

MARY VAN DYKE

mnvandyke@ucla.edu | (202)-321-0863 | Los Angeles, CA

EDUCATION

University of California, Los Angeles

9/2017 – Present

PhD candidate in Dr. Nathan Kraft's plant community ecology lab in the Department of Ecology and Evolutionary Biology, GPA: 4.0, Advanced to candidacy April 2020.

- Dissertation Title: The effect of precipitation on coexistence of annual plant species in a Southern California grassland
- Tropical Plant Systematics field course in Costa Rica, Organization for Tropical Studies 6/2018
- NOLS Southwest Outdoor Educator Course Winter 2016

Carleton College, Bachelor of Arts, Biology, Northfield, MN

2013

Magna cum laude, Cumulative GPA: 3.52, Major GPA: 3.70

- Senior Comprehensive Project: Increased nitrogen deposition in boreal peatlands reduces carbon sequestration due to changes in species composition and increased decomposition rates.
- Australian Field Ecology Abroad Program, Winter Trimester 2012
 - Conducted several short-term field research projects in a variety of ecosystems studying animal behavior, plant distributions, and ecosystem interactions.
- Relevant coursework: Plant Biology, Ecosystems Ecology, Evolution, Biochemistry, Global Change Biology, Organic Chemistry, Statistics

PROFESSIONAL and TEACHING EXPERIENCE

University of California, Los Angeles

Teaching Assistant for Plant Ecology, EEB 161

Fall quarter 2018 and 2019, Winter 2021

Teaching Assistant for Restoration Ecology, EEB 136

Spring quarter 2019 and 2020

Teaching Assistant for Tropical Ecology, EEB 151

Fall 2020

- Led outdoor restoration labs and plant ecology discussion sections; created lesson plans, quantitative worksheets and reading homework; graded midterms, lab reports, and research papers.
- Helped transition classes to online format during the pandemic.

Volunteer docent for the UCLA Mildred E. Mathias Botanical Garden

9/2017 – present

- Lead hour-long tours of the botanical garden for k-12 students detailing plants and adaptations.

Undergraduate research mentor

9/2018 – present

- Took the UCLA Entering Mentoring Training program
- I have worked with 8 undergraduate students at various times advising on project ideas, reading, writing process, and field work.
- Mentored student, Heather Lindsay on her senior thesis project assessing how precipitation affects intraspecific leaf and root functional trait changes in serpentine annual plants.

Research Technician in Dr. Nathan Kraft's Plant Community Ecology Lab

7/2016 – 7/2017

- Processed, organized, and performed viability tests on seeds from 18 serpentine grassland annuals in preparation for trait gardens and competition experiment at Sedgwick Reserve, UCSB.

- Planted over 200 competition plots and trait gardens with serpentine annuals at differing densities in various soil conditions.
- Collected data on competitors and seed production in competition plots.
- Measured key functional traits such as specific leaf area, specific root length, maximum height, canopy shape, seed mass, and flowering phenology for 23 species.
- Performed statistical analyses in R to parameterize population growth models.

Student Conservation Association, AmeriCorps, Barstow, CA

3/2016 – 6/2016

Desert Tortoise Research Assistant

- Recorded detailed data on tortoise behavior, microhabitat selection, vegetation and climate for research investigating the effect of translocation on social interactions and disease transmission.
- Tracked tortoises using telemetry at four field sites in the Mojave Desert.

Minnesota Department of Natural Resources, AmeriCorps, Saint Paul, MN

1/2015 – 12/2015

Planning Specialist, Division of Parks and Trails

- Co-authored master plans and plan amendments for Minnesota State Parks and Trails that will serve as guidance documents for park staff for the next twenty years.
- Developed strategies for implementing new projects such as constructing bicycle trails and snowmobile trails in Minnesota State Parks.
- Created maps of parks, new trails, and surrounding communities using GIS.
- Organized four open house meetings to gain input from public to formulate master plans.

Conservation Corps of Minnesota, AmeriCorps, Saint Paul, MN

2/2014 - 12/2014

Youth Outdoors Field Crew Member

- Preserved and restored native plant communities in St. Paul Parks by removing invasive species, planting native species, performing prescribed burns, and completing plant and animal surveys.
- Led crews of Saint Paul teens in educational activities and service-learning projects to enhance St. Paul Parks and encourage environmental stewardship.
- Planned educational activities and created lesson plans on conservation, ecology, sustainability, teambuilding, and leadership for an environmentally focused after-school program.

The Mountain Institute: Spruce Knob Mountain Center, Circleville, WV

8/2013 - 11/2013

Intern Instructor

- Created lesson plans and taught outdoor education courses in stream ecology, forest ecology, geology, orienteering and general camping and survival skills to students ages 10 to 18.

Carleton College, Northfield, MN

Research Assistant for Professor Daniel Hernandez, Biology

8/2012 - 11/2012

- Studied impact of mammal herbivory exclusion on plant composition and soil processes.
- Analyzed litterbag samples for nutrients using the trilogy nutrient analyzer and maintained long-term research plots.

Research Assistant for Professor Bereket Haileab, Geology

6/2011 - 10/2011

- Investigated the effects of agriculture and urbanization on surface water quality of Rice County, Minnesota through collection and analysis of water samples for nitrate, chloride and calcium.

Teaching Assistant for Introduction to Geology, Dr. Bereket Haileab

8/2011-11/2011

- Supervised student laboratory investigations, provided one-on-one tutoring and graded assignments.

Arboretum Management Assistant

6/2012 - 9/2012

- Planted native species, removed invasive species, built trails, and performed other management tasks aimed at restoring and preserving the native prairie ecosystem in Carleton's 900 acre arboretum.

HONORS and FUNDING

- UCLA Ecology and Evolutionary Biology Departmental Research Grant, February 2018, June 2019, June 2020.
- UCLA Vavra Quarter Fellowship, June 2018, June 2019
- La Kretz Center at Sedgwick Reserve Funding Award, September 2018
- California Native Plant Society Conservation Conference Student Funding Award, February 2018
- The Society of Outdoor Recreation Professionals' New Professional Conference Scholarship, May 2015
- Carleton College Magna Cum Laude Graduate, June 2013
- Sigma Xi, Carleton College Biology Department, June 2013

TALKS and PRESENTATIONS:

- Research talk entitled, "Small changes in rainfall drive large shifts in competition and species coexistence in an annual grassland community," at the Ecological Society of America (ESA) meeting, August, 2020.
- Research talk entitled, "Changes in precipitation alter species coexistence," at Sedgwick Reserve's 2019 Research Symposium, 9/28/19. Also presented at UCLA Departmental research event, 9/2019
- Presented a poster entitled "Do competitors drive intraspecific trait shifts? An experimental test with serpentine annuals," at ESA in August 2017
- Presented poster on long-term study of surface water quality in Rice County, MN at Geological Society of America meeting, October 2011.

SKILLS and CERTIFICATIONS:

- Proficient in R for data management and statistical analysis
- Wilderness First Aid for Field Services certification, January 2020
- Orienteering skills using topographic maps, compasses, or GPS
- Field Ecology Skills: Assess floral cover and diversity, Species Identification using field guides and dichotomous keys, Experience measuring plant functional traits, Telemetry, Animal behavior observations (focal animal sampling, time budgets, ethogram generation).
- 500 plus hours of chainsaw operation
- Wildland Firefighter Type II certification, March 2014