

# URGE

## Unlearning Racism in Geoscience

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This is what was developed by the AGU Earth and Planetary Surface Processes Pod on Policies for Working with Communities of Color as well as plans for improved processes and/or needed resources. Each section is signed by those who contributed to it.

### **1. Audit of previous interactions with communities of color at our organization:**

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The idea behind this week's deliverable was to understand and audit the present state of the collaborations between the communities of color and the scientists in our community. Most of the ECRs thinking about this question in our pod didn't have much practical experience to bring to the table. So we decided to audit the works that the EPSP community has done over the years in this respect as a whole, and, for this, we decided to delve into the past literature in some of the journals we publish in, and also the sessions and abstracts which we have convened and presented in yesteryears' AGU. This is also quite useful to gauge the state of our scientific community, on top of our personal experiences.

### **Auditing publications**

The journals that were used for this are –

- Nature Geoscience
- Geophysical Research Letters
- GSA Bulletin
- Geology
- Earth Surface Processes and Landforms
- Journal of Geophysical Research - Earth Surface

For each of these journals, we searched keywords like Indigenous, Indigenous communities, Aboriginals and First Nations, for a time range of either 1990-2021 or 2000-2021, in Web of Science and/or the journal's webpage, for these words occurring anywhere. Once the entries were indexed, we went through a quick search of the same keywords in the texts of the publications because of the presence of false positives, where the papers were actually talking about indigenous biological species instead of Indigenous peoples. There were also some

papers where Indigenous peoples or Indigenous knowledge only appear flittingly, as a courtesy, but there is no indication that the scientists were actually working with them or studying them. For example, we did not include papers that only mention access to Indigenous People's land in the Acknowledgements section, or papers that refer to an Indigenous community only in the context that they were impacted from a natural disaster or that they once inhabited the study area, but Indigenous knowledge did not contribute to the study. Once these papers were weeded out, we built a database of the remaining publications working with/on communities of color, and the results are summarized in the plots below. A Google form, linked to a Google sheet was used to build this database.

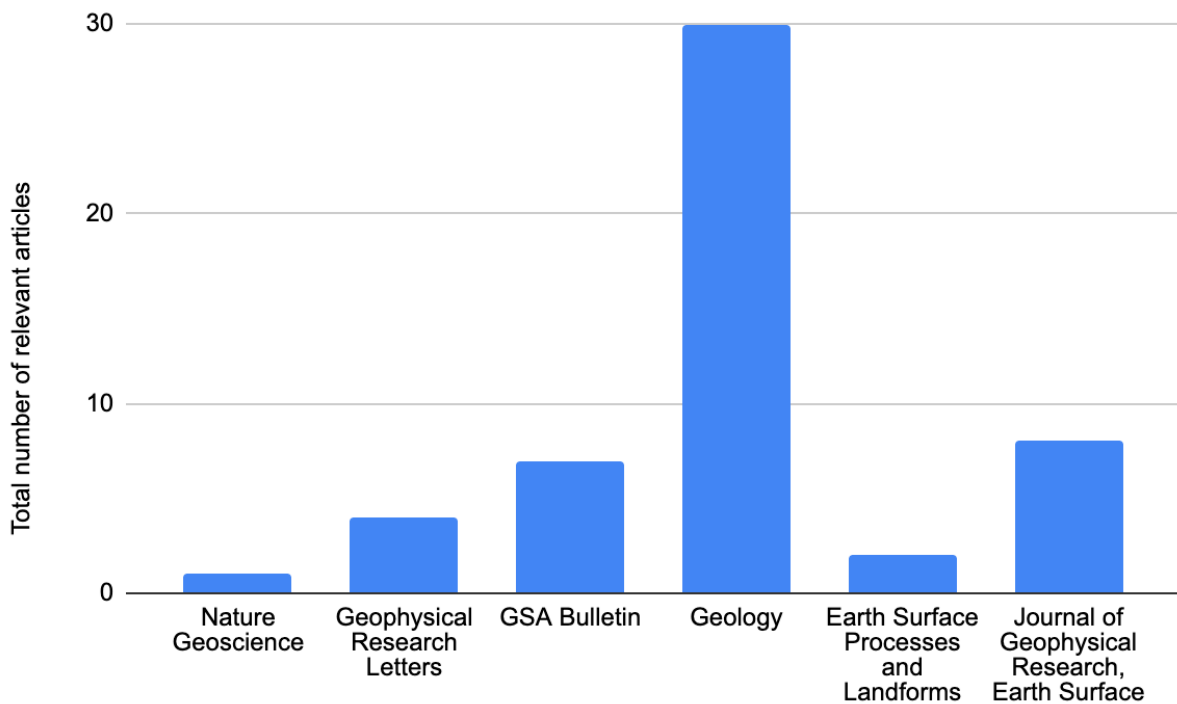
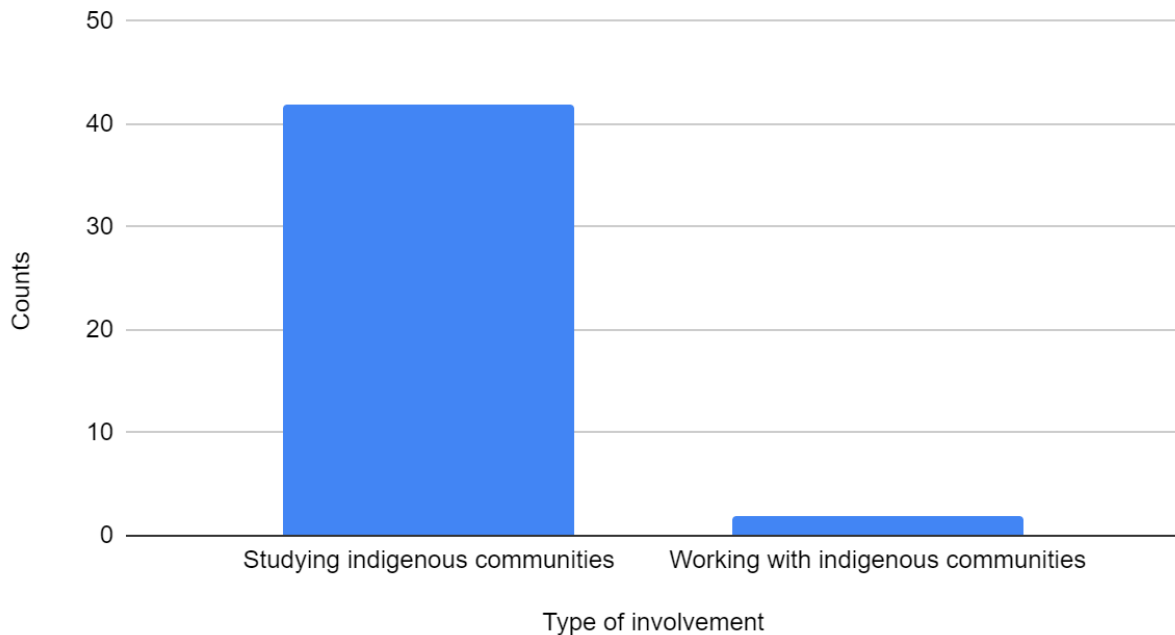


