



21 January 2023

Dear Members of the IGS,

In 2022, the IGS Council approved a list of actions (below) recommended in the Final Report of the Ad-hoc Committee on Diversity and Inclusion (ADI). The ADI was in place from 2020 to 2022. Following the conclusion of the ADI's work, Council approved the formation of a new standing committee—the Membership Committee (<https://www.igsoc.org/about/organisation>)—whose mandate includes the implementation of the approved action items. Other actions recommended in the ADI Report are actively under discussion.

Now that we have reached this stage, we would like to share the full ADI Report (attached) with the IGS membership. I would like to thank the ADI members for their passionate and persistent work, their patience with the pace of progress, and their vision for our Society.

Ad-hoc Committee on Diversity and Inclusion (complete list, with some members serving at different times):

Nanna Karlsson, Chair (Denmark)
Alan Rempel, Chair (Canada/US)
Francisca Bown (Chile)
Anna Crawford (US/UK)
Jing Gao (China/China)
Dambaru Ballab Kattel (Nepal/China)
Julie Palais (USA/USA)
Lauren Vargo (USA/New Zealand)
Eleanor Bash (USA/Canada)

I would also like to thank the Membership Committee (<https://www.igsoc.org/about/organisation/membership-committee>) for leading us in tangible progress on issues of diversity and inclusion.

Best wishes,

Gwenn E. Flowers

President, International Glaciological Society
Professor, Department of Earth Sciences, Simon Fraser University
8888 University Drive, Burnaby, BC V5A 1S6 CANADA
gflowers@sfu.ca, +1 778 782 6638, <http://www.sfu.ca/earth-sciences/people/faculty/flowers.html>

ADI Action Items approved by the IGS Council, 2022

Communication:

1. The IGS shall review its correspondence and documentation and make an extra effort to be considerate of all members in order to make its communications as inclusive and gender-neutral as possible, as well as accessible to people for whom English is not their first language.
2. The IGS shall strive to adopt inclusive language use surrounding issues such as gender, disability, chronic illness and mental health, initially following the EGU guide:
<https://blogs.egu.eu/geolog/2021/01/13/accessibility-at-egu-promoting-inclusive-language-an-incompleteguide-2/>.
3. IGS publications shall strive to use names for geographical locations that respect and honour local indigenous traditions.

Committees:

4. IGS Council and committees shall maintain broad gender representation and balance, reflective of the glaciological community, without placing undue service burdens on individuals.
5. The Nominations Committee shall ensure that the Council slate includes at least one early-career representative, preferably a member of the IGS EGG (Early-Career Glaciologists Group).
6. One member of the Membership Committee shall serve as an ex-officio member of the Nominations Committee.
7. Every effort shall be made to include at least one early-career researcher on all IGS standing committees.
8. One member of the Membership Committee shall serve as an ex-officio member of the Awards Committee.

Awards:

9. The Early Career Scientist (ECS) Award shall be made on an annual basis (increased frequency from biennial)
10. Eligibility for the Early Career Scientist (ECS) Award should be changed from “the nominee must be a member of the IGS at the time of nomination” to “the nominee should preferably be a member of the IGS at the time of nomination”.
11. Eligibility for Honorary Membership should be changed from “the nominee must be a member of the IGS” to “the nominee should preferably be a member of the IGS at the time of nomination”.
12. Some form of mid-career award should be created, independent of other action on awards.

Progress report from Alan Rempel, Chair of the IGS Membership Committee:

The Membership Committee is working in consultation with the Awards Committee on criteria for the new mid-career award (item 12), which will be incorporated within a formal proposal before the next Council meeting. In support of communication action items (1-3), the Membership Committee is also exploring the logistics of inclusive language training that can be made available to IGS leadership and committee members. To assess progress in promoting diversity within our community, as reflected in part by item 4, regular survey questions shall be made available during membership renewal — with an anticipated roll-out prior to 2024. Further, in response to member feedback, the Membership Committee is actively pursuing broad guidance drawn from a number of precedents (involving institutes and universities, as well as global and local organizations in both the private and government sectors) to develop provisions needed to address the handling of complaints against members who face allegations of failing in their commitment to the IGS core values and/or scientific code of conduct.

ADI Action Items under discussion by the IGS Council, 2023

1. Proposal for new mid-career award to be brought forward by the Membership Committee

ADI Action Items requiring further discussion

2. Self-nomination for IGS awards: <https://www.igsoc.org/about/awards>
3. Further revision of criteria for Richardson (<https://www.igsoc.org/about/awards/richardson-medal>) and Seligman (<https://www.igsoc.org/about/awards/seligman-crystal>) Awards
4. Creation of a new award explicitly dedicated to teams/groups (note that teams/groups are currently eligible for Richardson and Seligman Awards)

Although much discussion on the topic of awards remains, progress has been occurring behind the scenes. In 2022, the IGS Awards Committee (<https://www.igsoc.org/about/organisation/awards-committee>) developed canvassing materials for the awards and took a systematic approach to soliciting nominations. In 2023 we intend to establish a separate canvassing committee to assist with the solicitation of nominations. The Awards Committee also developed evaluation rubrics for the awards that are being tested this year. After the current awards cycle is complete, they will be revising, as needed, the evaluation rubrics, the canvassing materials/approach and the guidelines for awards published on the IGS website, as well as working on other ways to make the nomination and adjudication processes as clear and transparent as possible.

