Eli Grossman

1218 Stratford Avenue, South Pasadena, CA 91030 | (626) 487-7659 | elig6173@gmail.com

EDUCATION

Brown University | Providence, RI
Bachelor of Science in Biology, May 2024

- Major: Ecology, Evolutionary, and Organismal Biology
- *Magna Cum Laude* (Highest Honor Bestowed), GPA: 3.97/4.0

RESEARCH EXPERIENCE

Kartzinel Lab, Brown University | Providence, RI
Honors Thesis Student
Fall 2022–Spring 2024

- Studied gut microbial communities of migratory elk as part of a lab-wide effort to profile diet-microbiome linkages in the large mammalian herbivores of Yellowstone National Park.
- Completed honors thesis: "Migratory Metaorganisms: Gut Microbiome Structure and Function in Yellowstone's Elk" (https://doi.org/10.26300/3m41-hj64).
    - Carried out molecular biology protocols such as extracting and cloning DNA from fecal material for 16S sequencing.
    - Performed computational analysis on 16S sequencing data, including QIIME2, PICRUSt2, and Neutral Community Models (NCMs).
- Provided technical assistance to plant DNA metabarcoding project and fecal diet analyses.
- Led a lab meeting, presented thesis poster, and gave a departmental thesis talk.

Bronner Lab, California Institute of Technology | Pasadena, CA
Laboratory Assistant
June 2019–August 2019, June 2020–August 2020

- Studied the role of neural crest stem cells in vertebrate development and evolution.
- Responsible for experimental design, project implementation, and data analysis.
    - Carried out molecular biology protocols such as synthesizing, cloning, and extracting RNA and DNA.
    - Used CRISPR to probe the development of the sympathoadrenal system ("fight or flight response") and the heart in zebrafish.

Volunteer
July 2016–August 2017

- Helped with routine laboratory tasks such as maintaining lamprey embryo cultures and running PCRs.
- Employed antibody stains and in-situ hybridization to visualize changes in gene expression in developing zebrafish and lamprey.

Rossi Lab, City of Hope | Duarte, CA
Laboratory Assistant
June 2018–August 2018
- Researched the cellular processing and potential of small interfering (si)RNA molecules for treatment of cancer.
- Executed independent project investigating how chemical modifications affect the durability of siRNAs targeting cancer cell genes.
    - Responsible for cultivating, monitoring, and manipulating cell cultures.
    - Performed RNA extraction and quantitative PCR.
- Analyzed results and presented findings at a poster fair.

RESEARCH SUPPORT AND HONORS

Research Support
- Brown Undergraduate Teaching and Research Award (Spring 2023): funding for project titled "Diet-Microbiome Linkages in Yellowstone Elk"
- Caltech Summer Undergraduate Research Fellowship (Summer 2020): funding for project titled "Cavefish and Crest: Investigating the Basis of Differential Heart Regenerative Capacity in *Astyanax m exicanus,*" project canceled due to COVID
- Roberts Summer Academy Fellowship (Summer 2018): funding to support training in the Rossi laboratory

Honors
- Biology Departmental Honors (2024)
- Senior Class Marshal (2024)
- Recipient of Undergraduate Paper Prize, Brown University Center for Contemporary South Asia (2020): "Elementary Forms of Meditation: The Magical and Religious Dimensions of Insight Meditation"
- Winner of Concord Review Essay Contest (2019): "Genes and Jukes: The History and Legacy of American Eugenics," *The Concord Review* 29:3 (2019)

PUBLICATIONS

Littleford-Colquhoun B.L., **Grossman E**., Hoff H.K., Florida M., Celeste Holland P., Dalfiume M., Gonzales-Wagner S., Ho B., Markham B., Sedore V., Visaria R., Nantais N., McGarvey L.M., Geremia C. and Kartzinel T.K. Diet-microbiome linkages of resident and migratory elk in Yellowstone National Park. (manuscript in preparation by Kartzinel Lab), author contribution for curation of gut microbial data, gut microbial analyses, contribution to visualizations and writing of manuscript