Fig 1. A plot of the number of publications for the keywords 'Indigenous', 'Indigenous communities', 'Aboriginals', 'First Nation' in the journals mentioned.

## Counts vs Type of involvement



We also formulated some questions to further understand whether these projects were actually working with communities of color, and we found that only a handful of these actually passed those criteria. The questions are as follows-

- Were the articles generally focused on studying indigenous communities or working with them?
- Did the studies engage communities in designing the research questions and solutions?
- Were the studies focused on communities achieving their goals?
- Did the studies acknowledge multiple ways of knowing and/or weaving together traditional knowledge and western science?
- If samples and/or knowledge were collected, was it stored?

We found a number of articles on Arctic science that discussed Indigenous communities or advocated for working with Indigenous communities to advance science and manage climate-change-induced landscape changes. However, very few studies actually engaged Indigenous communities in the research design and outcomes. Even studies that interview Indigenous people were rare (e.g. Hinkel et al., 2007, <https://doi.org/10.1029/2006JF000584>). Overlooking Indigenous knowledge is a loss for the geomorphic community. We remain hopeful that this will change in light of overview papers like that of Koppes and King (2020,

<https://doi.org/10.1029/2020JF005588>) that actually argue for inclusion of indigenous people and indigenous science into western science.

## Auditing AGU abstracts

### **Methodology**

#### *Data*

The American Geophysical Union (AGU) annual Fall Meeting abstracts and sessions are indexed and searchable from 2014 - present (<https://agu.confex.com/agu/fm###/meetingapp.cgi>, where ## is the last two digits of the year). By clicking "Search", the left sidebar shows the total amount of abstracts and sessions. Below, we show the total abstracts and sessions for all AGU sections and specifically for the Earth and Planetary Surface Processes (EPSP).

