

The Earth Sciences Department at City College of San Francisco

is seeking support for its work providing high-quality community-wide science education and inspiration.

The [Earth Sciences Department](#) at City College of San Francisco enjoys a well-deserved reputation of high standards and quality. We offer our students educational experiences that include lectures, laboratory activities, work experience, mentoring, field trips, and service learning, and professional opportunities in the programs of Geology, Paleontology, Oceanography, Geography, and GIS (Geographical Information System). We developed, installed, and maintain building-wide exhibits on [The Story of Time and Life](#) (bringing real dinosaur fossils and the story of science and evolution to the hallways of our Science Hall), earthquakes, weather, San Francisco Geology, and more. Most of our classes are designed for transfer students who will continue onward for a Bachelor's Degree, though our classes are open to and also attended by members of the community with a wide range of educational goals, including improved job performance (teachers and writers), career changes, and continued learning. We serve over 700 incredibly diverse students per semester, in 21 class sections, with 3 full-time, and 8 part-time instructors. Most of our students take our courses to satisfy the only physical science course requirement they may face in their college career. We help these students see the world in new and exciting ways, better understand their role in that world, and expand their vision of their own career potential and expectations.

Our department interacts with a large cross-section of the San Francisco, national, and international community. We reach out worldwide through our Story of Time and Life exhibit (which is visited in person and online by students and teachers worldwide) and nationally by participating in and leading national and local Earth Science Education workshops, such as with the [On the Cutting Edge Program](#).

To continue to offer high-quality, up-to-date, and pertinent educational experiences to the community, we need leadership and support. Here is a sampling of some of our critical needs:

- Our classes are standing room only on day one of each semester, with lines to get in and hundreds turned away. We need to **expand our department's offerings** with 4-6 more sections each semester.
- Because our department does not have a computer lab, **we need 30 laptop computers** to use for interactive lab activities – especially for accessing pertinent online data such as satellite images and Google Earth maps.
- We need **30 high-quality microscopes** for use studying sources, composition, and transport of marine sediment; the structure and function of plankton; micropaleontology, and much more.
- We need to **maintain and upgrade the audio-visual equipment** we use in our classrooms including computers, projectors, screens, microscope viewers, and speakers.
- **Rock and mineral sets** that we use to demonstrate the major physical, chemical, and biological processes at work on our planet are continuously used, broken, and in need of replacement.
- **Globes and maps** that reflect the most current information about Earth's surface are imperative (ours are decades old, well used, and increasingly hard to read).
- **Industry-sponsored internship opportunities** can give our students the opportunity to work directly with professionals in the field and add real-world data and applications to our classes.

Incredulously, the Earth Sciences Department currently has an annual budget of \$1K for all supplies (e.g., slides, chemicals, printer cartridges, audio-visual and microscope repair parts, lecture DVDs, owl pellets, piling moss, etc.). That we have managed as well as we have to date is a testament to those who have donated time, money, and supplies in our past, including mostly our own faculty. Because we rely so heavily on these donations, we must actively seek outside funds and grants now to acquire or arrange for critical educational items and experiences. Each day, we witness life-changing consequences of earth-science processes (e.g., sulfide corrosion of gas lines in San Bruno by microbial sulfate reduction, mudslides in Southern California during storms). Please join us in our ongoing work providing science education across our community.

3 full-time and 8 part-time instructors – including U.S.G.S. geologists – one currently involved with geochemistry research, the others former researchers; industry GIS specialists – from local companies, such as P.G. & E.; geologists active as local consultants; textbook authors; previous researchers with experiences that cover the entire planet and a wide range of industry applications; graduates from U.C. Berkeley, Stanford, Santa Cruz, and Caltech.

21 course sections currently offered per semester (all full within a few weeks of registration opening):

Geology/Oceanography

Oceanography
Oceanography Lab
Paleontology
Paleontology Lab
Introduction to Geology
Geology Lab
Historical Geology
Geology of California
Geology of Gems
San Francisco Geology
Geology of National Parks
Current Topics in Earth Sciences
Work Experience

Geography

Introduction to Physical Geography
Physical Geography Lab
Economic Geography
Cultural Geography
Introduction to Geographical Information Systems (GIS)
Intermediate Geographical Information Systems (GIS)
Advanced Geographical Information Systems (GIS)
Work Experience

We do not teach mineralogy, petrology, or structural geology. Our students, to be successful after transferring to the 4-year colleges for their degrees, need to take Calculus, Physics, and Chemistry during their time at City College.

Our department serves over 700 students per semester, in 21 class sections. Our students are a mixture of:

- **Majors** (transferring to U.C. Berkeley – and other U.C.s in California; San Francisco State – and other C.S.U.s – State Universities in California; Mills College – and other private colleges).
- **General Education students** who are required to take one physical science lecture and one science lab for transfer to and eventual graduation from a U.C. or C.S.U. Many of these students will receive their only science class from us. We consider that a hefty responsibility and provide them with a rigorous experience.
- **Continuing education students** who come to us for life-long learning or career changes. Many of these students already have degrees – including retirees with Ph.D.s in other sciences!
- **Current workforce students who come to us for job training.** These students include industry personnel looking for certification in new technology (GIS) and secondary-school teachers looking for professional development in Earth Sciences.

Some of our students' stories:

- **Joshua Biddle** won the 2010 U.C. Berkeley Medal of Honor. During his graduation speech, he described how he struggled through his early education and lost his way, but found his inspiration and discovered his career direction because of the experiences he received in his CCSF geology class. He is currently a medical student at U.C.S.F. with a host of successful research experiences in his pocket.
- **Thomas Chupein** completed his City College experience working as a mentor in the Geography program. He transferred to U.C. Berkeley winning the prestigious national Jack Cooke Kent scholarship. He later graduated from Harvard University Kennedy School of Government and now works as a Social Policy Consultant at UNICEF Regional Office for South Asia in Nepal.
- **Matthew Gonzales, Russel McArthur, and Anita Engelstad** all completed their City College experience working as lab aides and mentors in the Geology and Oceanography program. Matt transferred to U.C. Berkeley, graduated in 2010, and is currently enrolled in a Ph.D. program at Penn State University in geochemistry. Russell transferred to U.C. Berkeley, graduated in 2010 with a Bachelor's and Master's in geology and is currently teaching Earth Sciences in the San Francisco Bay Area. **Anita Engelstad** is on track to graduate from San Francisco State this year with a master's in Oceanography (already the first undergraduate to graduate from their new Oceanography program).