

Benjamin Getraer

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I am an intellectually adventurous student of life, with a passion for doing things *right*. Broadly, my interests lie along the intersections of quantitative and computational Earth science and ecology, Wilderness conservation and field work, and leadership, mentorship, and education. I have strong analytical skills and an academic background in scientific research, including scientific writing and communication, with a Bachelors degree from Princeton University's Department of Geosciences. I am motivated by collaborative learning and discovery, geologically inspired existentialism, and the irrepressible desire to challenge myself in new ways — and inspired by public service and social and environmental justice.

My research interests are in developing and executing interdisciplinary research projects combining field work with computational modeling and analysis to understand the connections between ecosystems, climate, and the ocean and cryosphere. I am especially interested in studying the effects of climate change on coastal and tundra ecosystems.

EDUCATION

DEGREE:

Princeton University, Department of Geosciences
Bachelor of Arts and Sciences *cum laude*, Class of 2019

AWARDS:

Sigma Xi Book Award, June 2019
for outstanding research ability and clear writing in the senior thesis
Nomination to the Princeton chapter of the Sigma Xi honor society, June 2019

UNDERGRADUATE SUMMARY:

Sought out challenging interdisciplinary coursework, including courses in geology, theoretical ecology, computer science, ocean physics, computational geophysics, and scientific writing. Submitted three independent research papers to the Department of Geosciences, including a senior thesis, on the mass wasting of the Greenland ice sheet, working on data reduction methods for global spherical harmonics and comparing the gravimetric signal of mass loss to environmental forcings from climate model reanalysis.

Extensive experience working with MatLab, Java, ArcGIS, L^AT_EX. Additional experience working with R, python, github. Some exposure to C, Fortran.

INDEPENDENT RESEARCH PAPERS:

- 2019 Comparison of GRACE derived Greenland mass wasting to near surface temperature from MERRA-2 reanalysis
senior thesis, presented as a 15 minute talk to the Department of Geosciences
- 2018 Regional Forcing of Greenland Ice Loss 2002–2017

- junior paper, presented as a scientific poster to the Department of Geosciences*
- 2018 Resolving and contextualizing the signal of Greenland ice loss 2014–2017
junior paper, presented as a scientific poster to the Department of Geosciences and at Princeton Research Day
- 2017 Topography-based modeling of Utah snowpack from telemetry data
presented as a 10 minute talk to the Department of Geosciences and at Princeton Research Day
- code for senior thesis and junior papers can be found at github.com/bgetraer/slepian_bgetraer*

PRINCETON UNIVERSITY FACULTY ADVISERS:

Laure Resplandy	Assistant Professor of Geosciences	<i>senior thesis adviser</i>
Frederik J. Simons	Professor of Geosciences	<i>junior paper adviser</i>
Amanda Irwin Wilkins	Writing Program Director	
Adam C. Maloof	Professor of Geosciences	

FIELD RESEARCH EXPERIENCE:

Year	Course
2018	Sedimentology (<i>Princeton University course, 10 day field trip</i>) <i>Quantitative characterization of depth and orientation patterns in active stromatolite reefs using ground-truthed UAV imagery classification in Hamelin Pool Shark Bay, Australia, leading to a 10 minute presentation to the Department of Geosciences</i>
2017	Juneau Icefield Research Program (<i>8 week summer field course</i>) <i>Glaciological field course on the Juneau Icefield, Alaska and British Columbia; continuation of the longest glacial mass-balance studies in North America on the Taku and Lemon Creek Glaciers, with public presentations of research in Atlin, BC and Juneau, AK</i>
2017	Metamorphic and Igneous Petrology (<i>Princeton University course, 7 day field trip</i>) <i>Support for the independent-magma-bodies hypothesis for the Bishop Tuff formation by pumice clast size distributions and handheld XRF and magnetometer measurements in Long Valley Caldera, CA, presented as a poster to the Department of Geosciences</i>
2016	Measuring Climate Change: Methods in Data Analysis and Scientific Writing (<i>Princeton University course, 7 day field trip</i>) <i>Independent development of research questions and data collection objectives and selection of field sites by each student, at a variety of sites across Utah, leading to a term paper and 10 minute presentation of work to the Department of Geosciences</i>

ADDITIONAL RELEVANT COURSEWORK:

Geosciences

Introduction to Oceanography
 Ocean Physics for Climate
 Data, Models, and Uncertainty in the Natural Sciences
 Global Geophysics
 Computational Geophysics

Ecology

Biodiversity and Species Interactions
 Theoretical Ecology

Mathematics and Computer Science

Multivariable Calculus

Linear Algebra

Differential Equations

Algorithms and Data Structures

Other

Integrated Science Curriculum

mathematically-structured introduction to physics, biology, chemistry, and computer science

WORK EXPERIENCE

My professional experience spans years in the non-profit and federal sectors of resource and land management and outdoor recreation. I am experienced in public speaking and interpretative presentation, customer service, managing complex interpersonal dynamics in extreme contexts, small team leadership (including 18 weeklong small-group trips for teens and young adults), and situational risk management. I have experience working in large teams as well as in isolating environments where my work was largely self-supported.

