



High Demand, Core Geosciences, and Meeting the Challenges through Online Approaches

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As the geosciences has evolved over the last several decades, so too has undergraduate geoscience education, both from a standpoint of curriculum and educational experience. In the United States, we have been experiencing very strong growth in enrollments in geoscience, as well as employment demand for the last 7 years. That growth has been largely fueled by all aspects of the energy boom in the US, both from the energy production side and the environmental management side. Interestingly the portfolio of experiences and knowledge required are strongly congruent as evidenced from results of the American Geosciences Institute's National Geoscience Exit Survey. Likewise, the demand for new geoscientists in the US is outstripping even the nearly unprecedented growth in enrollments and degrees, which is calling into question the geosciences' inability to effectively reach into the largest growing segments of the U.S. College population – underrepresented minorities. We will also examine the results of the AGI Survey on Geoscience Online Learning and examine how the results of that survey are rectified with Peter Smith's "Middle Third" theory on "wasted talent" because of spatial, economic, and social dislocation. In particular, the geosciences are late to the online learning game in the United States and most faculty engaged in such activities are "lone wolves" in their department operating with little knowledge of the support structures that exist in such development. Yet the most cited barriers for faculty not engaging actively in online learning is the assertion that laboratory and field experiences will be lost and thus fight engaging in this medium. However, the survey shows that faculty are discovering novel approaches to address these issues, many of which have great application to enabling geoscience programs in the United States to meet the expanding demand for geoscience degrees.