International Glaciological Society (IGS) Ad-hoc Committee - Actions on Diversity & Inclusivity

Report to Council

Acknowledgements

Thanks go out to everyone on the Diversity and Inclusion (D&I) Committee¹ for their help in developing this, first ever, Diversity and Inclusion Plan of the International Glaciological Society (IGS). The D&I committee was formed on Nov. 23, 2020 after a call went out to members to volunteer to serve on an ad-hoc committee for action on diversity and inclusion. The IGS President (until recently, Francisco Navarro, Spain; currently Gwenn Flowers, Canada) and Secretary General (currently Magnus Magnusson) serve as Ex-Officio members of all IGS committees. The Committee also wants to thank the IGS Council for taking the initiative to form the Committee. We strongly recommend that this work be formalised under a permanent committee going forward.

Executive Summary

In a recent survey of virtual Global Seminar attendees, responses overwhelmingly indicated that the IGS community is welcoming, but has a long way to go toward being a truly inclusive and diverse community.

There is certainly a willingness from within the community to change [its diversity] but I think there is a lot of work to be done so most scientists from a minority background feel included.

The International Glaciological Society is working to improve its diversity and inclusivity practises, as well as to dismantle all barriers that create impediments to participation of both members and non-members, in activities of the Society. This is necessary not only for the future

¹ Members of the committee and their country of origin/work include Nanna Karlsson, Chair (Denmark/Denmark); Francisca Bown (Chile/Chile); Anna Crawford (US/UK); Jing Gao (China/China); Dambaru Ballab Kattel (Nepal/China); Julie Palais (USA/USA); Alan Rempel (Canada/USA); Lauren Vargo (USA/New Zealand) and Eleanor Bash (USA/Canada).

of the organisation and the success of its members, but also because it is the right thing to do. The formation of an ad-hoc Committee on Diversity and Inclusion (hereafter “the Committee”), is a step toward this goal. The Committee was formed to generate a list of actions aimed at “enacting best practises regarding diversity and inclusivity within all IGS activities and initiatives”, helping members to “integrate these practises into their own research, fieldwork and communication efforts” and increasing “diversity and inclusivity in the IGS membership base”.

Diversity and Inclusion Plan

The Committee developed a draft Diversity and Inclusion Plan that was circulated to the IGS Council in April 2021. After revision it was resubmitted to Council in July 2021, and is currently under review. This plan includes short term goals and actions to direct the efforts of the IGS as it works towards these objectives. The objectives, and associated goals and actions, focus on:

- Improving diversity and inclusion within the IGS community and within IGS leadership,
- The inclusion of early-career researchers within all IGS structures,
- The use of respectful and inclusive language in IGS communications and materials, and
- Respect and professionalism in the peer-review process of the IGS journals.

With regard to this plan, we recommend that it be formally accepted by the IGS Council in early 2022. The committee also recommends a meeting between Council and the Committee, or a subset of these two groups, to discuss the work to meet these objectives and any corresponding deadlines.

Honours Response

The initial draft Plan that was circulated to IGS Council included a set of recommendations related to restructuring awards within IGS. This particular point received significant attention in the comments from Council and was ultimately compiled into a separate document, submitted to Council in September 2021.

This document makes three recommendations for changes to the award structure as follows:

- The criteria for the Seligman Crystal be revised to holistically and transparently consider an individual’s scholarly and non-scholarly contributions to the community
- To create a new mid-career award that could recognize individuals or collaborative teams that have influenced the field of glaciology through scientific output and non-scholarly actions.
- To appoint future members of the IGS Awards Committee transparently and with a goal of better representing the diversity of the larger IGS community.

Shortly after the submission of this document, the topic of honours within the cryosphere community gained international attention when the American Geophysical Union (AGU) Cryosphere Division Fellow Selection Committee declined to nominate any fellows due to the lack of diversity in the pool. The discussion surrounding this decision further strengthened the position of the IGS D&I Committee in recommending changes to the IGS awards.

In addition to the document submitted to Council, the IGS D&I Committee further recommends that the IGS Awards Committee consider potential nominees for IGS honours and connect with the close colleagues of these nominees to discuss the individual's potential candidature and plan a nomination package. Furthermore, we recommend that the Awards Committee consider the amount of work required for nomination packages, with the aim of decreasing the workload associated with nominating.

Community Feedback

In May 2021 IGS members put forward their concerns and ideas for improving diversity and inclusion within IGS. This feedback was synthesised to produce a set of recommendations for long term goals and efforts to improve diversity and inclusion within IGS (in contrast to the more immediate recommendations of the plan submitted in July 2021). Several themes emerged in the community feedback, which are used to organise the recommended actions:

- IGS Publications and Peer Review Process
- Mentorship and networking
- Initiatives for Indigenous peoples' involvement
- Composition of committees and Council

Some feedback focused on the creation, promotion and use of toolkits that can help people and organisations incorporate D&I into different aspects of their work. In this regard the Committee recommends compiling and promoting existing resources within the glaciology community and determining what gaps exist that could be filled with further resources.

Monitoring Issues, Organisational Oversight, and Future Activities

The above documents contain recommendations which we hope will be adopted by Council after consideration. Should these be adopted (or other D&I related goals established), it is important to monitor progress toward them and reflect on the evolution of the IGS. We recommend periodic reviews of progress toward these goals, with regular opportunity for community feedback.

Part of monitoring this progress internally is providing new checks and balances on behaviour of members which creates exclusive, or hostile environments. To this end, we recommend that Council develop procedures and clear guidelines for handling complaints against members when behaviour contravenes the society's policies surrounding diversity and inclusion. We recommend that the circumstances under which expulsion is warranted and what other types of sanctions might be utilised be clearly outlined.

It is our hope that once the ad-hoc Committee lapses, a permanent Diversity and Inclusivity Committee is established. The work of this permanent committee would be to develop a long-range plan informed by the goals outlined in these documents, and advise other committees on their implementation. That long-range plan should consider a structure of volunteers from across the IGS community that will enable that plan's implementation. In addition, the Diversity and Inclusivity committee should be engaged in monitoring the progress of the IGS toward these goals, developing a survey or other tools to regularly gauge membership demographics, and solicit feedback from the community.

