

Graduate Opportunities in HYDROGEOLOGY

EARTH AND PLANETARY SCIENCES

UNIVERSITY OF CALIFORNIA, SANTA CRUZ

I am considering admitting *one graduate student with expertise and interest in one or more of these key areas* during the 2022-23 graduate admission cycle (students begin in summer/fall 2023):

(1) Managed aquifer recharge, surface water – groundwater interactions, water quality, incentives for enhancing use of stormwater and floodwater for managed recharge.

In addition, *I may consider admitting a student with expertise and interest in these areas:*

(2) Subseafloor geothermics and hydrothermal systems on Earth and Ocean Worlds

Project descriptions:

(1) We are helping to design, create, and operate managed recharge systems to improve water supplies and water quality, conducting field and laboratory research, managing a novel recharge incentive program, and running models of coupled processes to understand these systems. We may also have opportunities in surface water - groundwater interactions in stream/river systems. Our work includes field studies, laboratory experiments, GIS analyses, and numerical modeling. We collaborate with colleagues in other departments and at other universities, agencies, NGOs, and across California and around the world.

(2) We are working as part of several research teams: designing, building, and testing the next generation of marine geothermal measurement systems, including software for data processing, and developing numerical models of coupled fluid-heat-solute transport below the icy shells of ocean worlds. We are also preparing two- and three-dimensional simulations of subseafloor hydrothermal circulation on Earth, and looking for new opportunities to conduct surveys and experiments at sea.

Qualifications;

Successful applicants will have an ***outstanding academic record*** with at least a B.S./B.A. in some branch of Earth/Planetary Science, Hydrogeology, Engineering, Physics, Geochemistry, or a related discipline, including *considerable quantitative coursework*. Prior research experience is helpful (at B.S. or M.S. level), as will be *strong writing and/or coding skills*, interest in *reading and discussing* the scientific literature, enthusiasm for *discovery*, and *technical ambition*.

Other helpful skills/interests include: working with lab/field equipment, being highly organized and goal oriented, ability to work independently and as part of multidisciplinary teams, and endurance to work long days in the field or lab. For field work: transit to distant sites, working on uneven ground/ships, occasional heavy lifting, attention to safety and doing quality work.

Funding:

Hydrogeology students are funded with fellowships, research grants, and teaching assistantships. Research support for this work comes from federal, state, regional, and private sources.

Group status: As of Summer 2022, the UCSC Hydrogeology Research Group includes five Ph.D. students, one M.S. student, four undergraduate students, and a staff researcher.

Please direct questions to Andy Fisher (Professor of Earth and Planetary Sciences, UCSC), afisher@ucsc.edu. More information on research activities within the UCSC Hydrogeology Group can be found at: <http://websites.pmc.ucsc.edu/~afisher>.

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