

Colorado Mesa University Geosciences Program

Guidelines for Graduate School

Why go to graduate school?

Obtaining a M.S. or Ph.D. in Geology or related fields such as Hydrology creates professional opportunities that are not available to graduates with a B.S. degree. For students who envision working in the private sector for a major oil and gas company, the M.S. degree in Geology is generally necessary to get hired. While graduates with a B.S. degree in Geology do find employment, the M.S. degree provides more job opportunities. Recent CMU graduates in geology have been accepted to graduate programs including CU-Boulder, CSU, U of Utah, U of New Mexico, Penn State, Oklahoma State, U. of Texas, Clemson University, and South Dakota School of Mines.

In general, **getting a graduate degree in geology is free**. Students accepted into graduate programs usually have their tuition fees waved and are paid a modest monthly stipend (\$1200-1500) to work as a teaching assistant (TA) or research assistant (RA).

Additional courses that you will need to take while at CMU to get into graduate school

Graduate schools require 1 year of Calculus, Physics, and Chemistry whereas the B.S. degrees in Geosciences and Environmental Geology at CMU only require 1 semester of each of these disciplines. If you intend to go to graduate school at some point after you graduate, you should sign up for:

Math: MATH 152 (5 credits) (Calculus II, minimum for most graduate schools). Additional: Math 253 (Calculus III) and Math 260 (Differential Equations) can be considered.

Physics: PHYS 132 & 132L (5 credits) (take PHYS 131 and 131L instead of PHYS 111 & 111L)

Chemistry: CHEM 132 & 132L (5 credits) (General Chemistry)

MATH 152, PHYS 132/132L, AND CHEM 132/132L count as Restricted Electives for the Geosciences degrees.

Tips for Graduate School

Plan on applying to graduate school in the fall semester of your senior year. You will need letters of recommendation from your Geology professors, and you will have to take the Graduate Record Exams (GREs; see below).

Attending graduate school is more like applying for a job rather than simply enrolling in a school.

Most students that enter graduate school in Geology are applying to work with a specific professor rather than simply trying to get accepted to a given school. A faculty member (from the graduate school of your choice) who wants **you** can virtually guarantee admission to graduate school. At many schools, the majority of funding for graduate students comes through research grants to specific faculty members, not via the geology graduate program. Undergrads who contact and develop a good relationship with a graduate faculty member BEFORE applications for admission are reviewed stand a far better chance of being accepted than those who do not.

By the time your application reaches the school, you should have communicated with a professor that you are applying to work with that specific professor. This may seem like a daunting task but it is not as bad as you think because finding good graduate students is not easy. If you are a strong student, realize that you are a valuable commodity, and professors will want to talk with you. Professors are always looking for good students.

How do I go about trying to figure out what I want to study and who to study with?

To begin this process, determine the general area(s) of geology that are of interest to you? Do you want to pursue “hard” or “soft” rock geology? Do you want to pursue hydrology or geophysics? Then talk to your Geology advisor or another faculty member who specializes in your area of interest. They will be able to tell you which schools and professors you should research. Then you will need to use the web to learn about these professors and schools. After this research phase, you should have a general idea of which professors/schools might be a good fit with your interest. Next, you need to find out if there will be any openings for new graduate students in the specific professor’s research group. To do this, write a short email to the professor stating your general interests and expressing your interest in their work. You may want to include a resume as well. In general, professors will get back in touch with you if they have an opening on their research team.

Another good way to find out about graduate programs is to attend professional meetings such as the national Geological Society of America meeting where schools routinely set up information booths for prospective students and have current faculty and graduate students on hand to talk with prospective graduate students.

What will professors and graduate schools expect when I apply?

Grades. Excellent grades alone will NOT guarantee admission to the graduate school of your choice, and good, but not great, grades, will not necessarily prevent you from attending a good graduate school. Grades are important but they are not the only thing schools (and employers) look at.

Research Experience and Internships. Graduate work in geology involves research, and graduate schools preferentially admit students with research experience. Research opportunities are available for CMU geology students (Structured Research), and students who plan on attending graduate school should contact CMU geology faculty about completing an Honors Thesis. Note that an Honors Thesis is not a requirement for graduation from CMU. Internships can also help strengthen a graduate school application. If possible, undergraduates should try to obtain part-time or summer employment related in some way to geology.

GREs. Graduate Record Exams (GREs) scores allow graduate schools to compare students from a wide range of undergraduate institutions. Students should recognize that their GRE scores are important and spend appropriate time preparing for the GREs.

Communication Skills. Communication skills are extremely important. Many graduate schools interview prospective students. Those who cannot communicate effectively, both verbally and in writing, are rarely admitted. CMU students with weak communications skills should take additional coursework in technical writing and public speaking.