The International Glaciological Society (IGS)

The International Glaciological Society (IGS) was founded in 1936 to provide a focus for individuals interested in practical and scientific aspects of snow and ice. The objectives of the organisation, which are formalised in the society's constitution include: 1) to stimulate interest in and encourage research into the scientific and technical problems of snow and ice in all countries, and 2) to facilitate and increase the flow of glaciological ideas and information, including the sponsorship of lectures, field meetings and symposia; and 3) to publish several journals, including the *Journal of Glaciology*, the *Annals of Glaciology*, a news bulletin called *ICE*, and other publications, including books and monographs. The society also helps to promote and mentor the next generation of scientists.

The society has recently developed a document outlining the "[Core Values](#)" of the Society and a Scientific Code of Conduct by which all members are expected to abide. The core values of the society include a commitment to and respect for the individual, regardless of gender, sexual orientation, race, ethnic origin, nationality, religion or age. In addition, members are expected to have integrity, by being open, responsible, transparent, accountable, honest, ethical and genuine. Members also agree to maintain a safe, friendly and inclusive environment at IGS forums and while conducting all business of the society. It is also stated that members will strive for excellence, innovation and improvement in all activities of the society. Members are encouraged to be team players and collaborate whenever possible. Finally, society members shall attempt to minimise negative impacts on the environment whenever possible.

More recently, in June of 2020, following racial unrest around the world, the Society developed a statement on “Racism and Inequity”. The statement made clear that the IGS is a “scholarly community that has long valued and promoted international linkages and diverse scientific views.” The statement went on to say that the “IGS condemns racism, racist acts”, as well as the “systemic forces that allow and foster them, and the inequalities with which academia still struggles”. Finally, the statement on racism and inequality stated that the society will “continue on the inclusive path” and it encouraged all members to “learn more and do more....to make science a compassionate and inclusive space for all”.

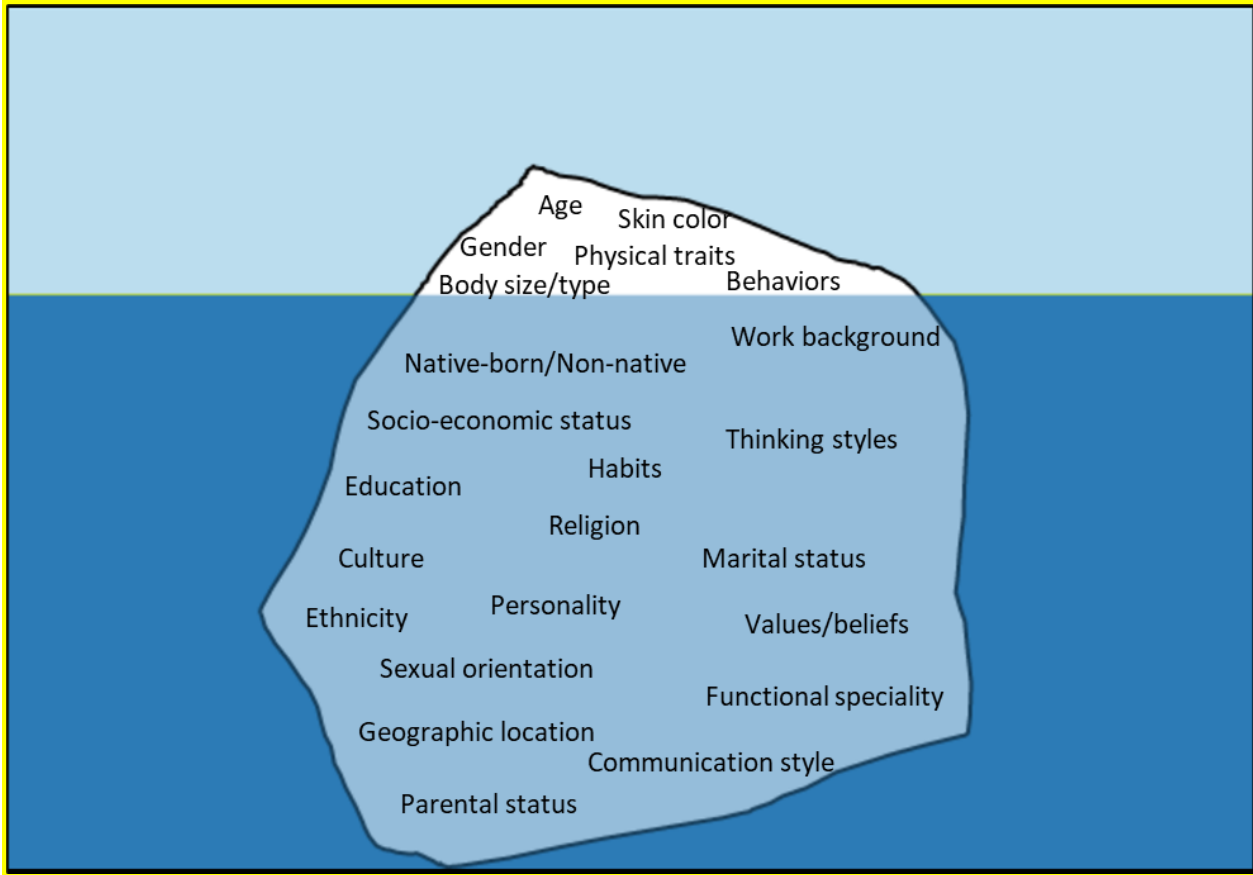
What is Diversity and Inclusion and Why is it Important?

