Strategies for raising awareness of geoscience related careers at 2-year colleges

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I am single faculty discipline at my campus, part of a large urban multi-campus district in Kansas City, Missouri with a total of three district full-time geology faculty. The overwhelming majority of students at my institution take geoscience courses (e.g. physical geology or physical geography) to fulfill part of the general education requirements of the Associates in Arts degree or General Education certificate for transfer to a 4-year school. As with many other community college earth science programs, I face a relatively small number of students continuing on to major in geoscience programs at their transfer 4-year institution. Additionally, students have very few opportunities to take upper level (200-level) geology courses which often transfer as just elective credit. Nor are there strong established pipelines for students interested in geoscience to matriculate to the several surrounding 4-year institution geology programs. Typically I average two to three students that make their interests in geology known to me per year. This is difficult to track however as my institution does not have a geology "major" as part of the Associates in Science or Associates in Arts degrees. To increase interest and retention in geosciences courses, I have developed a two prong approach – one aimed at students looking to transfer to a 4-year institution and the other aimed at students in the often overlooked career and technical programs.

In the case of transfer students I take on a "high touch" approach in my introductory Physical Geology course. To make students aware of geoscience related careers (many of whom have not had an earth science course since ninth grade) I work examples of such careers into lecture topics in class. For example, when lecturing on groundwater, I emphasize what types of jobs in geosciences exists for that particular field of study (such as hydrologists, specifically what they do and what they study). I also am active as a faculty mentor and advisor for students who express interest in science on their admission forms or in discussions of potential careers in science in our first-year experience courses and GUID classes. Serving as a faculty mentor has been very effective, not only in recruiting students to consider careers in geology, but also in advising a curriculum for students necessary to be successful upon transfer to a 4-year institution (such as completing college level chemistry, physics, and calculus).

The second approach focuses on students pursuing certificates and degrees in career and technical (CTE) energy related programs (such as HVAC, industrial engineering technology, electrician, and linemen). To increase awareness of vocational related geoscience careers, many of which require a good foundation in the vocational training they are currently pursing, I developed a foundation energy course - Energy and the environment - which fulfills both the science general education component of the AA degree for students looking to transfer as well as CTE students. The curriculum focuses on fundamental concepts of energy generation and environmental impact including analysis of energy fundamentals, fossil fuel exploration and use, atmospheric pollution, global climate change, nuclear energy, alternative energy sources, and energy conservation all of which are directly related to geologic processes. These new course is part of newly created certificate programs in Photovoltaics, energy efficiency, and solar thermal – with the intention of expanding to AAS degrees in each.

Lastly, to raise awareness of the active outdoor aspects of geology careers that may draw students with interests in similar activities, such as hiking, backpacking, camping, etc., I incorporate field trips into my introductory geology course as well as a much longer field study course. I have found field experiences to be very effective in recruiting interest in geosciences. Typically several of the trip participants express increased interest in careers in geology on post-trip student experience surveys. However, since such

field experiences only transfer as elective credit, I struggle with recruiting large numbers of students to take such courses. Typically those already interested in geology are more prone to enroll than someone who is still undecided in their long term career plans.