106130118>
- Poulton Kamakura, R.**, DeWald, L. E., Snieszko, R. A., Elliott, M., & Chastagner, G. A. (2021). Using differences in abiotic factors between seed origin and common garden sites to predict performance of Pacific madrone (*Arbutus menziesii* Pursh). *Forest Ecology and Management*, 497, 119487. <https://doi.org/https://doi.org/10.1016/j.foreco.2021.119487>
- Clark, J.S., Andrus, R. Melaine A., Bergeson, Y., Bogdziewicz, M. , Bragg, D. C. , Brockway, D., Cleavitt, N.L., ... **Poulton Kamakura, R.**, ... Zlotin, R. (2021) Continent-wide tree fecundity driven by indirect climate effects. *Nature Communications*, 12(1), 1242. <https://doi.org/10.1038/s41467-020-20836-3>
- McAlinn, H. R., Reich, B., Contoreggi, N. H., **Poulton Kamakura, R.**, Dyer, A. G., McEwen, B. S., ... Milner, T. A. (2018). Sex Differences in the Subcellular Distribution of Corticotropin-Releasing Factor Receptor 1 in the Rat Hippocampus following Chronic Immobilization Stress. *Neuroscience*, 383, 98–113. <https://doi.org/https://doi.org/10.1016/j.neuroscience.2018.05.007>

OTHER PUBLICATIONS

- Poulton Kamakura, R.** & Simoniello, C. (2025). Marine Heatwave Impact Reports/Informes Breves Sobre los Impactos de las Olas de Calor Marinas. White Papers. *Gulf of America Coastal Ocean Observing System*. <https://gcoos.org/marine-heatwaves/> (ENG) <https://gcoos.org/olas-de-calor/> (ESP)
- Cerpa, C., & **Poulton Kamakura, R.** (2025). Designing Living Things: Human Relationships with Nature. *Carolina Planning Journal*, 50, 14–21.

GUEST LECTURES

- Poulton Kamakura, R.** (2024) The Impact of Maintenance on Tree Health in Urban Environments. Guest Lecture. EN790 Urban Forestry & Greenspace Management. Nicholas School of the Environment, Duke University. January 24,. Durham, NC.
- Poulton Kamakura, R.** (2023) Urban Biodiversity and the Luxury Effect. Guest Lecture. Biodiversity Science. Biology Department, Duke University. November 28. Durham, NC.
- Poulton Kamakura, R.** (2023) What do we do about inequalities in tree canopy cover? Guest Lecture. John Hope Franklin Young Scholars Program. September 9. Durham, NC.
- Poulton Kamakura, R** & Conner, R (2022). Duke, Durham, and Urban Greenspaces. Guest Lecture. ENV245 - The Theory and Practice of Sustainability. Feb 22. Durham, NC.

