

SEG 2026 Conference in Salt Lake City, United States

Outreach and Training the Workforce—New Mexico Bureau of Geology and Mineral Resource's Experience

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Since 2019, the USGS and DOE have funded several projects led by the New Mexico Bureau of Geology and Mineral Resources (NMBGMR), to examine critical minerals potential in New Mexico. Through these projects, undergraduate and graduate students at New Mexico Tech (NMT) were hired to assist with data collection/entry, sampling, and mapping. Students learned to understand the importance of critical minerals, database structure, inventory sampling, metadata, and online mapping tools. Many presentations and publications were written by students to showcase their research, and many have completed M.S. theses. In addition, we developed outreach programs to train teachers, inform legislators and staffers, industry, and educate the public. New Mexico Earth Matters is a free, semi-annual newsletter, written for New Mexicans interested in the state's water, landscapes, and earth resources. In each issue, Earth Matters takes a deeper look at an important New Mexico earth science topic using language that most readers can understand. The winter issue in 2023 examined the importance of critical minerals (https://geoinfo.nmt.edu/publications/periodicals/earthmatters/23/n1/em_v23_n1.pdf). Older issues have also examined rare earth elements (REE), (https://geoinfo.nmt.edu/publications/periodicals/earthmatters/11/n2/em_v11_n2.pdf) and potash (https://geoinfo.nmt.edu/publications/periodicals/earthmatters/8/n2/em_v8_n2.pdf). Additionally, we developed critical minerals research-based activities shared during the annual NMBGMR/NMT summer geology teacher workshop, "Rockin' Around New Mexico." The "Rockin'" teacher training is part of the NMT Master's in Science Teaching degree program or it can be taken as a professional development workshop by any New Mexico K-12 grade certified teacher. Other outreach education includes Lite Geology and Postcards from the Field. Lite Geology, an online, biannual NMBGMR education periodical written for K-12 grade teachers, contains articles, classroom activities, teachers' resources, web links, and geological and scientific events, including recent articles on the importance of critical minerals. Postcards from the Field are short descriptions of field activities from NMBGMR staff and are generally posted on the NMBGMR Facebook page (<https://www.facebook.com/NMBGMR>).