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A Data Driven Approach to Attracting Students to the Geosciences and the Mining Industry

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Securing critical minerals is a national priority which supports job growth in the mining industry. However, by 2030 there could be a shortfall of 100,000 geoscientists [1], and many geoscience departments have decreasing enrollment. Negative impressions of extractive disciplines can make attracting students to the geosciences (and the mining industry) challenging [2]. To learn how students research future careers and what career attributes they find attractive, we analyzed more than 1700 survey responses from students in introductory college courses at three institutions (73% of total responses) and in science courses at two high schools (27%). Questions were contextualized to capture the nuances of what students find attractive as they consider their college major and future career. In the context of extractive industries of mining, oil and gas, and water resources, only 18.7% of students considered “working in the mining industry” to be attractive. However, attraction to mineral exploration increased to 35% when asked in the context of society needing “Earth scientists to discover new mineral deposits and ethically develop them for greener energy sources” in a growing job market with competitive starting salaries of up to \$82k/year [3]. There are also areas of the geosciences that students find attractive, such as studying Earth (78.1%), working to solve problems in their communities (69.0%), working in a growing field (81.4%), and working in teams (71.1%), which are well aligned with opportunities in the mining industry. Geoscience departments and industry could partner to more effectively attract students through collaborative marketing about careers in the mining and related industries. We have developed freely available materials that are adaptable to many contexts to support this endeavor.

[1] Moss et al., 2025; [2] Rogers et al., 2024; [3] U.S. Bureau of Labor Statistics