## GENERAL INFORMATION

**Program sponsor:** Princeton Environmental Institute  
**Position number:** C2MAL  
**Project title:** Extinction of the Dinosaurs Recorded in an Andean Paleolake  
**Organization/research group:** Maloof and Schoene Groups  
**Primary location(s) of internship:** Bolivia; Argentina; Princeton University

**Additional cities and/or countries to be visited (if applicable):** n/a  
**Note:** If this internship is located in a country with an International SOS risk rating of High or Extreme, final candidates must participate in a travel review process overseen by the Travel Oversight Group (TOG), and obtain safety guidance prior to departure. The University reserves the right to revoke support and funding for travel at any time there has been a significant deterioration in the safety and security conditions surrounding travel arrangements, or in the sector of the country, or countries, where travel is to occur.

## FACULTY SPONSOR(s)/HOST INFORMATION

**Name(s):** Adam Maloof

**University Department(s):** Geosciences

**E-mail:** maloof@princeton.edu  
**Phone:** 609-258-2844  
**Website:** [https://www.princeton.edu/geosciences/peo](https://www.princeton.edu/geosciences/peo)

## INTERNSHIP/RESEARCH PROJECT INFORMATION

**Internship/project description:**

Through previous PEI internships, we have shown that Cretaceous lake sediments in Bolivia are sensitive to orbital cycles. We will revisit that project in search of the Cretaceous-Paleogene boundary, 66 million years ago, which marked the last great mass extinction event. Specifically, we will try to leverage the orbital cycles and radiometric ages from volcanic ashes in those lake sediments to better constrain the timing, duration, and environmental changes associated with the extinction of the dinosaurs.

**Student's role and responsibilities:**

As a field assistant, you will take part in all the same activities as the graduate student(s) and professor(s) on the trip. A typical day goes as follows: Wake up with sunrise in a cold, high-elevation campsite, make breakfast, pack a lunch, and get ready to hike. Hike all day -- depending on the day, you might hike just a few miles while making careful observations of rocks and using instruments like GPS and drones, or you might hike 20 miles up steep mountains doing reconnaissance for the next week of work. Some days your pack will just have water, extra clothes and lunch in it. On other days, your pack will have 30+ lbs of rock in it. Return to camp at sunset, organize samples, cook dinner around the campfire, discuss the discoveries of the day and plan the next day, read in your tent, and go to bed. Repeat. The intern should be mentally and physically prepared for long days in adverse weather, cold conditions and high-altitudes. After the 6-7 week field trip, the student will spend the remaining 1-4 weeks at Princeton University in the lab preparing and running samples for geochemical and geophysical analysis.
Internship/project learning objectives:
At the end of the internship, the student will be a skilled camper with experience making geological observations, measuring stratigraphic section, and drawing maps. The student will learn to use differential GPS and to fly a drone. Back at Princeton, the student will learn to use some combination of magnetic susceptibility, gas-source isotope ratio mass spectrometer, and some combination of sample preparation techniques. The student also may learn new techniques in quantitative data analysis, such as principle component analysis, multiple linear regression, and spectral analysis.

PROGRAM REQUIREMENTS

Academic background and any course pre-requisites:
No required academic experience, but geosciences, computer sciences, and statistics all are useful.

Technical skills:
Experience camping and backpacking is a plus.

Additional training(s):
We will meet once per week in the spring to read papers together and prepare for the trip.

Equipment:
Tent, sleeping bag, sleeping pad, warm clothes, field clothes. We will lend you any necessary geology equipment.

Physical demands:
Strenuous hiking, elevations 8,000-14,000 feet, cold nights in a tent.

Language abilities/competencies (if applicable):

Additional information about the internship/project:
Please note that the dates listed below have not been set in stone yet. Please let us know your dates of availability with your application. Selected students will need to complete lab safety training prior to the start of the internship. Students will also need to consult UHS for any travel medical requirements/suggestions.

INTERNATIONAL TRAVEL REQUIREMENTS (if applicable)

Visa(s) required? Yes ☐ No ☒
Research permit/pass required? Yes ☐ No ☒
Immunizations required? Yes ☐ No ☒

INTERNSHIP/PROJECT SUPERVISOR(S)

Name and title of primary supervisor: Bolton Howes, Graduate student
Email: bhowes@princeton.edu
Phone: 

Name and title of additional supervisor, if applicable: n/a
E-mail: 
Phone: 

PROGRAM DATES AND FUNDING INFORMATION

Weekly Stipend: $500 (plus int'l travel award)
Number of Positions Available: 2
Tentative Start Date (mm/dd/yyyy): 06/01/2019
Number of Weeks: 8-10
Tentative End Date (mm/dd/yyyy): 08/01/2019

Note: PEI funding is for full-time work, 35 hours per week minimum, and for a period of at least 8 continuous weeks.

Application Deadline: January 11, 2019