MAGGIE CHURCH

mgchurch247@gmail.com | https://github.com/maggiechurch741
Fort Collins, CO, 80524 | (330) 319-4799

EDUCATION

2023 - 2027 (exp) **Ph.D. in Ecology**
Colorado State University, Fort Collins, CO
Emphasis in wetland landscape ecology and geospatial modeling
Advisor: Dr. Jessica O'Connell

2013 - 2017 **Bachelor of Science in Economics-Statistics**
University of Pittsburgh, Pittsburgh, PA
Emphasis in econometrics
Minor: French Language and Literature

AREAS OF RESEARCH INTEREST

Remote Sensing, Landscape Ecology, Data Science, Vegetation Monitoring

PROFESSIONAL EXPERIENCE

2023 - present **Doctoral Research**
Colorado State University, Fort Collins, CO
Developing a real-time, scalable map of wetlands in the Prairie Pothole Region, using publicly available multispectral and SAR imagery in a random forest framework. Conducting in Google Earth Engine, in collaboration with end-users at Ducks Unlimited.
PI: Dr. Jessica O'Connell, Department of Ecosystem Science and Sustainability

2022 - 2023 **Research Assistant**
Colorado State University, Fort Collins, CO
Developed research methods for dating tree rings after conducting a literature review. Trained two undergraduate lab technicians in implementing these research methods effectively. Research was funded by the U.S Forest Service, to understand how thinning under the Healthy Forest Initiative affects regeneration in montane forests across the Intermountain West.
PI: Dr. Jason Sibold, Department of Anthropology and Geography

2023 **Field Lead**
Colorado State University, Fort Collins, CO
Measured structural attributes of trees, soil burn severity, and seedling regeneration in accordance with existing lab protocol, in disturbed subalpine areas of Rocky Mountain National Park. Responsible for training five undergraduate technicians, daily logistics, backcountry navigation, data management and quality control.
PI: Dr. Jason Sibold, Department of Anthropology and Geography

2019 - 2022 **Data Analyst**
National Center for Missing and Exploited Children, Alexandria, V.A.
Created Tableau dashboards to inform internal workflows and policy recommendations, and responded to over 250 requests for analysis and reporting needs as the sole analyst for NCMEC's extensive database of child sexual abuse material reports.

2017 - 2019 **Senior Research Assistant**
Federal Reserve Board of Governors, Washington, D.C.
Provided analysis-ready data, created exploratory visualizations, and automated data pipelines for research related to determinants of U.S. financial stability, using R and STATA.

2016 - 2017 **Undergraduate Research**
University of Pittsburgh, Pittsburgh, P.A.
Conducted a difference-in-differences analysis on the impacts of economic stimulation efforts in declining steel towns on surrounding home values, using local property tax data in Stata and funds awarded from the Haines Research Grant.
PI: Dr. Werner Troesken and Dr. Randall Walsh, Department of Economics

TEACHING AND MENTORING EXPERIENCE

Spring 2025 **Workshop Facilitator**
Colorado State University
Organized and facilitated a workshop called "Reproducible Research in R." Topics included tidy coding and GitHub.

Spring 2025 **Research Advisor**
Colorado State University
Led an undergraduate student through a research project, studying monarch occurrence against different milkweed species. This led to a poster presentation and an oral presentation at two on-campus conferences.

Fall 2024 **Teaching Assistant | Sustainable Watersheds**
Colorado State University, Department of Ecosystem Science and Sustainability
Assisted a course of 150 upper level undergraduate students. Redesigned assignments and final project, and reviewed homework during lecture.

Spring 2024 **Teaching Assistant | Mapping, Cartography, and Spatial Thinking**
Colorado State University, Department of Anthropology and Geography
Assisted a course of 20 upper level undergraduate students. Facilitated labs, redesigned laboratory material, and occasionally lectured. Software used: ArcGIS Pro and Google Earth Pro.

Fall 2023 **Teaching Assistant | Physical Geography**

Colorado State University, Department of Anthropology and Geography
Assisted a course of 40 lower level undergraduate students. Facilitated labs, redesigned laboratory material, and graded assignments.