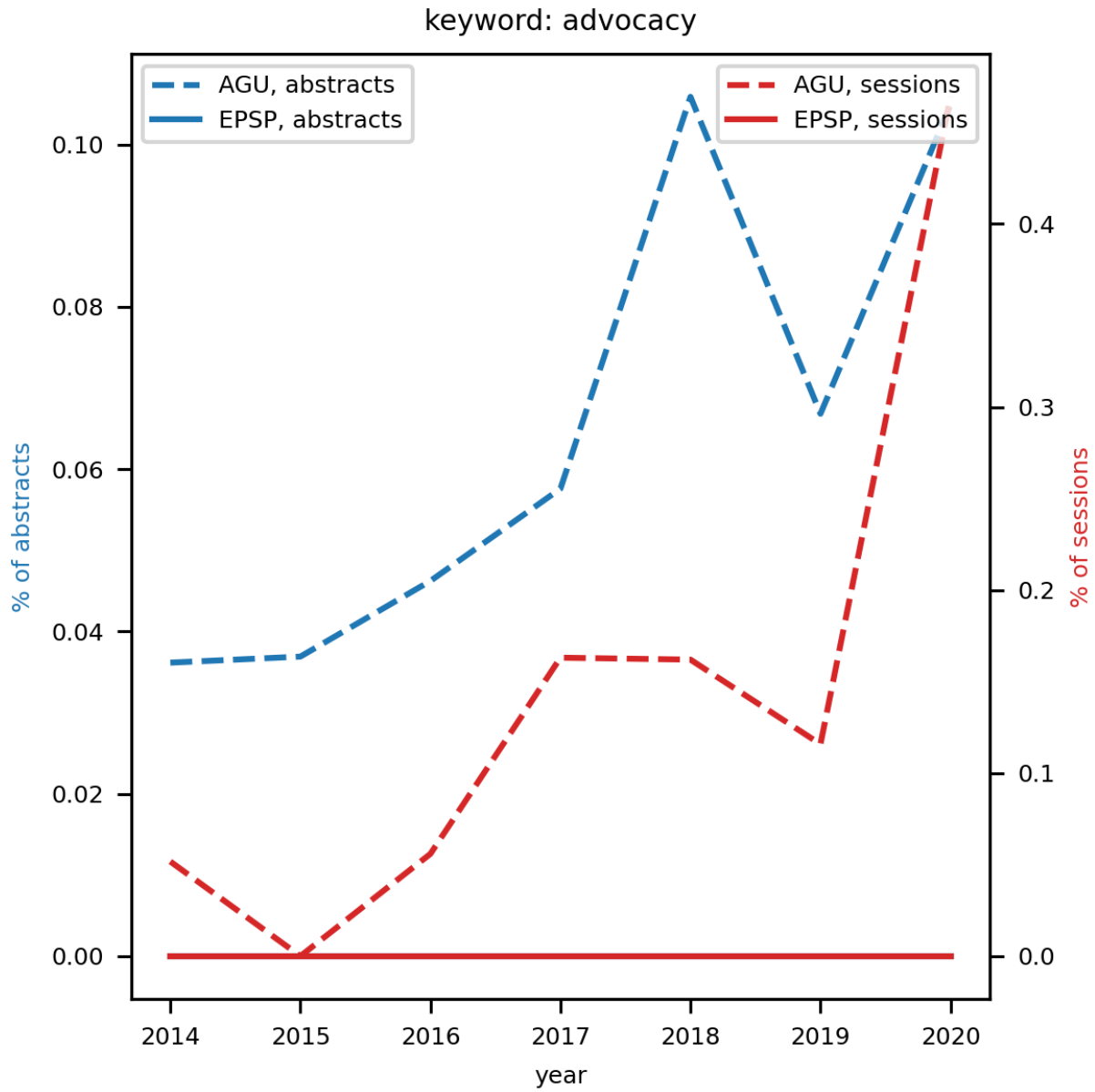
Year	EPSP Abstracts	AGU Abstracts	EPSP Sessions	AGU Sessions
2014	859	22126	66	1935
2015	734	21680	48	1757
2016	863	21635	49	1790
2017	918	20837	63	1840
2018	907	24558	41	1852
2019	903	25442	57	2591
2020	727	20024	69	1704

#### *Keywords*

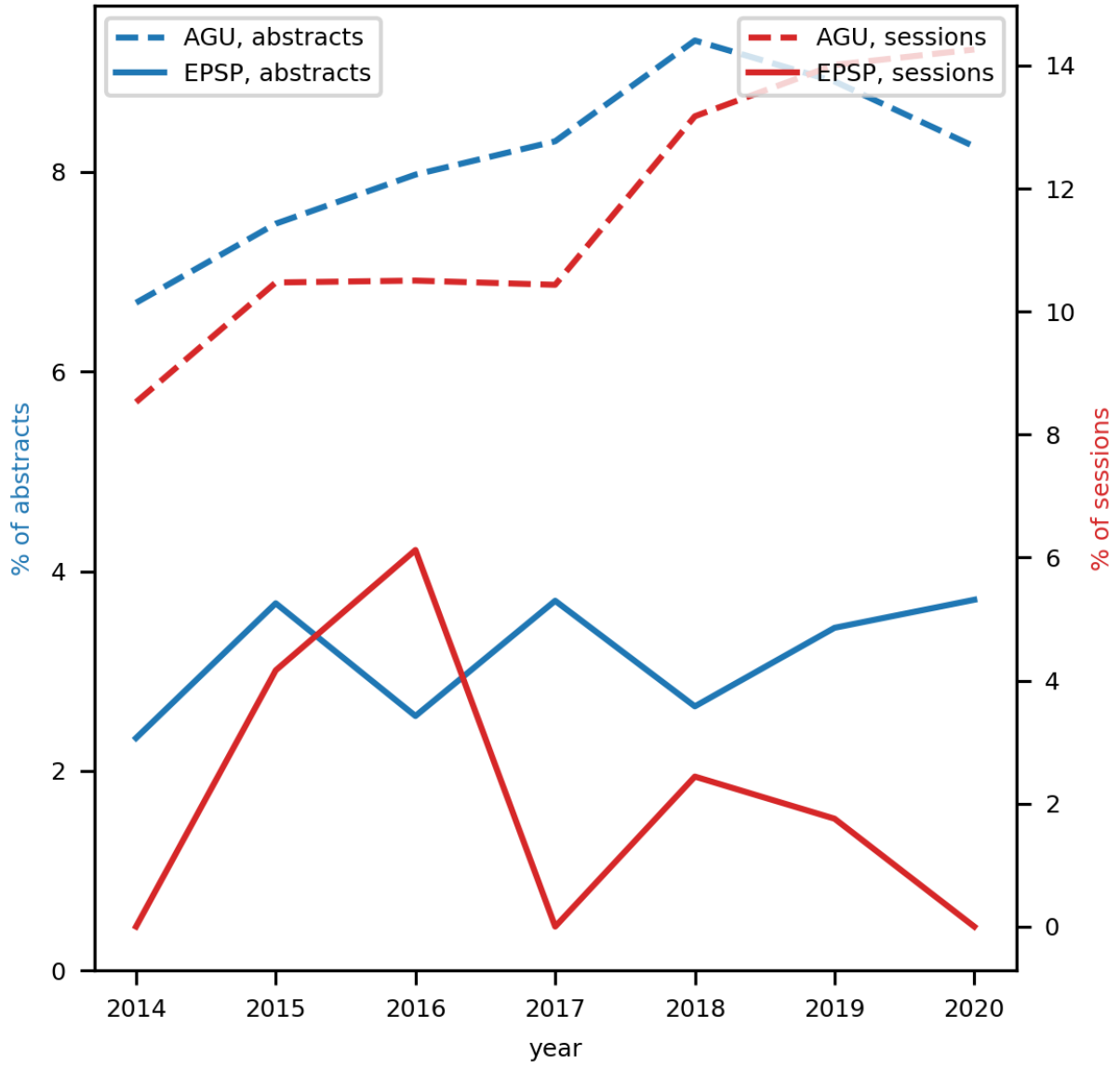
In order to quantify the interest that our community has on research that builds partnerships with indigenous communities, we counted the number of search results for different keywords. We used the following search keywords: indigenous, community partnership, justice, advocacy, "indigenous communities", tribal. We kept track of the number of abstracts and sessions that include these keywords (queries title, abstract, and session description) for both EPSP and AGU. For the EPSP results, we only counted abstracts and sessions that had EPSP listed as their primary section.

