



EGUsphere, referee comment RC1
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Comment on egusphere-2022-116

Anonymous Referee #1

Referee comment on "GC Insights: Diversifying the geosciences in higher education: a manifesto for change" by Caitlyn A. Hall et al., EGU sphere,
<https://doi.org/10.5194/egusphere-2022-116-RC1>, 2022

General comments:

While the abstract is clear and concise, it leads the reader to expect a more robust discussion about specific recommendations for increasing diversity within geoscience academic programs. However, the article is scattered and attempts to cover too much ground in the limited amount of space allowed, especially with regards to couching the recommendations within the context of bias, racism, ethics, and barriers to inclusion. As a result, the recommendations are not as strong and well-formed as they could be, and the depth of discussion needed for explaining clearly how those recommendations fit within and solve the issues of bias, racism, ethics, and barriers to inclusion is lacking. Furthermore, the strength of the recommendations is significantly diminished by the adversarial tenor of the article and the dearth of robust support for the assertions cited by the authors as the causes for low diversity within geoscience academic programs. While diversity continues to be a long-standing issue for the geosciences, the drivers are more complex than what the authors assert.

Overall, the strength of the article is in the recommendations for improving higher education by:

- advocating for institutional change through investing in the recruitment and retention of educators and learners from under-represented communities.
- incorporating diverse perspectives and authors in curricula by prioritizing the use of a wide array of publications and information sources
- including the historical, cultural, and sociopolitical contexts of geoscience information discovery in curricula.
- connecting geoscience principles to more geographically diverse locations, especially more local and regional sites across the world.
- implementing different communication styles that improve student engagement and learning and empower learner transformation and agency.

Development of operational approaches to these recommendations would strengthen the article as would inclusion of examples that have shown measurable improvements in increasing diversity, equity and inclusion within geoscience academic programs.

Specific comments:

In the Introduction, the authors assert that the geosciences is “entangled with prejudiced practices, making it an inequitable and exclusive field” but do not provide any supporting references, and in the next sentence, the reference to the Marin-Spiotta et al, 2020 is not included in the list of references.

In the Champion Meaningful Transformation section, the arguments are scattered over two paragraphs between a brief overview of the need to build community relationships, ethics, and the need to recruit and retain educators and learners from underserved communities. This section would be strengthened by better organization of the content and a deeper discussion about the key agents, such as ethics training, recruitment and retention of educators and learners from underserved communities, and frameworks for building and maintaining community relationships. References to programs and initiatives that have shown measurable change would help strengthen these recommendations as well.

In the discussion about diversification of information sources, the authors discuss search engine use and the prioritization of high-impact journal articles over other types of articles. The authors fail to discuss the self-customizing algorithms of search engines that show search results tailored to the user’s browsing behavior, including the country and language of the country in which the user resides. This algorithmic bias is inherent to search engine algorithms and at its best, attempts to help a user find the information they are seeking quickly. The authors do not discuss this algorithmic bias, nor offer any solutions to overcome this bias. Instead, they briefly mention SCImago, a database that only covers journals in the Scopus® database, and of the 240 countries covered by this database, U.S. publications represent 21% of the database contents. While this is a helpful site, recommendations on how to use browsers to find less visible publications, and discussion of the necessary skills for critically evaluating information sources would strengthen this section of the article.

The section on integrating historical content, citation of Stefanoudis et al., 2021 does not bring to light the long list of recommendations put forth in that article for including local researchers, but only highlights that local researchers are excluded by many scientists today, thus excluding the important actionable steps that Stefanoudis et al., 2021 detail.

The section on connecting across geographies could be better developed by including a discussion about including local and regional context relative to the location of the

academic department. By including local sites adjacent to institution's location, educators and learners would build community within the areas where they work and learn and would begin to integrate the other recommendations put forth in this article.