Diversity

Diversity refers to the variety of different identities that are present in a group. These include not only the attributes that are visible², such as physical traits (e.g. skin colour and body size), approximate age, apparent gender and other characteristics that one can see, but also those that are invisible. These invisible traits include attributes like ethnicity, religion, cultural practices, sexual orientation, marital status, work background, level of education, disability status, and socioeconomic status, among others.

Diversity is important because it helps to bring to any situation or discussion a broader perspective for approaching problems, which can lead to new and innovative modes of thought. Diversity is relevant not only to the personnel involved in science, but it is also important to the types of studies that are considered important to a particular discipline. The greater the diversity of studies that are included in a particular discipline’s portfolio, the greater the opportunities for cross disciplinary and interdisciplinary studies to lead to new innovations and demonstrate the societal relevance of the research. In addition, diversity is an outcome of ensuring that all people are given a truly equal chance to participate in science.

² <https://www.nsg.com/en/sustainability/social/inclusion-and-diversity/visible-and-invisible-diversity>



Inspired by: <https://www.facebook.com/crossculturalcoach>; Iceberg-at-floatation by <https://joshdata.me/iceberger.html>

Inclusion

Inclusion, or inclusivity, means creating an environment that values and respects individuals for their diverse identities. Inclusion also refers to practises and policies that celebrate and embrace the provision of equal access and opportunity to those from non-majority groups or groups that have been traditionally or historically marginalised in a society, a profession or a discipline.

For example, when those from under-represented minorities, people with physical or mental disabilities, or individuals from diverse geographical regions (including but not limited to high mountain communities and inhabitants of the Arctic) are brought into the fold, we can create an environment which enables more open and honest discussions by helping people feel comfortable in sharing their opinions with less risk of being judged by others. This also helps bring new ideas and points of view into the discussion which otherwise might not be shared. Finally, as noted in the American Geophysical Union’s (AGU) Diversity and Inclusion Strategic

Plan³, creating “inclusive practises” will not only augment the “quality and impact of the...enterprise and its workforce; it directly supports the personal fulfilment, career success, and impact of AGU members....and it is the morally and ethically right thing to do.”

Other Terminology/Definitions

In addition to the terms “diversity” and “inclusion” it is important to highlight a few other terms that might have different meanings depending on the context or the situation in which they are used. For example, some other terms that might be elaborated on in future updates of this plan include gender, gender equality, gender bias, gender discrimination, empowerment, racism, discrimination, cultural competence, and implicit racism/bias, among others.

These terms are all described in several documents, including the International Centre for Integrated Mountain Development’s (ICIMOD) Gender and Equity Policy 2021⁴, the National Outdoor Leadership School (NOLS) Diversity & Inclusion Plan 2020⁵ and in the paper by Dutt (2020) on Race and Racism in the Geosciences.⁶ These terms need not be explicitly defined here, however those with an interest may decide to explore these terms further to better understand the broad and important issues surrounding this topic. In addition to reading these various documents, there are numerous resources available online⁷ and through academic institutions and professional organizations that members can seek out, to better understand topics such as implicit bias, gender discrimination and diversity and inclusion in the work place.

Broadening Participation Goals and Objectives:

Rationale

Policies and programs that recognize the importance of diversity and inclusion are critical to all aspects of society, including academic pursuits such as research and education⁸. A recent shift in thinking has led many organisations, including academic institutions, scientific societies, and others supporting the science community, to pay greater attention to developing policies and practices that combat bias and discrimination (both intentional and inadvertent) in their ranks. This increased awareness has led to the creation of the Committee and others like it in scientific societies and academic institutions internationally.

³ <https://www.agu.org/Learn-About-AGU/About-AGU/Diversity-and-Inclusion>

⁴ <https://www.icimod.org/who-we-are/our-policies/>

⁵ https://issuu.com/nols.edu/docs/2020-diversity-and_inclusion-plan

⁶ <https://www.nature.com/articles/s41561-019-0519-z>

⁷ <https://urgeoscience.org/resources>

⁸ [Powell, K. \(2018\). The power of diversity. *Nature*, 558, 19-22.](#)

Systemic bias and overt discrimination pervade many aspects of scientific education and career advancement. Those that may particularly impact IGS include early exposure to opportunities in earth science and family supports⁹; biases in the academic pipeline such as promotion metrics or advancement opportunities¹⁰; and hostile or unwelcoming work cultures¹¹. These biases result in a lack of diversity in many STEM fields, with geoscience and cryospheric science among the worst. The lack of diversity impacts the quality of science produced (lost knowledge) and perpetuates an exclusive culture limiting participation of those who do not share dominant identities⁶.

In July 2021 IGS conducted a survey of attendees of the Global Seminar series (which was available to members and non-members), and received 161 responses. The results of relevant survey questions are summarised in Figure 2. In particular we have highlighted four questions that speak to important aspects of diversity, gender identity, racial identity, educational privilege, and disability.

⁹ Dowey, N., Barclay, J., Fernando, B., Giles, S., Houghton, J., Jackson, C., ... & Williams, R. (2021). A UK perspective on tackling the geoscience racial diversity crisis in the Global North. *Nature Geoscience*, 14(5), 256-259

Hinton Jr, A. O., Termini, C. M., Spencer, E. C., Rutaganira, F. U., Chery, D., Roby, R., ... & Palavicino-Maggio, C. B. (2020). Patching the leaks: Revitalizing and reimagining the STEM pipeline. *Cell*, 183(3), 568-575

¹⁰ Erosheva, E. A., Grant, S., Chen, M. C., Lindner, M. D., Nakamura, R. K., & Lee, C. J. (2020). NIH peer review: Criterion scores completely account for racial disparities in overall impact scores. *Science Advances*, 6(23), eaaz4868.