## Results

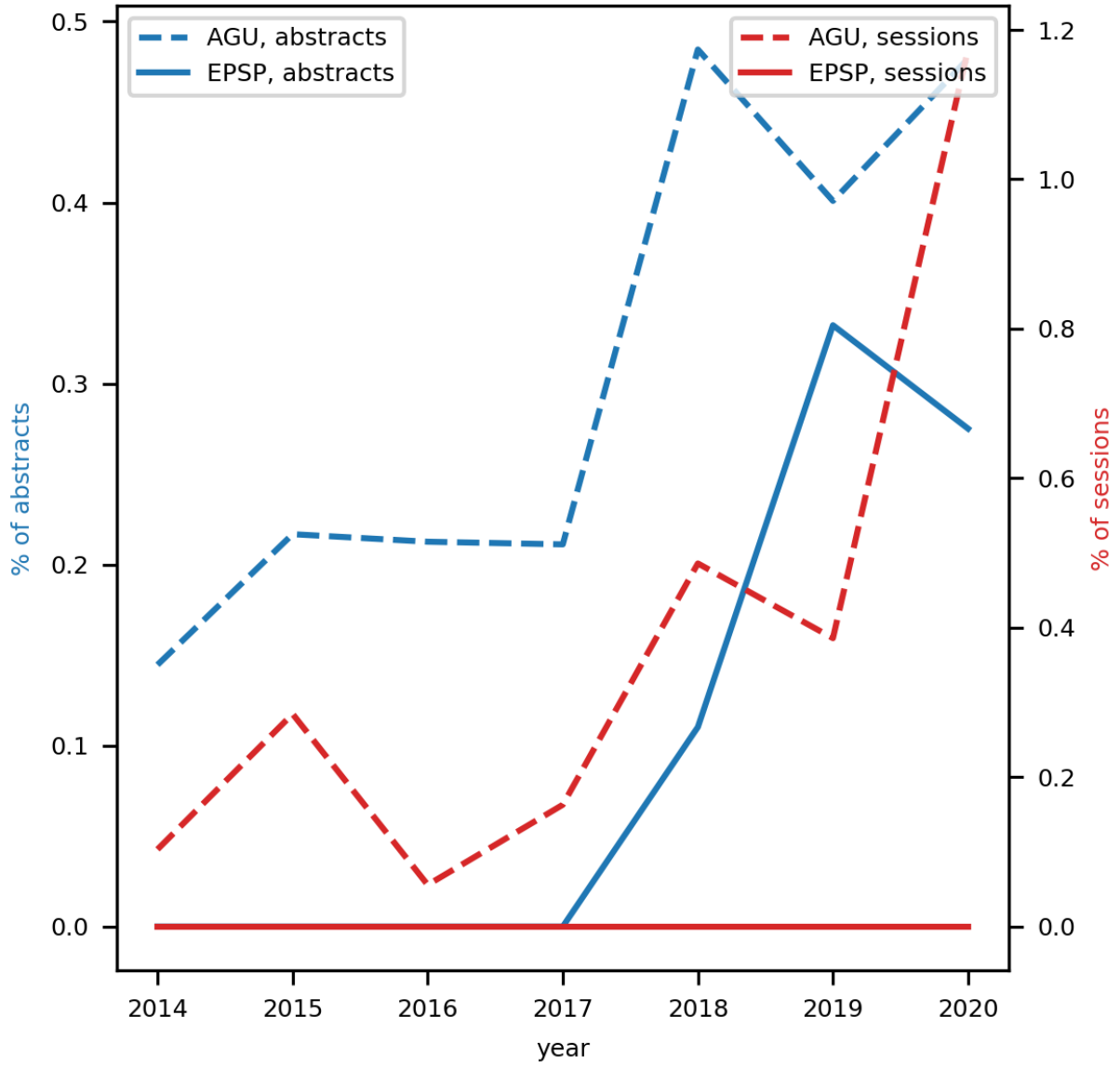
For each keyword, we show the percentage of abstracts out of the total number of abstracts from AGU and the total number of abstracts in the EPSP section. We do the same for sessions.