POSTERS, ORAL PRESENTATIONS, AND INVITED TALKS

- Poulton Kamakura, R.** (2025) Marine heatwaves in the Gulf: understanding impacts in marine and coastal regions. Invited Lecture. Louisiana Universities Marine Consortium (LUMCON) summer seminar series. June 6. Cocodrie, LA.
- Poulton Kamakura, R.** Simoniello, C., Rao, D.R., Howson, M., Dzwonkowski, B., Qi, X., & Brenner, J. (2025) Marine Heatwave Impacts in the Caribbean, Gulf, and Southeastern U.S. Poster. Gulf Resilience Community of Practice Meeting. June 4. Houma, LA.
- Poulton Kamakura, R.** (2024). Structural Inequality, Construction, and Street Trees in Durham, NC. Oral Presentation. Duke University Ecology at 100 Symposium. April 18. Durham, NC.
- Poulton Kamakura, R.** (2024). Urban Tree Health Across Space and Time. Invited Lecture. Berry College Environmental Science and Studies Lecture Series. Mar. 28. Rome, GA.
- Poulton Kamakura, R.** (2024). Mass Surveillance, Big Data, and The Desire for Knowledge. Oral Presentation. University Scholars Program Spring Symposium: Autonomy & Autonomation: A Dialogue Between Us and Our Tools. Mar. 2. Durham, NC.
- Poulton Kamakura, R.** (2023) Urban Street Tree Stewardship and Health in Socio-ecological Systems. Invited Lecture. E&E Seminar. Biology Department, University of Illinois at Chicago. November 7. Chicago, IL.
- Poulton Kamakura, R.** (2023) Urban Street Tree Stewardship and Health in Socio-ecological Systems. Invited Lecture. Morton Arboretum Tree Talk. November 6. Chicago, IL.
- Poulton Kamakura, R.,** Kazanski, C., Clark, J.S., Huang, E., Nunes, A., Orozco, K., Rollinson, C.R., Johnson, M.L.L., & Holmes, R.V. (2023). Tree Health Depends on Local Site Characteristics and Patterns of Urban Displacement in Chicago's West Side. Oral Presentation. Ecological Society of America. August 10. Portland, OR.
- Poulton Kamakura, R.,** Bai, J., Sheel, V., & Katti, M. (2023). Biodiversity is not a Luxury: unpacking wealth and power to complicate our understanding of urban biodiversity. Oral Presentation. Ecological Society of America. August 10. Portland, OR.
- Poulton Kamakura, R.** (2023). Tree health in Durham: The importance of tree age, species, local growing conditions, and what they mean for our urban forest. Invited Lecture. TreesDurham Monthly Member Meeting. Apr 25. Durham, NC
- Poulton Kamakura, R.** (2022). Limits of Current Imagination and Solutions We Cannot Envision. Oral Presentation. University Scholars Program Spring Symposium: After the Storm Passes. Feb. 26. Durham, NC.
- Poulton Kamakura, R.** DeWald, L. E., Snieszko, R., Elliott, M., (2020). Potential Local Adaptation to Environmental Variables in Pacific Madrone: Patterns in Growth and Mortality at Common Garden Sites. Oral Presentation. Arbutus ARME Meeting. Nov. 10. Online.
- DeWald, L. E., **Poulton Kamakura, R.,** Snieszko, R. A., Elliott, M., Chastagner, G. A (2020). Decline in Pacific Madrone: Assessing Health & Future Persistence Using Common Garden Sentinel Tests. Poster. US Forest Service Forest Health Monitoring Workshop. Feb. 27. Raleigh, NC.
- Poulton Kamakura, R.,** Ernst, A. R. Pfister, C., Kramer, A. (2018). Propagule Pressure and the Establishment Success of Nonlocal Species. Poster. Ecological Society of America. Aug. 8. New Orleans, LA. *1st Place Student Poster Award in Restoration Ecology Section.*
- Poulton Kamakura, R.,** Ernst, A. R. Pfister, C., Kramer, A. (2018). The Effects of Nonlocal Species Propagule Pressure and Phylogenetic Diversity on Nonlocal Species Growth in Newly Restored Tallgrass Prairies. Poster. University of Chicago Rowley Honors Symposium. May 25. Chicago, IL.
- Poulton Kamakura, R.,** Ernst, A. R. Kramer, A. (2017). Propagule Pressure and the Establishment Success of Problem Species. Poster. Chicago Botanic Garden REU Symposium. Aug. 17. Chicago, IL.
- Poulton Kamakura, R.** Brosi, B. (2016). Mutualistic Networks Over Time: The Effects of Changing Floral Abundances on Plant-Pollinator Interactions. Oral Presentation. Rocky Mountain Biological Laboratory REU Symposium. Aug. 15. Gothic, CO.
- Poulton Kamakura, R.,** Milner, T. (2015). Chronic Stress Affects the Morphology and Corticotropin-Releasing Factor 1 Receptor Density in Dendrites in Female Rat Hippocampus. Poster. Annual Biomedical Research Conference for Minority Students. Nov. 13. Seattle, WA. *Neuroscience Poster Presentation Award.*

