

Literature Review: Research in the career preparation of Native American engineers.

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Despite increased efforts to stimulate diverse participation in STEM education, Native Americans (NA) continue to be underrepresented in the field of engineering as students (0.6%; N=1853) and faculty (0.2%; N=68) and at a rate disproportionate to their representation in the population (Yoder, 2016). While many systemic factors contribute to the low participation of NA in STEM fields, professional and social support may increase engagement as they pursue college degrees and consider careers in higher education. This presentation offers an overview of contemporary approaches to the career preparation of Native Americans in the field of engineering. This literature review informs an NSF-funded project to explore the factors that influence Native American interests and aspirations for engineer faculty positions (EEC 1743329/1743572). We completed a thorough search using select keywords in three databases for refereed journal articles between 1990-2017. Although there are various STEM education programs for Native Americans, there are some similarities between their specific objectives. Thematic analyses focused on (a) pre-college STEM career awareness and preparation, (b) entry and retention in engineering degrees, and (c) indigenous/native identity and cross-cultural approaches to STEM education. We make recommendations for future research and practice based on trends and gaps in the literature. More research is needed about what constitutes effective NA career mentoring. Additionally, few researchers address the implications of Native Science on engineering education and career preparation.

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