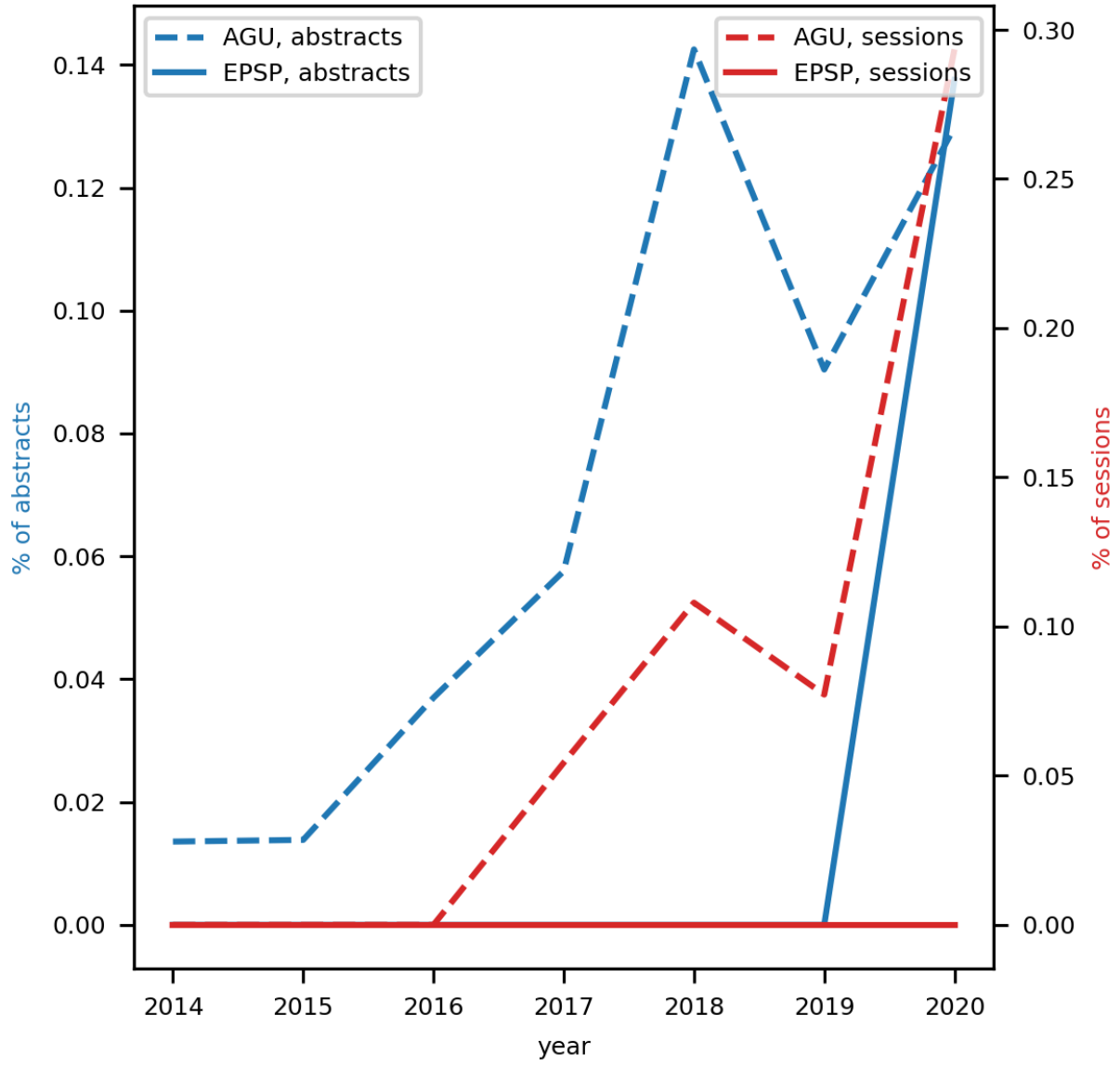
keyword: community partnership



keyword: indigenous

