



[Start](#) | [Grid View](#) | [Author Index](#) | [View Uploaded Presentations](#) | [Meeting Information](#)

GSA Annual Meeting in Phoenix, Arizona, USA - 2019

Paper No. 74-10

Presentation Time: 4:10 PM

DATA-DRIVEN DECISIONS IN GEOSCIENCE CURRICULUM REVISION AT WEBER STATE UNIVERSITY, OGDEN, UTAH

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Weber State University (Ogden, UT) is an open-enrollment, dual-mission (regional university and community college) institution serving ~28,000 students. The Department of Earth and Environmental Sciences (7 tenure-line faculty, 110 undergraduate majors) has implemented a major curriculum revision informed by: (1) participation in NSF-sponsored *Future of Undergraduate Geoscience Education* summits; (2) analysis of graduate school placement of recent graduates; (3) consultation with our alumni advisory council about workforce readiness and local hiring; (4) participation in a NAGT Traveling Workshop focused on embedding sustainability in programs; (5) a matrix approach to curriculum analysis using lists of critical geoscience concepts and skills; and (6) integration of course-based undergraduate research projects. The restructuring represents both a change in focus and emphasis on high-impact teaching.

Alumni-placement data indicate that the environmental sector is one of the top employment areas for our graduates, matching recent results from AGI workforce studies. These data, combined with department-wide discussions facilitated by the NAGT Traveling Workshop Program, led to department name change, from *Geosciences* to *Earth & Environmental Sciences*.

The matrix-based analysis of our Geology (BS) degree led us to: (1) add course requirements in applied hydrology and environmental geochemistry; (2) develop a "sophomore-bridge" geoscience methods and careers course to facilitate the transition from lower- to upper-division courses; (3) expand and revise our existing field methods course and summer field camp; (4) introduce a new senior seminar focused on societal issues; and (5) integrate course-based undergraduate research experiences (CURE) into the curriculum.

We will assess the success of our curriculum change through student retention metrics, senior exit interviews, graduate school admission rates, and job placement data.

As a department, we are also engaged in efforts to recruit a more diverse student body to the geosciences (supported by an NSF GP-EXTRA grant), develop a new multidisciplinary undergraduate degree (BS) in environmental science, and expand our undergraduate research opportunities. In this presentation, we will present our process and resulting curriculum.

Session No. 74

[T196. Geoscience Curriculum in the Twenty-First Century: Adapting Programs to Meet Students' Evolving Needs](#)

Sunday, 22 September 2019: 1:30 PM-5:30 PM

Room 101AB, West Building (Phoenix Convention Center)

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[Back to: T196. Geoscience Curriculum in the Twenty-First Century: Adapting Programs to Meet Students' Evolving Needs](#)

[<< Previous Abstract](#) | [Next Abstract >>](#)