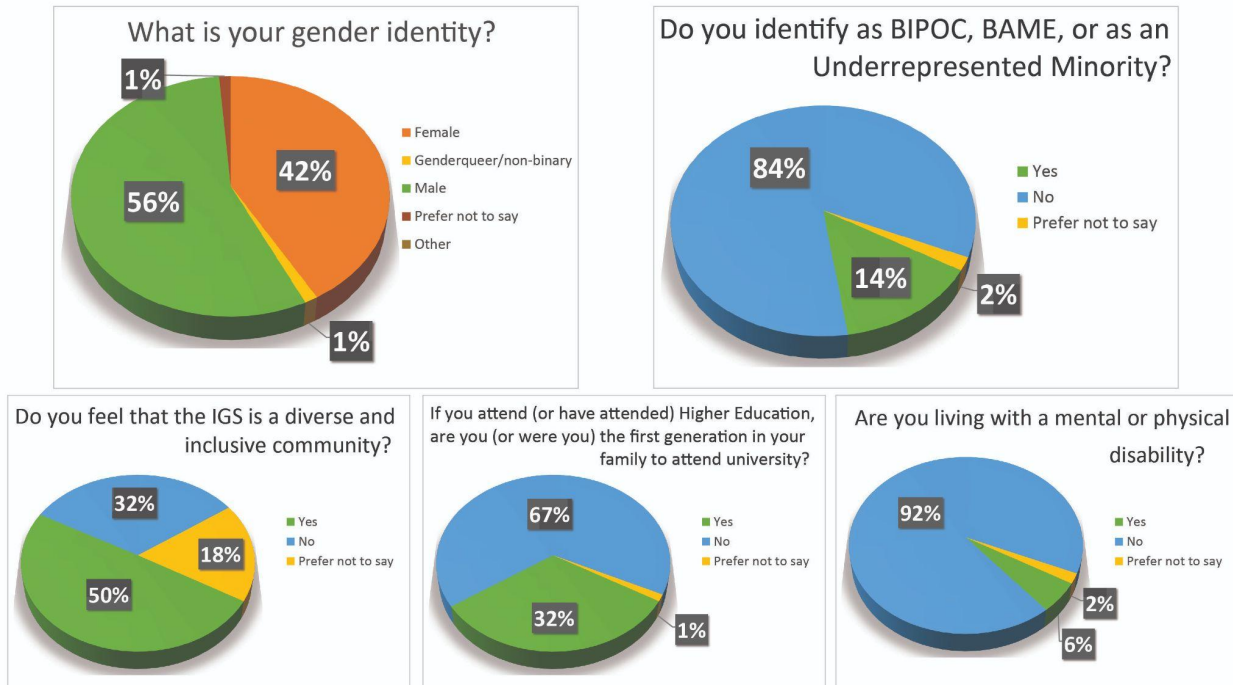
Pico, T., Bierman, P., Doyle, K., & Richardson, S. (2020). First authorship gender gap in the geosciences. *Earth and Space Science*, 7(8), e2020EA001203.

Dutt, Kuheli, et al. "Gender differences in recommendation letters for postdoctoral fellowships in geoscience." *Nature Geoscience* 9.11 (2016): 805-808.

¹¹ Marín-Spiotta, E., Barnes, R. T., Berhe, A. A., Hastings, M. G., Mattheis, A., Schneider, B., & Williams, B. M. (2020). Hostile climates are barriers to diversifying the geosciences. *Advances in Geosciences*, 53, 117-127.

St. John, K., Riggs, E., & Mogk, D. (2016). Sexual harassment in the sciences: a call to geoscience faculty and researchers to respond. *Journal of Geoscience Education*, 64(4), 255-257.

Powell, K., Terry, R., & Chen, S. (2020). How LGBT+ scientists would like to be included and welcomed in STEM workplaces.



Research about participation in geoscience has shown that significant barriers exist for those with minoritized identities, including gender¹², racialization¹³, and ability¹⁴. Largely absent from these survey questions (with the exception of those identifying as gender queer or non-binary), but equally important, are barriers that exist for the LGBTQ+ community¹⁵. The IGS survey results show low participation amongst those who identify with the above groups, suggesting the barriers identified in previous research likely are at play within IGS. Figure 2 also shows that only 32% of respondents are first in their family to attend higher education. Research has shown that parent education is an important indicator of the resources available to children in terms of parental support, financial access, and is linked to achievement gaps between white and Black students in the U.S.¹⁶

¹² Popp, A. L., Lutz, S. R., Khatami, S., Van Emmerik, T. H., & Knoben, W. J. (2019). A global survey on the perceptions and impacts of gender inequality in the Earth and space sciences. *Earth and Space Science*, 6(8), 1460-1468.

¹³ Morris, V. R. (2021). Combating racism in the geosciences: Reflections from a black professor. *AGU Advances*, 2(1), e2020AV000358.

Bernard, R. E., & Cooperdock, E. H. (2018). No progress on diversity in 40 years. *Nature Geoscience*, 11(5), 292-295.

¹⁴ Carabajal, I. G., Marshall, A. M., & Atchison, C. L. (2017). A synthesis of instructional strategies in geoscience education literature that address barriers to inclusion for students with disabilities. *Journal of Geoscience Education*, 65(4), 531-541.

¹⁵ Le Bras, I. (2021). A conversation on building safe spaces for the LGBTQ+ community in the geosciences. *Nature Communications*, 12, 4058.

¹⁶ Davis-Kean, P. E., Tang, S., & Waters, N. E. (2019). Parent education attainment and parenting. In M. H. Bornstein (Ed.), *Handbook of parenting: Biology and ecology of parenting* (pp. 400-420). Routledge/Taylor & Francis Group.