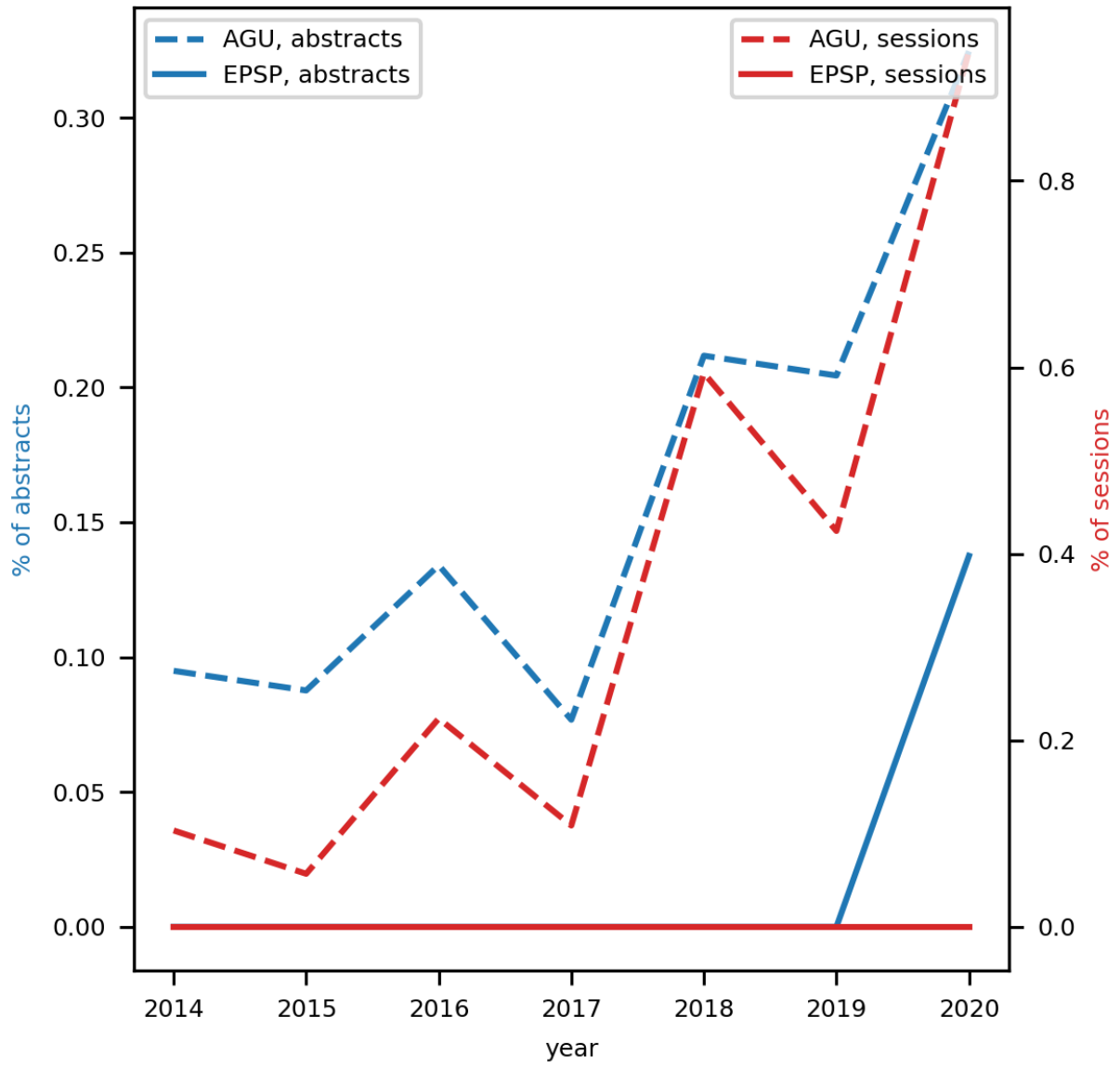


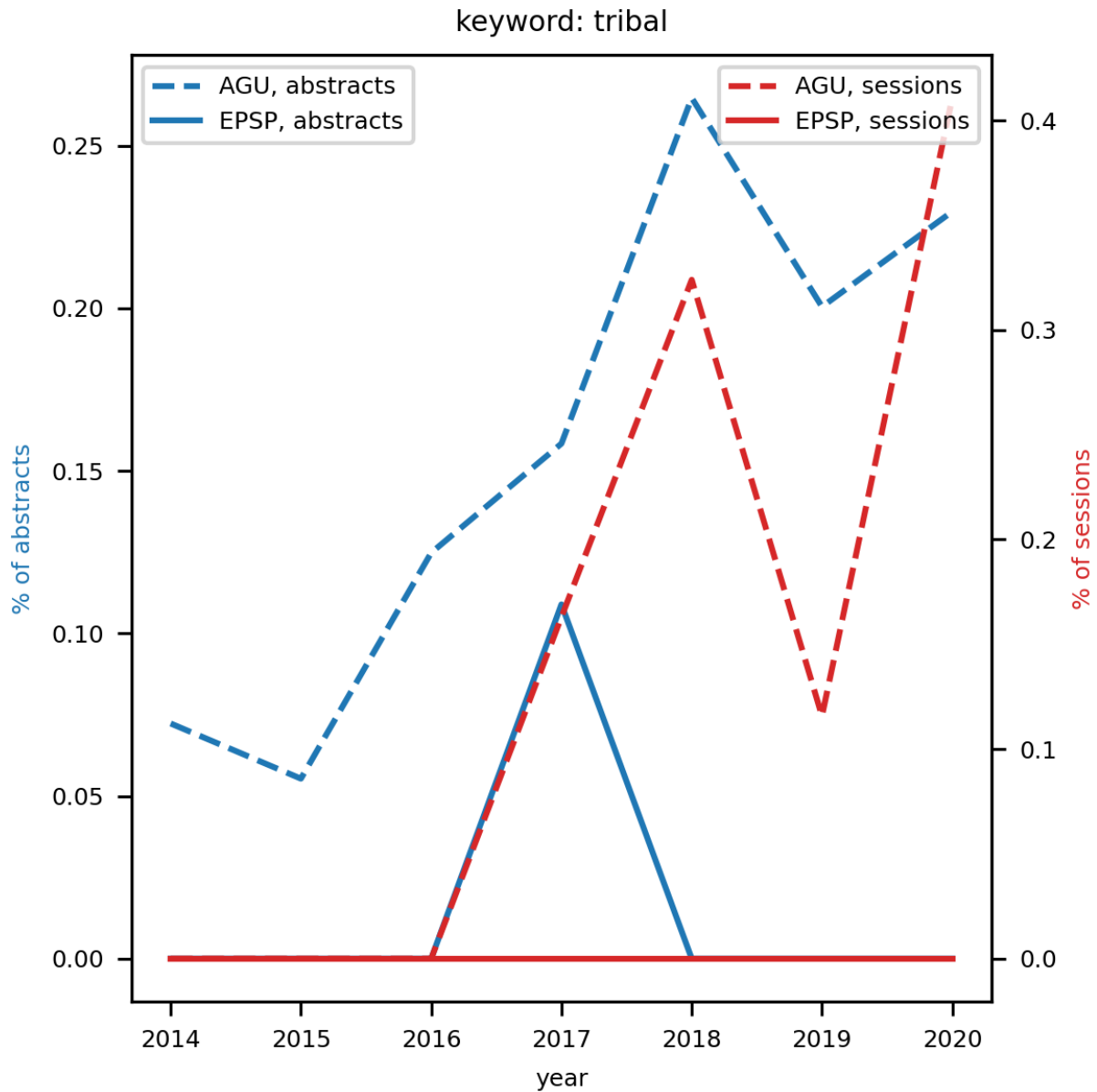
keyword: "indigenous communities"