- 2021– ONLINE COURSE DEVELOPMENT *self-employed contractor*
Video editing for The Simons Laboratories at Princeton University
400-level course in statistics and modeling, 36 hours of footage
- 2020–2021 SAFE PASSAGES AMERICORPS ELEV8 PROGRAM
4–5 grade Education Intervention Specialist, Emeryville CA
Worked directly with high-need students 2–4 years behind grade level in an in-person COVID learning hub in the Emeryville United School District; Emphasis on flexibility, patience, responsible management of stressful situations
- 2018–2020 UNITED STATES FOREST SERVICE *spring/summer seasonal*
2020 Wilderness Ranger, San Juan National Forest, CO
Patrolled Weminuche and Hermosa Creek Wilderness Areas; Cleared over 500 blow downs from Wilderness trails; Conducted public contacts and compliance checks; Tracked trail usage and rehabilitated Wilderness sites as necessary
2019 Wilderness Ranger, Salmon-Challis National Forest, ID
Operated remote guard stations in the Frank Church Wilderness; Managed white-water launches on the Middle Fork of the Salmon River; Interfaced with members of the public and private outfitter and guide operations in interpretative, compliance, and administrative based roles
2018 Pathways Recreation Intern, Eldorado National Forest, CA
Maintained developed recreational sites and water systems; Wrote scripts for ESRI suite GIS applications to organize and process trail and road condition data; Assisted in signage design and fabrication, wildlife surveys, and trail work

- 2019–2020 RANDOLPH MOUNTAIN CLUB *fall/winter seasonal*
 Winter backcountry caretaker, Northern Presidential Range, NH
Self-supported management of backcountry shelters in the White Mountain National Forest from September–March in an isolated alpine environment; Communicated with public visitors, conducted facility maintenance, charged overnight fees for facility use
 Snowpack data collection volunteer, USFS Snow Ranger Program
Took daily measurements of snowpack depth and density, snowfall characteristics, and weather information for the White Mountain National Forest and Mt. Washington Avalanche Center snow research and avalanche forecasting programs
- 2017–2019 PRINCETON OUTDOOR ACTION PROGRAM
- 2017–2019 Orientation backpacking trip leader
Led two week-long orientation trips for incoming students; Focus on mentorship, communication, and managing group dynamics
- 2018–2019 CPR/Wilderness First Aid instructor
BLS level CPR/AED instructor certified through LifeForceUSA, Inc. and the American Heart Association (20 hrs); Instructed Wilderness First Aid courses through Princeton Outdoor Action and the Emergency Care and Safety Institute (60 hrs)
- 2018–2019 Leader Trainer
Taught outdoor leadership skills and led two week-long instructional backpacking trips for new leaders-in-training; Evaluated and helped select future trip leaders; Participated in weekly committee guiding the direction of the program; Extensive work on constructive feedback, effective student engagement, and developing communication and decision making strategies
- 2017 PRINCETON GRINDER LAB
 Lab technician for the Maloof Research Group
Designed microprocessor-based robotics for GIRI using the Arduino platform; Assisted in measuring Cloudina fossils for lab research
- 2012–2016 APPALACHIAN MOUNTAIN CLUB
- 2016 Teen trail crew leader, NY/NJ region
Led 12 weeklong teen volunteer crews ages 14- 17 in Delaware Water Gap National Recreation Area, NJ, and Harriman State Park, NY; Constructed rock and timber trail features and cleared a new 2.1 mile trail at the AMC Harriman Outdoors Center
- 2012–2015 Trail crew volunteer, NH, ME, & NJ
Volunteered on two weeklong trail crews and one four week leadership crew in the White Mountain National Forest; Led one teen trail crew as a volunteer leader in the Delaware Water Gap National Recreation Area

CERTIFICATIONS

Wilderness First Responder	Wilderness Medical Associates	2016– (Jan. 2022)
AIARE L1 avalanche training	International Mountain Climbing School	2019
Belay training	Princeton Outdoor Action	2019
Radio communications	United States Forest Service	2018, 2019, 2020
Type-II Wildland Firefighter	United States Forest Service	2020
Class-B bucking sawyer	United States Forest Service	2020
Fixed-wing flight manager	United States Forest Service	2019
Fee collection officer	United States Forest Service	2019
BLS level CPR/AED instructor	American Heart Association	2018–2020 <i>expired</i>