Hung, M., Smith, W. A., Voss, M. W., Franklin, J. D., Gu, Y., & Bounsanga, J. (2020). Exploring student achievement gaps in school districts across the United States. *Education and Urban Society*, 52(2), 175-193.

The final survey question, included in Figure 2, asked participants “Do you feel that the IGS is a diverse and inclusive community?”. Respondents were divided on this issue, with 50% selecting either “No” or “Prefer not to say”. Many comments on this question said that while they feel that IGS is welcoming or inclusive, it is not diverse (which is supported by the responses to the survey). Together these results indicate that barriers and privileges are still at play within IGS and need to be addressed. Given the importance of diversity in encouraging and retaining members with a diversity of identities, as described by K. Dutt⁶, it is critical that IGS address this issue.

While these survey results give important insights into the state of diversity within IGS, they do not represent a systematic review of the members, authors, editors, and others who participate in IGS business. Other scientific societies and organisations who collect equity metrics paint a similar picture, however. For instance, the UNESCO Institute for Statistics has found that female researchers have shorter careers with lower pay than their male counterparts, and are invited speakers at conferences only half as often¹⁷. Within the American Geophysical Union (AGU), 28% of members identify as female, 60% as male, and 54% identify as white. AGU also collects voluntary gender data on authors and reviewers, showing 11% female and 32% male (57% unknown). Most journals do not collect equity metrics on those participating in the publication system¹⁸. Those that do, like the AGU journals, have low participation in voluntary surveys. These metrics are important, however, to truly identify and address gaps in participation between identity groups.

The metrics available from organisations around the world show consistent decreasing participation at higher academic and career levels, often called the “leaky pipeline”. This “leak” becomes especially visible in the form of major awards and recognitions, such as within IGS, where near parity is reported in gender of respondents but only 2 of 39 Seligman Crystals have been awarded to women.

Increasing diversity throughout the academic and career pipeline will provide early career scientists with diverse role models. The participation of a diverse range of members in leadership roles, from the IGS Council to journal editors and reviewers, meeting organisers, and journal authors is important for ensuring that all members are given the opportunity to not only share in the work of the society but also to ensure that all members are given the chance to showcase their work.

¹⁷ <https://en.unesco.org/news/unesco-research-shows-women-career-scientists-still-face-gender-bias>

¹⁸ Wu, K. J. (2020). Scientific journals commit to diversity but lack the data. *The New York Times*. Retrieved November 16, 2021.

The fact that the society is international in scope and the interdisciplinary nature of the discipline, make the opportunity to engage scientists from a broad range of origins and backgrounds all the more important. In addition, members that merit recognition for awards, medals and honorary positions should be recognized regardless of their country of origin or academic position. Given the vast cultural differences that exist around the world and the ways in which academic positions are acquired by early career scientists and students, it is important not to assume that glaciologists, especially those in developing countries, are facing the same challenges or provided the same opportunities as their colleagues in other countries.

This report lays out the ways in which IGS can move forward in promoting equity and diversity within its ranks. At all levels of decision making, the factors outlined above are at play in different ways and must be taken into consideration when developing and reviewing policies and strategies related to membership, organisational culture, and recognition.

Diversity and Inclusion Plan

The Committee developed a draft Diversity and Inclusion Plan that was circulated to the IGS Council in April 2021. This “D&I Plan” contains a limited number of specific objectives that the IGS can meet in the immediate future. The Committee included goals and actions in the D&I Plan to direct the efforts of the IGS as it works towards these objectives.

Comments from Council members were received over the spring of 2021 and the revised D&I Plan was resubmitted to Council in July 2021. The revised D&I Plan is included as Appendix A. The objectives, and associated goals and actions, focus on:

- improving diversity and inclusion within the IGS community and within IGS leadership,
- the inclusion of early-career researchers within all IGS structures,
- the use of respectful and inclusive language in IGS communications and materials (see following section), and
- respect and professionalism in the peer-review process of the IGS journals.

The Committee acknowledges that work has begun on some aspects of the D&I Plan. Information that will help the IGS assess the diversity of its membership base (Goal 1a) was collected through a survey that was circulated to IGS members by Tavi Murray following comment from this committee. This committee is also aware that other committees are holding conversations regarding diversity in IGS leadership (e.g., the IGS Council and recruitment for positions on the Council) (Objective 1 action).

In addition, the Publications Committee has investigated options to encourage reviewers to associate their names with their reviews of manuscripts submitted to the Journal of Glaciology and the Annals of Glaciology. This is in response to Goal 4 of the D&I Plan, which aims to increase respect and professionalism within the peer-review process. Hester Jiskoot (Chief Editor) and Gwenn Flowers (IGS President) have provided information that illuminates some constraints placed by the Cambridge Core website structure. Accordingly, the Committee recommends, following the suggestion from Flowers and Jiskoot, that a selection box be added to the review form that encourages reviewers to disclose their identities¹⁹. The Committee also suggests a further amendment to the reviewer form that links to the IGS Core Values and Code of Conduct²⁰ in a selection box that requires reviewers to attest to their commitment to “a peer publication review process that is fair, unbiased and aimed at improving and enhancing the research and resulting publication²⁰; further guidance from Cambridge University Press on ethics in the peer review process is linked [here](#)”.