2018 - 2019 **Lecturer | Data Analytics in R**
Howard University, Department of Economics
Heavily involved in the implementation of the "Data Analytics in R" course for three semesters. Contributed to the syllabus redesign, created homeworks, lectured on the tidyverse package, and maintained well-attended office hours. Class included 20-30 upper level undergraduate students.

SERVICE ACTIVITIES

2023 - 2025 **FRESES Planning Committee**
Invited hosts and coordinated 4 workshops for the Front Range Ecology Research Symposium (FRSES) at Colorado State University.

2024-2025 **GDPE Mentor**
Mentored two incoming graduate students throughout their first year.

2021 - 2022 **DC Master Naturalist Trainee**
Completed 50 hours of naturalist training from the University of D.C.; participated in volunteer initiatives including FrogWatch USA, invasive species removal, beaver dam analog construction, trail work, and sustainable community gardening.

2021 **DataKind Volunteer**
Worked with a small team of data-science volunteers and the nonprofit "EcoAction" to create a map of tree canopy inequity in Arlington, V.A.

PUBLICATIONS

Anenberg E, **Church M**, Grundl S, Kim YS, 2018. On the Benefits of Universal Banks: Concurrent Lending and Corporate Bond Underwriting. *FEDS Notes*. Washington: Board of Governors of the Federal Reserve System.

PRESENTATIONS

"Multi-scale remote sensing models to improve decision making around waterbird and wetland diversity"; Poster presentation. NASA Biodiversity and Ecological Conservation Meeting; Washington, D.C., 2025

"The Prairie Pothole Region Pond Mapper: Remote Sensing for Informed Wetland Conservation"; Oral presentation. Front Range Student Ecology Symposium; Fort Collins, CO, 2025.

"The Prairie Pothole Region Pond Mapper: A Calibrated Tool for Automated Surface Water Monitoring"; Oral presentation. Wetland Inventory Science Workshop hosted by Alberta Environment and Protected Areas"; Online, 2024.

"The Prairie Pothole Region Pond Mapper: Harnessing Remote Sensing and Machine Learning for Informed Wetland Conservation"; Poster presentation; Ecological Society of America; Long Beach, CA, 2024.

"Harnessing Remote Sensing for Automated Prairie Pond Detection"; Oral presentation; NAWMP Science Support Team Annual Meeting; Salt Lake City, UT, 2024.

RESEARCH GRANTS

GDPE Travel Grant, 2025 - $500 for graduate research conference travel
GDPE Travel Grant, 2024 - $500 for graduate research conference travel
Haines Research Grant, 2016 - $4,000 for undergraduate research

HONORS/FELLOWSHIPS

North American Wetlands and Migratory Waterbird Fellowship, 2025-2026 - $4000 for graduate research
School of Global Environmental Sustainability (SoGES) Diana Wall Sustainability Leadership Fellows program, 2025-2026
Magna Cum Laude, University of Pittsburgh, April 2017
Outstanding Senior Award, University of Pittsburgh, April 2017
University Scholarship, University of Pittsburgh, September 2013 - April 2017

TRAINING AND SKILLS

LANGUAGES**:**
English (fluent)
French (proficient)

SOFTWARE**:**
R, Google Earth Engine, Whitebox Tools, QGIS, ArcGIS Pro, ENVI, MySQL, Tableau

FIELD:
Identification of subalpine tree species
Soil burn severity assessment based on Burned Area Reflectance Classification (BARC)
Vegetation cover assessment based on the Braun-Blanquet scale
Tree basal area measurement (DBH)
Backcountry navigation
GPS - Trimble Catalyst and Garmin eTrex

WORKSHOPS ATTENDED
Science Communication Workshop - Data Visualization, 2023

Inclusivity in the Field Workshop, 2023
Science Communication Workshop - Communicating Uncertainty, 2024
Creating Wetland Maps in QGIS, 2024
Machine Learning Applications in Wetland Ecology, 2024
Diversity and Inclusion in Wetland Science, 2024
GLMM Deep Dive for Ecological Data, 2024
Spatial Data Science in the Cloud using Python, 2024

MEMBERSHIPS

Ecological Society of America
Society of Wetland Scientists
National Science Policy Network
Geospatial Professional Network (URISA)