Lmo1 Regulates Sympathetic Nervous System Differentiation. (manuscript in preparation by Martik Lab), author contribution for data collection

Martik, M.L., Gandhi, S., Uy, B.R. *et al.* Evolution of the new head by gradual acquisition of neural crest regulatory circuits. *Nature* **574**, 675–678 (2019). https://doi.org/10.1038/s41586-019-1691-4, acknowledgement for technical assistance

---

RELEVANT TEACHING AND COURSEWORK

Teaching
Teaching Assistant – Population Genetics (Fall 2023) | Instructor: Professor Daniel Weinreich
- Responsible for developing lesson plans and leading weekly discussion sections.
- Held office hours, aided students with weekly group problem sets and exam preparation.

Coursework
Biology: Host-Microbiome Interactions, Conservation in the Genomics Age, Population Genetics, Population Genomics, Terrestial Biogeochemistry, Plant Biology, Earth: Evolution of a Habitable Planet, Phage Hunters
Chemistry: Organic Geochemistry, Advanced Biochemistry, Organic Chemistry I & II, Biochemistry, General Chemistry (Equilibrium, Rate, and Structure)
Math/Physics: Biological Physics, Inference in Genomics and Molecular Biology, Honors Statistical Inference I, Multivariable Calculus, Honors Linear Algebra

---

FIELD EXPERIENCE

Yosemite Fire Effects Crew (US National Park Service) | El Portal, CA
Biological Science Technician (Fire Effects Monitor)
June 2024–October 2024
- Provided ecological and technical support for wildfire suppression, management, and prescribed burn operations.
- Implemented fire effects monitoring protocols and developed reports on managed fires.
    - Collected traditional forestry/fire ecology plot-level metrics and executed a novel terrestrial lidar protocol.
    - Developed R scripts to manage and automate data entry.
    - Contributed to data analysis, visualization, and report writing.
- Worked as wildland firefighter with the Yosemite Wildland Fire Module.

Apache Kid Wilderness Wildland Fire Module (US Forest Service) | Magdalena, NM
Forestry Technician (Wildland Firefighter)
May 2022–August 2022, May 2023–August 2023
- Specialized in backcountry and managed fire operations.
- Executed prescribed burns; participated in initial attack, mop-up and rehabilitation operations on wildfires under both full suppression and resource management objectives.
- Constructed photo and fuel sampling plots, recorded fire behavior and effects observations, and co-authored reports for managed fires.

AmeriCorps St. Louis | St. Louis, MO
Emergency Response Team Member
September 2020–August 2021
- Performed a year of national service as a member of a conservation crew.
- Engaged in projects that included invasive species removal, trail construction, habitat restoration, and prescribed burning.
- Deployed by FEMA to support COVID mass vaccination sites and to organize state database of volunteer nurses and EMTs.

EXTRACURRICULAR ACTIVITIES

Ecology, Evolution, and Organismal Biology Department Undergraduate Group
Leader (2023–2024)
Brown Outing Club
Trip Leader (2023–2024), *Trail Run Coordinator* (2024)
Environmental Program House (Food Co-op)
Co-President (2023–2024), *Member* (2022–2023)

REFERENCES

Tyler Kartzinel, PhD | Brown University
Associate Professor, Ecology, Evolution, and Organismal Biology
85 Waterman Street, Providence, Rhode Island
(401) 863-5851
tyler_kartzinel@brown.edu

Daniel Weinreich, PhD | Brown University
Royce Family Professor of Teaching Excellence in Biology
Vice Chair, Ecology, Evolution, and Organismal Biology
80 Waterman Street, Providence, Rhode Island
(401) 863-3937
daniel_weinreich@brown.edu

Megan Martik, PhD | UC Berkeley
Assistant Professor, Molecular and Cell Biology
142 Weill Hall #3200, Berkeley, CA
(724) 518-1240
martik@berkeley.edu

Marianne Bronner, PhD | Caltech
Edward B. Lewis Professor of Biology
Director of the Beckman Institute
400 S. Wilson Avenue, Pasadena, CA
(626) 395-3355
mbronner@caltech.edu