When the Committee solicited input from the IGS membership on ideas and concerns regarding D&I and the IGS (See Community Recommendations and Appendix C), several community members commented on their experiences and concerns of negative behaviour during the review process. From feedback by Jiskoot it has become clear that all parties (Authors, Reviewers, Editors and Editorial Staff) have been targets of such negative behaviour, which can occur in both the Review and the Production stages of a publication. The Committee advocates for immediate action to mitigate such problems and will continue to solicit feedback from the community to gauge the success of proposed measures. In particular, several community members expressed confusion over whether a complaint system exists to address circumstances in which the tone and substance of unsigned negative reviews fail to conform with the IGS Core Values and publication ethics statements noted above. During the review process, authors communicate primarily with an assigned Scientific Editor, but the final decision regarding the acceptance or rejection of an article is conveyed by an Associate Chief Editor. To address recommendations by the committee, Jiskoot and the Associate Chief Editors support the addition of language to the instructions for contributors document²¹ advising prospective authors that they address all complaints over unethical review behaviour to the Chief Editor (who will then discuss the details with the handling Scientific Editor and Associate Chief Editor).

The D&I Plan is under review by the IGS Council as of December 2021.

¹⁹ New language agreed upon following discussions with Jiskoot and Flowers, states: “The IGS encourages reviewers to disclose their identities. Do you wish to have your name revealed to the author(s)?”

²⁰ <https://www.igsoc.org/about/corevalues.pdf>

²¹ <https://www.cambridge.org/core/journals/journal-of-glaciology/information/instructions-contributors>

Further comment on inclusive language

As noted above, it is important that all communications of the society, including notices to members, invitations to participate in summer schools and conferences, as well as publications of the society, contain language that is sensitive to the diverse membership of the organisation. This item is also noted in the condensed D&I plan and in the recommendations to council. Here, we expand on the issue and provide background and helpful examples that may form the basis for reviewing IGS communications in the future.

The European Geosciences Union (EGU) has created a guide for promoting inclusive language in geosciences. This guide²² cites a number of examples of what is called “gendered language”, which is terminology that assumes a specific gender (usually male) for the person to whom the language is directed. For example, when we speak about a vehicle being “unmanned” or we talk about mankind, instead of humanity. Likewise, when a group is addressed as “Ladies and Gentlemen”, instead of “colleagues” or “respected guests”. The IGS will therefore review all of its correspondence and documentation and make an extra effort to be considerate of all members in order to make its communications as inclusive and as gender-neutral as possible.

A related issue, involving the evolution of pronominal language, concerns the importance of showing respect for individuals by using the pronoun with which they themselves associate. In other words, one should not assume that a person’s external appearance corresponds with the identity to which they relate. When the gender of an individual that is not present is unknown, common practice has evolved towards the use of the pronoun “they” in the singular, rather than the more cumbersome “he or she”. By extension, inclusive and respectful recognition of individuals whose gender identity is not known should make use of gender-neutral pronouns in their presence as well. For example, if one is speaking of or to a person whose gender-identity is not known, instead of saying “his talk” or “her talk” one should say “their talk”. While this basic courtesy may seem awkward to some and occasional mistakes are understandable, simple advanced consideration, for example by meeting organisers, can help promote inclusivity and avoid awkward situations stemming from incorrect pronoun use. Moreover, when honest mistakes in pronominal usage are made, it is important to promptly acknowledge the error and apologise.

Finally, inclusive language use surrounding issues of disability, chronic illness and mental health is also important. When speaking with or referring to an individual with whom one is unfamiliar, the recommendation is to put the person’s identity first. For example, this might involve

²²

<https://blogs.egu.eu/geolog/2021/01/13/accessibility-at-egu-promoting-inclusive-language-an-incomplete-guide-2/>

referring to an individual as “having a hearing-impairment” instead of describing them as “deaf” or “hearing impaired”. When in doubt, it is respectful to ask the person about their preference if possible. Obviously, terminology that is derogatory or disparaging is to be avoided. The EGU document has many more examples and a useful glossary of ableist phrases alongside more inclusive alternatives compiled by Lydia Brown²³.

The use of inclusive language reaches beyond interpersonal communication and should transcend to the IGS publications. As such, the D&I Committee recommends that all IGS publications strive to use names for geographical locations that respect and honour local indigenous traditions. An example is the Greenlandic ice stream Sermeq Kujalleq that is still often referred to by its foreign name Jakobshavn ice stream. Other examples include Denali rather than Mount McKinley in Alaska, USA.

Honours response

Recommended changes to the IGS honours structure received great attention in the comments that IGS Council members provided on the first draft of the D&I Plan. The Committee removed the associated goal from the revised D&I Plan (Appendix A) and provided a detailed response and a modified goal regarding the topic (see Honours Response section and Appendix B). This response was shaped from the input and support provided by numerous members of the IGS Community and leaders within the fields of cryosphere studies and geoscience²⁴.

The Committee’s response was submitted to Council in September 2021. The topic of academic honours was put in the international spotlight weeks later due to the dismally poor diversity of the 2021 American Geophysical Union (AGU) Fellows candidate pool. The situation in which 94% of the nominees associated with the Cryosphere Section were white and male prompted the Fellows Committee of the AGU Cryosphere Section to decline advancing any of the section’s candidates to the Union Fellows Committee. The open letter penned by the Cryosphere Section’s Fellows Committee that explains the situation and the decision for their choice of action can be found [here](#). The Selection Committee’s response garnered further attention by the international geoscience committee, the international media, and the public.