keyword: justice





## Discussion

The overall trend of each keyword between 2014 and 2020 is an increase in search results for all of AGU; however, this trend is not mirrored in EPSP. In addition, EPSP has a smaller percentage of search results for each keyword compared to all of AGU. Most of the results fall within a few AGU sections. The vast majority of the search results for “justice”, “advocacy”, “indigenous communities”, and “tribal” are listed in the sections: Public Affairs (2014-2019), Science and Society (2020), Education, and Global Environmental Change (only for “Justice”).

### *False Positives*

'Community Partnership' yielded the most search results; however, there are possibilities that some of these results are false negatives. This keyword (and indigenous) has potential for searching for abstracts that are about ecosystem communities and other types of partnerships (e.g. "the data science community").

### *Recommendations*

We recommend the following steps, to demonstrate that strong partnerships with the communities affected by topics of scientific interest, as well as research that incorporates the principles of anti-racism, equity, and justice, are priorities to the Earth and Planetary Science section of AGU. 1) When soliciting session proposals, include a statement encouraging sessions that involve community partnerships and social justice at varying degrees. Likewise, encourage session conveners to include a similar statement when they put out a "call for abstracts." 2) Consider ways for authors to self-identify their abstract as involving local, indigenous, or marginalized communities, or for session conveners to indicate abstracts/presentations which display these characteristics (perhaps in the form of a check-all-that-apply question on the abstract submission form). 3) Avoid incentivizing tokenism, helicopter research, and unsubstantiated claims of community partnerships by including these under the definition of scientific misconduct, providing guidance to session conveners on verifying author engagement if it is unclear from the abstract, and/or performing an audit of a subset of abstracts. 4) Strengthen existing partnerships with AGU sections which have demonstrated substantial progress on hosting sessions and soliciting abstracts which reflect strong community partnerships (Science and Society, Education, and Global Environmental Change) in order to gather suggestions for improvement in EPSP and offer a greater number of cross-listed and interdisciplinary sessions. We hope these recommendations will encourage researchers and students alike to share intersectional and interdisciplinary efforts for which an appropriate platform has yet to be provided, give recognition to individuals and groups devoting substantial time and effort to initiatives identified by AGU as priorities, and move the geoscience community towards a more equitable future.

## **2. Podlet 1 Resources & Recommendations**

Outlined below are the resources and recommendations put forth by the EPSP URGE podlet 1. These are non-exhaustive lists and are meant to be a starting point for the forthcoming EPSP DEI committee.

### **Individual Best Practices for Working with Communities of Color**

*This is not a complete list, but rather a starting point that can be used by the forthcoming EPSP DEI committee. Ideally, a list similar to this will be available on the EPSP website.*

- Incorporate communities of color throughout the proposal writing process rather than approaching them at the end.
  - Establish an equitable relationship
- Approach interactions with humility, respect, and an open heart.
- Try to become familiar with expectations and customs of the community with whom you are engaging; the best practice may be different from your own experience.
- Try to identify a common experience (e.g., playing softball, card games, share food etc.).
- Include community members and local scientists/students in research
  - Hire locals as guides/field assistants.
  - Provide data to the community once it is collected.
  - Include community members in data analysis.
  - Include guides, local researchers/students as co-authors or in acknowledgments for any presentations/publications.
- Ask communities for their input on research, but acknowledge that they do not have an obligation to share their knowledge
  - Field locations beneficial to the study (e.g. where river banks were eroding quickly or slowly or what certain environments on the floodplain were like).
  - Observational data (either current or historical) pertinent to the study
- Provide additional compensation for translators, whether they be from the community or colleagues (e.g., students, postdocs, etc.)
- Ask for permission before taking pictures of community members.

## What Can We Do Better? Ideas for the Future

### AGU Fall Meeting

- Environmental justice session in EPSP with a panel format
  - Potentially paired with a union session
- Co-production of knowledge with indigenous communities
- EPSP program committee initiative - encourage session leaders to include something in the session abstract about encouraging discussions about outreach/education/DEI in the presentations.
- Encourage all participants to have land recognition statements where appropriate.
- Town Hall on DEI/EJ issues in EPSP
- Give presenters extra time (2 minutes) to present on DEI/EJ as part of their talk
- Require at least one DEI/EJ presentation in each session
- Sharp Lecture that includes DEI/EJ
  - Either reward those doing DEI/EJ research on the same level as those doing non-applied research and/or require the recipients of section awards to speak on the DEI/EJ effort they are a part of.

