An introduction to the Geology & Geophysics Department @ Yale

Maureen Long
Professor of Geology and Geophysics
Director of Graduate Studies

Sophie Westacott
Ph.D. Candidate (3rd year)
President, Dana Club

Photo by Elaine Lustig Cohen
Yale University, New Haven, CT

- Located in New Haven, CT – bustling city of 130,000
- Pedestrian/bike friendly
- World’s BEST pizza
- Lots of free & amazing cultural events
- Easy access by car and train

- Yale University: 12,000 total students, about 3,000 in the Graduate School of Arts & Sciences
The Department of Geology and Geophysics

By the numbers:

- 22 faculty across five subfields (Atmosphere, Oceans, Climate Dynamics; Geochemistry; Lithosphere and Surface Processes, Paleontology and Evolution; Solid Earth Geophysics)
- 54 current Ph.D. students (typical incoming class is 8-10)
- Roughly 8 undergraduate majors per year

(Very) partial list of facilities: clean lab, several mass spectrometers, microprobe, scanning electron microscope, broadband seismometer pool, dedicated high-performance computing resources, ice physics lab, Peabody Museum of Natural History collections...
AOCD at Yale encompasses a wide range of theoretical, observational, and experimental research on geophysical fluid dynamics and climate. We focus on atmospheric physics and dynamics, physical oceanography, climate variability, and the physics of ice. AOCD studies weather and climate variability on Earth and on other planets on time scales extending out to millions of years.
G&G Science: Geochemistry

Geomicrobiology: Marine phosphate cycle, DNA thermometry, biogeochemical cycles on Earth (and Mars!)

Stable isotope geochemistry: exploring connections between Earth processes, biological innovation, and environmental changes, today and through deep time.

Radiogenic isotopes: geochronology applications and as process tracers
LSP integrates geological processes ranging in scales from microscopic to global, from fractions of a second to the age of the Earth. We study how tectonic processes shape the Earth’s surface through interactions among the deep interior, the lithosphere, the hydro-atmosphere, and the biosphere.
G&G Science: Paleontology and Evolution

Asking & answering the big questions of the evolution of life & Earth: from the diversification of life, to the struggle for existence!

Lots of interaction with, and use of, world-class collections at the Yale Peabody Museum.
Why does the Earth have plate tectonics? How has the deep Earth evolved through time? How do processes in the deep Earth connect to the plate tectonic system, earthquakes, volcanoes, etc.? How do Earth materials behave under high pressure and temperature conditions?
Geology & Geophysics Students

We have an amazing graduate student body here in G&G, with terrific opportunities for research, teaching, and professional development. Students lead the Colloquium Committee (choosing weekly colloquium speakers), have an active student group (Dana Club), can pursue teaching certificates through the Center for Teaching and Learning...

Partial list of undergraduate/master’s institutions admitted students have come from: Colorado College, Appalachian State, Slippery Rock University, The College of New Jersey, U. Maryland, U. Connecticut, Augustana College, Cornell University, UCLA, UC Berkeley, Brown U., Boston U., Colgate University, Peking University, University of Science and Technology of China, Indian Institute of Technology - Kharagpur, Rutgers University, Duke University, New York U., University of Southern California, Obafemi Awolowo U., Nanjing University, Michigan Tech, U. Rochester, Bard College, Rice University, U. Wyoming, U. North Dakota, Swarthmore College, U. Tokyo, U. Bonn...

G&G student-organized (& department funded!) field trip to Japan, Summer 2017
Graduate Student Life in G&G

Dana Club: G&G graduate student group (named after James Dwight Dana).

Social events in G&G, including annual Chair’s Reception, annual department skit, Dana Club BBQs in summer, ski trips, etc.

Field trips: lots of opportunities, including biannual trip open to all G&G students, voted on and planned by graduate students, and funded by department (with modest student contribution). Recent destinations: Japan, United Kingdom, Germany/Austria/Italy, New Zealand, South Africa/Namibia...
What do our students do after graduation?

Partial list of employers for graduates between 2013-2018:


What is our Ph.D. program like?

• First 2 years: taking courses and completing two research projects (major and minor discourse), one with thesis advisor and one with another faculty member
• Between 2-6 semesters of teaching, depending on how a student is funded
• End of year 2: Qualifying exam (presentation of discourse research and questions)
• After Year 2: Ph.D. candidacy, focus on dissertation research
• Typical time to degree is 5-6 years

• Funding: all G&G students are guaranteed full funding through completion of the Ph.D., up to six years, assuming good standing in the program.

• 2018-2019 stipend in G&G: $34,550. Support includes stipend, tuition, health insurance, gym membership, access to on-campus transportation, annual subsidy for graduate student parents. Funding comes from department/university (with teaching requirement), research grants, and/or outside fellowships.
Graduate admissions in G&G: the process

• Deadline is January 2, 2019. Applications through the Yale GSAS.
• GRE (no subject test), academic transcript, recommendation letters, personal statement, TOEFL or equivalent for non-native speaking international applicants*
  • No specific cutoffs on GRE/GPA
• What are we looking for in personal statement of purpose?
  • What kinds of problems are you interested in? What kind of work do you want to do during your Ph.D.?

• What do we look for in general?
  • Research experience/aptitude
  • Perseverance, self-motivation
  • Creative but also goal-driven
  • Good communication skills (!!!)
  • Good at teamwork

• Contacting potential advisors via a concise, specific email is encouraged...
Questions?

http://earth.yale.edu