

Geology 072H: The Geology of Eastern California

Professor Drew S. Coleman

Tuesday and Thursday 2:00-3:15, Mitchell Hall Room 205

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Mitchell Hall Room 325, CB# 3315

For information about the department on the web, see www.geosci.unc.edu

This course will make use of the Sakai site at <https://www.unc.edu/sakai/>. Reading assignments, important dates, and so forth will be posted there--be sure to check it regularly.

Office Hours: Monday 3:30-5:00, Wednesday 2:00-4:00, and by appointment. E-mail is a good way to schedule an appointment. Drop-in visits are generally welcomed, except in the hour before class. My office is on the third (top) floor overlooking the rock garden. I may also be in the Chair's office on the first floor, room 113, overlooking the dumpster.

SCHEDULE

The class is designed around a one-week field trip to eastern California over fall break (Oct 12-20). Before the trip, we will meet (generally twice-weekly) to cover important background material, and there will be assignments due in your field notebooks (provided) and class notebooks. During the trip, students will 1) complete organized exercises designed to teach introductory geology concepts, and 2) collect samples and data necessary to complete original geologic research in small groups (~5 students). After the trip students will complete the laboratory and library research necessary to finish their research project. Results will be presented as posters at a Department research symposium, and if possible, at the annual University Undergraduate Research Symposium.

<i>Week of</i>	<i>Topic</i>
August 19	Introduction
August 29	Earth structure and plate tectonics
September 2	Geologic time
September 9	Focus on Research
September 16	Climate change and glaciation
September 23	Weathering and sedimentary rocks
September 30	Minerals and igneous rocks
October 7.....	Earth deformation and metamorphic rocks
~October 12-20	Travel to California for field work

For the remainder of the class, we will work in small groups on original research projects using data and samples collected in the field.

GRADING

Grading will be based on the pre-trip notebooks (20%), , the research project (40%), class participation (10%), and your trip field notebook (30%). The field notebook will contain several assignments that will be completed in the field. Collection and grading of field notebooks will be done several times before the trip, then after the trip.

AN IMPORTANT NOTE ABOUT CLASS ATTENDANCE AND PARTICIPATION

Class attendance is not mandatory, but it is expected. *Class participation is expected* and will make up the final 10% of your grade. The keen observer (this is an honors course) will note that participation without attendance will be difficult. In an attempt to keep us all from getting bored, this seminar will be interactive. I ask questions and I expect answers, discussion and more questions from you.

GRADUATE RESEARCH CONSULTANT

In this research-exposure course, you will be working with a Graduate Research Consultant, (Kyle Krajewski), who will assist you in the research project. The GRC Program is sponsored by the Office for Undergraduate Research (<http://our.unc.edu/>), and you may be able to use this research-exposure course to meet a requirement of the Carolina Research Scholars Program (<http://our.unc.edu/students/crsp/>). I encourage you to visit the OUR website to learn about how you might engage in research, scholarship and creative performance while you are at Carolina.

Kyle is an M.S. candidate in the Department of Geological Sciences. His research is centered on the Roosevelt Hot Springs Geothermal Field in the Mineral Mountains, Utah. Specifically, he characterizes the fault systems in this field by using the thermal ionization mass spectrometer in the Isotope Geochemistry lab to measure minute amounts of lead and uranium isotopes in samples to determine their age.

In addition to the graduate research consultant, every year I bring an extra graduate student to help with logistics and a class alumnus to act as an undergraduate research consultant, and ambassador between you youngsters and the old man in charge. Justine Grabeic is a Ph.D. student examining how magmas crystallize deep in the earth and what their textures reveal about their history. Sarah Brooker will be our Undergraduate Research Consultant. Sarah is a senior in the Geological Sciences Department. She worked in Dr. Liu's ICP-MS lab analyzing soil samples from Hawaii. Sarah presented her research at the annual Geological Society of America conference. She earned funding to start a second research project over the summer, and will travel to Bishop, CA to collect samples. Sarah is a member of Sigma Gamma Epsilon, the geology fraternity (you should ask her about their activities this semester).

A NOTE ABOUT ACADEMIC HONESTY

The University of North Carolina Honor Code is in effect during this course. The Honor Code defines plagiarism as "the intentional representation of another person's words, thoughts, or ideas as one's own." I take this *very* seriously both in lab and lecture. Although you are encouraged to collaborate, you may not represent anyone else's work as your own by, for example, copying their homework or lab results. Furthermore, all written assignments must include proper citations. This code of behavior is not restricted to students at UNC. In fact, it is the code you will honor for the rest of your life as a scientist. If you do not understand what plagiarism is, please see me immediately. As outlined in the Honor Code, the consequences of academic cheating normally are suspension from the University and assignment of a failing grade in the course.

GEOLOGY CONCEPT SKETCHES

Every week, students are required to complete geology concept sketches in your class notebook. The notebooks must be bound (I will show you an example). No spiral binding. No 3-ring binding.

We will practice some concept sketches in class before you are graded. Concept sketches are exactly what they sound like – you will sketch and explain concepts that we discuss in class. The better you understand the concept, the better your sketch will be. You will NOT be graded for artistic ability, but you WILL be graded for completeness and your understanding of the concepts.

AUTOBIOGRAPHIES

By Tuesday, August 27, I need an autobiography from you. This will help everyone in the class get to know each other. Please e-mail me a .pdf file or MS Word file with the information below. **Please use YOUR NAME (or an abbreviation) as the file name when you mail it.** These will be posted on the Sakai page for everyone in the class to access, so if there is any of the information below that you would NOT like to be public knowledge, PLEASE DO NOT include it.

- Name (with a pronunciation key, if needed)
- E-mail address and phone (ONLY IF YOU WANT EVERYONE ELSE IN THE CLASS TO HAVE THIS INFO!)
- Major (if you have one; or a guess at what your major might eventually be)
- Hometown; other places you have lived
- Interests, academic and otherwise
- Classes you are taking this semester
- Classes you really liked in high school
- A picture
- Anything else you might like us to know

Here is my bio that should serve as a guide...

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Geology, Isotope Geochemistry and
Geochronology, Geoarchaeology

I am originally from Pittsburgh, PA, but I lived in State College, PA (2 years), Washington, DC (11 years), Arlington, TX (2 years), Lubbock, TX (4 years [B.S.]), Lawrence, KS (6 years [M.S. & Ph.D.]) and Boston, MA (10 years [postdoc at MIT and faculty at Boston University]). I have been on the faculty at UNC since 2001.

I have been married for 33 years and I have two daughters, Anna (23) and Evelyn (21). I really enjoy biking, camping and dating rocks (but do not tell my wife). I have never seen a good picture of myself and that is why Rule #1 is "No Pictures". There are two more rules that you will certainly learn during the semester.

I love teaching and look forward to the opportunity to get you excited about how the Earth works.



That is me in the red bandana in the middle with my colleagues from Brazil on the Amazon River. That is as close to a camera as I have ever come. You should find a better picture of yourself to use for this..