

Lucien Fitzpatrick

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PERSONAL STATEMENT

I am a research assistant interested in applying traditional forest ecology techniques to urban ecosystems, with a focus on treating human decision making as an ecological driver acting on urban forests and urban trees. I am interested in how climate change and human decision-making function and interact as drivers of change in the ecosystem composition, functioning, and services of urban forests and trees. I am looking for a graduate program to grow my understanding of urban ecosystems and urban ecology to expand my current research experience with traditional forest ecology into urban environments.

EDUCATION

Rutgers, The State University of New Jersey 2023 – Present
Oberlin College, Oberlin, OH 2014 – 2018
Stamps Scholar, John Frederick Oberlin Scholar, Grade Point Average: 3.57
Northside College Prep High School, Chicago, IL. 2010 – 2014
Grade Point Average: 3.71

RESEARCH EXPERIENCE

Graduate Assistant September 2023 – Present

Rutgers, The State University of New Jersey

- Performed a systematic literature review on the role of vegetation structural complexity on ecosystem functioning
- Assisted on collection of field work, maintenance of research forests, and volunteer plantings

Research Assistant I October 2019 – August 2023

Morton Arboretum Center for Tree Science, Lisle, IL

- Developed a Bayesian hierarchical phenology model in R and JAGS that used phenology observations of common species across space and rare species observations in a botanic garden to infer rare species phenology timing in native habitats. Lead authored a paper about this research.
- Used terrestrial ecosystem models and R to analyze interactions of climate change, forest structure, and management legacies on forest resilience.
- Established, organized, and managed a xylarium collection while performing dendrochronological analysis on the collection.
- Participated in regular outreach events with a wide variety of audiences. Created a public-facing web portal informing potential visitors of budburst timing of botanic oak species.

Field Technician May 2019 – August 2019

Penn State Deer-Forest Study, Coudersport, PA

- Inventoried forest plots for identification, size class, and abundance of over 150+ overstory and understory plants to assess impact of deer browse on forest regeneration
- Hiked miles in remote forests with heavy equipment and inclement weather using GPS, compass and maps.
- Established and monumented plots including building fenced enclosures.

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Field Technician

July 2018 – May 2019

Project Quercus, Woodstock, IL

- Identified species, mapped their location, and took DBH of tree species in forested areas.
- Noted and photographed growth abnormalities

Laboratory Intern

January 2018

Morton Arboretum Center for Tree Science, Lisle, IL

- Created a digital tree ring database using Tellervo while researching and synthesizing information to establish a physical xylarium collection.
- Sanded, dated, cross-dated, measured, photographed, and archived cross-sections.

Field/Lab Technician

May - August 2017

Bee Informed Partnership, College Park, MD

- Used microscope and hemocytometer to identify and count presence of parasites and mites
- Traveled to colony sites and collected bees for health assessments

PUBLICATIONS AND PRESENTATIONS

Paper - **L. Fitzpatrick**, P.J. Giambuzzi, A. Spreitzer, B. Reidy, S.M. Still, C.R. Rollinson, “Improving phenology predictions for sparsely observed species through fusion of botanical collections and citizen-science”, *Climate Change Ecology*. 2 (2021) 100032.

Paper was featured in USA-National Phenology Network’s 2021 annual report.

Paper- R. Dybzinski, E. Segal, M. L. McCormack, C. R. Rollinson, R. Mascarenhas, P. Giambuzzi, J. Rivera, **L. Fitzpatrick**, C. Wiggins, M Midgley “Calculating nitrogen uptake rates in forests: which components can be omitted, simplified, or taken from trait databases and which must be measured in situ?”

Presentation - **L. Fitzpatrick**, C.R. Rollinson, A.R. Desai, M.C. Dietze, “Analysis of the interactions of climate change and management on forest biomass using the Ecosystem Demography 2.0 model”, *Ecological Society of America*, Virtual Conference, August 2021

Presentation - **L. Fitzpatrick**, C.R. Rollinson, A.R. Desai, B.A, Murphy, K. Dreisilker, M. Midgley, “Management Legacies Interactions with Forest Structure Influence Forest Biomass Responses to Climatic Increases in Atmospheric Water Vapor Demand.” *American Geophysical Union*, Chicago, IL, December 2022.

Presentation - **L. Fitzpatrick**, M. F. J. Aronson, “A Review on how Structural Diversity Increases Ecosystem Functioning.” *Urban Biodiversity and Design Conference* July 2024

Paper - **L. Fitzpatrick**, C.R. Rollinson, A.R. Desai, B.A, Murphy, K. Dreisilker, M. Midgley, “Management Legacies Interactions with Forest Structure Influence Forest Biomass Responses to Climatic Increases in Atmospheric Water Vapor Demand.” In revision at *Ecological Applications*