## Potential DEI Committee Projects

- Develop a webpage with tools for how to develop land recognition statements
  - <https://native-land.ca/>
  - <https://usdac.us/nativeland>
  - <https://americanindiansinchildrensliterature.blogspot.com/2019/03/are-you-planning-to-do-land.html>
  - Develop a stock statement so people can insert their specific details
- Curate best practices/resources that are needed to improve the process for planning ahead and working with communities of color (housed on website).
- Develop a yearly DEI panel at the AGU Fall Meeting that focuses on a different aspect of DEI each year.
- Work with the EPSP awards committee -- we need to value DEI/EJ research/outreach equally as other types of research when considering G.K. Gilbert & Luna B. Leopold Awards.
  - Assess excellence in the DEI/EJ space that is equal to the way we assess excellence in discovery-based science.
  - As a first step, we suggest rewriting the G.K. Gilbert & Luna B. Leopold award citations to include the explicit evaluation of scholarly work in EPSP DEI/EJ work.
    - Similar to the Hydrology section's Early Career Award that states (emphasis added), "The Hydrologic Sciences Early Career Award recognizes outstanding contributions to the Science of Hydrology, education, or societal impacts by a scientist at his or her early career stage. This prestigious award acknowledges early career prominence and promise of continued contributions to hydrologic science."
    - Potential wording could be, "The \*\*\* award will consider excellence in discovery-based science, solutions-based science, and DEI/EJ-based science in the field of Earth and Planetary Surface Processes."

### Signatures of Approval by Podlet 1

Kate Leary, Alison Duvall, Anastasia Piliouras, Colin Phillips, Noah Snyder, Kimberly Hill, Lisa Tranel, Katherine Kravitz, Andrew Moodie, Brandee Carlson, Cindy Palinkas, Claire Masteller, Julia Carr

## 3. Podlet 2 Resources & Recommendations

### Recommendations to AGU EPSP DEI Committee (? or URGE folks, etc.):

1. Organize a list of resources that already exist for working with communities of color (i.e. websites with information on resources available from scientific organizations like

- AGU, GSA, etc.) and share on AGU central website. This could be an expanded list of what already exists.
- Example additions: NSF link for principles for conducting research in the Arctic intended as a template for EPSP in general (unable to find similar resources for other NSF EAR directorates):  
<https://www.nsf.gov/geo/opp/arctic/conduct.jsp>
2. Develop a list of resources that might be EPSP specific, which could be posted online at EPSP website and broadcast to the community through Gilbert Club.
    - Example additions: EPSP link under “Resources” based on EPSP Connects 2020 panel discussion, “Intersection of Environmental Justice and Geomorphology.”
      - ◆ <https://connect.agu.org/epsp/links-resources/ej>
    - Teaching
      - ◆ <https://www.canr.msu.edu/resources/honoring-the-whole-student>
    - Specific Topics - Water
      - ◆ <https://www.mdpi.com/2073-4441/8/8/350/htm>
      - ◆ <https://journals.sagepub.com/doi/10.1177/11771180120952896>
    - Land Acknowledgements
      - ◆ <https://nativegov.org/a-guide-to-indigenous-land-acknowledgment/>
      - ◆ <https://hackthegates.org/wp-content/uploads/2020/08/Redshirt->
      - ◆ [A guide to Indigenous land acknowledgment - Native Governance Center](#)
  3. Develop and broadcast quantifiable metrics to access work faculty have done on DEI and specifically working with partners in communities of color. Might be something that the EPSP DEI committee could take on development.
  4. Broadcast to the community the development and location of these resources at an EPSP specific town hall meeting on URGE. At mtg we could possibly present a deliverable that broadcasts somehow (document or other method available on EPSP website, which already exists but could be expanded) what is harmful in practices that are common now and a list of things that are preventing people from moving forward right now (possibly containing hierarchical structure).
    - Places to announce or update DEI activities in EPSP community: Town Halls, Gilbert Club, lightning talks, special sessions, panel or discussion portion of sessions...
    - Barriers - (think about EPSP venues where there could be short informal awareness-raising, “food-for-thought” discussions); possible topics: “feeling the URGEncy” (personal/internal) (addressing/discussing why folks might not feel there is an urgency to address these issues in research and try to answer with consequences if we don’t address them); external barriers (power structures/dynamics in academia) - too much to say, but might be useful to raise topics that people discuss in private anyway; not knowing where, when or how to start engaging with communities, i.e. before one even has a project? And what about funding limitations (DEI committee could start a “Best Practices Guide” for

academic researchers based on requests for input from the community); other external barrier is at the institutional level - fear of losing donor support - our messaging needs to reach through the scientific community that is AGU and through to institutions and agencies that incoming classes of students are seeking a DEI educational environment.

5. Discuss with Gilbert Club the idea of having a presenter in the near future on Environmental Justice in EPSP Science.

### **Recommendations to EPSP Program Committee:**

1. Promote continued delegation of additional 3-4 minutes of presentation time at AGU for oral presentations that discuss aspects of work with a DEI broader impact, including experiences/outcomes of working with communities of color. Collaborate with the Program Committee to make this happen and have it widely broadcast.
  - Program committee could work with the DEI committee on developing session proposal language either general for all sessions or that can be tailored to individual sessions that encourages sincere attempts to bring in DEI in some form and possibly contacts with whom the language could be reviewed or discussed.
2. Promote AGU sessions on Environmental Justice (possibly also Union sessions, in addition to EPSP sessions). These sessions might be organized with 2 or so invited speakers followed by panel discussion. Could we organize these such that there are not competing EPSP sessions? (Could EPSP fund travel of invited speakers to these sessions?)
3. Suggest to the EPSP award committee that work on DEI initiatives and community building efforts should be tied to all EPSP awards (it is currently only tied to Marguerite T. Williams Award).
  - The DEI committee could coordinate input from the community on relevant referrals to completed projects and publications and contact the researchers to find out what they did, what worked well, etc. to establish basis for award criteria, or possibly just have similarly informed members on the Awards Committees.

### **Signatures of Approval by Podlet 2:**

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