

Representation of Asian Americans in Geosciences versus other STEM fields

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November 24, 2022

Abstract

Geoscience is one of the least diverse STEM fields. While gender diversity has improved over the last few decades, ethnic and racial diversity in Geoscience doctoral programs show little to no progress since 1973 [1]. At various levels of academic hiring, recruitment and under-represented minority (URM) retention, the STEM community often refers to definitions of URM as laid out by the National Science Foundation. In all STEM disciplines, Hispanics, African American and American Indian or Alaskan natives are largely under-represented relative to national demographics. However, a more granular analysis of demographic data within the Geosciences shows that Asian Americans are also under-represented and face challenges similar to other minority groups [2]. To better understand current representation of different races and ethnicities within the multitude of STEM Disciplines, we have compiled demographic data from the NSF survey of Earned Doctorates of 2019 to test whether there are differences in Asian American representation based on field of study [3]. According to the 2019 survey data, Asian Americans are significantly less represented in Geosciences compared to other STEM fields, particularly Biological and Biomedical sciences (BMS), Chemistry (CHEM), Mathematics and Computer Science (MCS), Physics (PHY) and Engineering (ENG). Asian American earned doctorates in BMS ~13%, CHEM ~11%, MCS ~14%, PHY ~12% and ENG ~17%, whereas for Geosciences that number is significantly low: ~4%. This current percentage of Asian Americans earned doctorates in the Geosciences is also lower relative to their national demographics. Importantly, Asian Americans include a broad spectrum of racial and ethnic groups which are not currently taken into consideration in these surveys. Our data analysis suggests that higher representation of Asian Americans in certain disciplines skews their overall representation within STEM, and particularly forms a misnomer in the Geosciences. Racial and ethnic representation, hence, should be re-considered based on demographic data of the related field of study, and not STEM as a whole. [1] Bernard & Cooperdock, 2018, Nature Geoscience [2] Ibarra et al., 2018, AGU Fall Meeting 2018 [3] <https://ncses.nsf.gov/pubs/nsf21308/data-tables>

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