MENTORING AND SUPERVISING

Duke University and The Nature Conservancy – Urban Tree Health Project Aug 2021 – May 2024

- Past - students: Rivca Chaver (Aug 2021 – Feb 2022), Justin X. Smith (Jan 2022 – Aug 2022), Lucie Ciccone (NCSU student, May – Dec 2022), Chloe Schueller (Aug 2021 – May 2023), Lorenzo Maggio Laquidara (Duke Kunshan student, May 2022 – May 2024)
- Past - technicians: Emily Bolander (June - August 2023), Jon Ley (June - August 2023)

Duke University Scholars Program Mentees August 2019 – May 2024

- Ceci de la Guardia (August 2019 - December 2023), Yuna Oh (August 2019 - May 2024)

Morton Arboretum – Research Technician Fellows– Urban Tree Health Project May 2021 – Aug 2022

- Evelinn Sanchez, Kamil Orozco (May – Aug 2021)
- Andrea Nunes, Elizabeth Huang (May – Aug 2022)

Chicago Botanic Garden Jul 2017 – Mar 2018

- Raymond Diaz: Science Fair project: Invasive Species – Do Relatives Help or Hinder? Silver Award Certificate.

FELLOWSHIPS AND AWARDS

Fellowship/Award	Institution	Dates
Killam Postdoctoral Research Fellowship	University of British Columbia	Aug 2025 – Present
Science Policy Fellowship	U.S. National Academies	Aug 2024 – July 2025
Center for Tree Science Fellowship	Morton Arboretum	Feb 2023 – Dec 2024
NatureNet Science Fellowship	The Nature Conservancy	May 2021 – May 2024
Graduate Research Fellowship Program	National Science Foundation	Mar 2021 – Aug 2024
Zone IV Fellowship in Urban Forestry	Garden Club of America	Mar – Dec 2021
Graduate Student Policy Award	Ecological Society of America	Mar – Oct 2020
Graduate & Professional "Willing and Abele" Student of the Year Graduate Student of the Year	Duke's Mary Lou Williams Center for Black Culture	May 2020
University Scholar	Duke University	Aug 2019 – Aug 2024
General Honors	University of Chicago	Jun 2018
Honors in Biological Sciences	University of Chicago	Jun 2018
Student Marshall	University of Chicago	Jun 2017, May 2018
Phi Beta Kappa	University of Chicago	Apr 2017

WORKSHOPS

Workshop	Institution	Location	Dates
Tree Risk Assessment Qualification (TRAQ)	International Society of Arboriculture	Houston, TX, USA	July 2025
Course Design Series	Texas A&M University	Online	November 2024
ACES Training Series	Texas A&M University High Performance Research Computing	Online	October 2024
Digital Accessibility Series	Texas A&M University	Online	Sept – Oct 2024
ComSciCon - Science Communication	ComSciCon Triangle	Durham, NC, USA	Jan – Feb 2024
Preventing Sexual Harassment and Assault in Field Settings	Field Futures/Duke University	Durham, NC, USA	Mar 2023
Introduction to Qualitative Research	Duke University Social Science Research Institute	Durham, NC, USA	Dec 2022
Decolonizing Ecology	Duke University	Durham, NC, USA	Dec 2022
TreeKeeper Training	City of Durham Cooperative Extension	Durham, NC, USA	Sep – Oct 2022
Deep Organizing Corps	Sunrise Movement	Online	Sep 2020 – Mar 2021
Racial Equity Learning Arc	Duke University	Online	Oct 2020 – Mar 2021
Transformative Justice Training Series	Time to Spring Up	Online	Oct – Dec 2020
Graduate Leaders in Socio-Environmental Synthesis Workshop	National Socio-Environmental Synthesis Center	Annapolis, MD, USA	Jan 2020
P.R.I.D.E. Training (on pronouns and how to support LGBTQ+ students)	Duke University Center for Sexual and Gender Diversity	Durham, NC, USA	Nov 2019