Upon naming the 2021 Union Fellows, the AGU Honours and Recognition Committee acknowledged the poor diversity of the candidate pool and implored the community to improve

²³ <https://www.autistichoya.com/p/ableist-words-and-terms-to-avoid.html>

²⁴ Erin Pettit (Associate Professor), Jeremy Bassis (Associate Professor), T.J. Young (Postdoctoral Research Fellow), Benjamin Keisling (Postdoctoral Research Fellow), Christopher Aiden-Lee Jackson (Professor), Allen Pope (Program Director), Emma Smith (Postdoctoral Research Fellow), Robin Bell (Professor), Tandong Yao (Professor), Olaf Eisen (Professor) and members of the D&I Committee

the diversity of those it nominates in future years. While individual action is part of the solution, the Fellows Committee of the AGU Cryosphere Section and Cryosphere Executive Committee have also committed to convening a Canvassing Committee that will ensure “a strong and diverse pool of nominations ... for all of AGU honours and awards”

The IGS D&I Committee strongly recommends that the IGS Awards Committee undertake proactive measures, aligned with those taken by the Executive and Fellows Committee of the AGU Cryosphere section, to increase the diversity of the pool of candidates for IGS honours. Specifically, the IGS D&I Committee recommends that the IGS Awards Committee consider potential nominees for IGS honours and connect with the close colleagues of these nominees to discuss the individual’s potential candidature and plan a nomination package. The D&I Committee recommends that these candidates can be internal or external to the IGS membership and their selection is informed by the considerations discussed in Appendix B. Furthermore, the D&I Committee recommends that the Awards Committee consider what is necessary in an application package, with the aim of decreasing the workload associated with compiling a nomination package. What is required to include in a nomination package should be clearly available on the IGS website along with the contact information of someone on the Awards Committee who will be available if guidance is sought.

The Committee appreciates the IGS Council’s consideration of this recommendation in addition to those presented with the full response on the IGS honours topic (Appendix B). The discussions that precipitated following the 2021 AGU Fellows selection process provide an important opportunity for further learning and action.

Community recommendations

The IGS will strive to engage new members from different ethnicities, Indigenous communities and language groups that have heretofore been underrepresented in the organisation. Recognising that a more diverse membership will make the organisation more societally relevant and resilient, members are encouraged to introduce friends and colleagues, who may be interested in the activities of the IGS, to become members and to learn more about the organisation. In addition, the development of mentorship programs and networking opportunities for new members and others who may not be accustomed to the ways of professional societies, are all things that the IGS can do to encourage broader participation by members of the scientific community in the activities of IGS.

The Committee solicited input over May 2021 from the IGS membership on ideas and concerns regarding D&I and the IGS. Some aspects of the D&I Plan are informed by this input (e.g., Goal 4 regarding named reviews). Ideas and concerns raised by the community on other topics were

organised by the Committee into a set of recommendations. The full set of recommendations, which includes ideas brought forward by the Committee in addition to those proposed by the wider community, can be found in Appendix C.

The topics considered within this set of recommendations includes :

- IGS Publications and Peer Review Process
- Mentorship and networking
- Initiatives for Indigenous peoples' involvement
- Composition of committees and Council

The D&I Plan (Appendix A) is intended for immediate action (i.e., approximately within the next year), while the Recommendations (Appendix C) are intended to be acted upon over a longer timeframe.

Based on community input, the Committee also has recommended creating a series of “tool-kits” and other resources for members to be used for a variety of purposes (Appendix C). Some of these are resources/tool-kits intended to assist with 1) member recruitment and retention; 2) making field programs both safe and secure for all participants, 3) creating summer schools/workshops and conferences/symposia that are more diverse and inclusive, and 4) creating a culture that is sensitive to these topics in all aspects of the society’s business. This includes assuring that all communications of the society utilise language that takes account of the society’s diverse members.

The Committee emphasises that the implementation of these recommendations and ideas must be a community effort. Further consideration of this future work is considered in the “Future Activities” section below.

Commitment of the IGS

The IGS is committed to upholding the diversity and inclusion statements described in this plan and will work across continents and within its membership, and affiliated organisations, to integrate the policies laid out in this plan throughout the fabric of the organisation. The IGS will also continuously review all of its existing documents, including membership policies, publication policies, awards and honours policies as well as its newly developed website to assure that diversity and inclusion are highlighted and given the level of importance they deserve. This will also include welcoming articles about diversity and inclusion in all publications

of the society and developing sessions at each of its conferences and symposia related to the topic of diversity and inclusion and the progress being made in this arena.

Monitoring Issues and Organisational Oversight

As discussed above, the IGS, its leadership and its members are all committed to making the organisation welcoming and inclusive. The IGS should establish a set of specific goals for achieving success in the area of diversity and inclusion. Once this is done, progress toward those goals can then be measured. Periodic reviews of progress toward the goals should be made every 3-5 years or as often as deemed necessary by the IGS Council and the D&I Committee (assuming it is developed into a standing committee).

We also recommend that the Council develop guidelines for how to handle complaints of members against one another during events organised by the society, such as conferences, field trips or other events that take place under the auspices of the society. Article 18 of the IGS constitution refers to expulsion of members for incidents that are “prejudicial to the society or to other members”. Something akin to Article 18 could be created to explain the process that should take place if a serious incident occurs involving a member that contravenes the society’s policies surrounding diversity and inclusion. This would have to be laid out in very clear and unambiguous terms and the language would have to be reviewed by legal experts.

Something similar to Article 18 of the IGS constitution which refers to expulsion of members for incidents that are “prejudicial to the society or to other members” could be envisioned or something a little less severe such as a warning or some other type of sanction. The Committee recommends that more explicit guidance for IGS members should be developed that lays out the circumstances under which expulsion is warranted and what other types of sanctions might be utilised in cases where expulsion may not be warranted. Here is the language of article 18 of the IGS constitution.

“If, in the opinion of the Council, any Member shall have acted in a manner prejudicial to the interests or good name of the Society, the Secretary General shall be instructed to write to that Member stating the nature of the offence, together with the name of informant, or source of information, and asking for an explanation. After allowing a reasonable time for a reply, the Council, providing not less than six are agreed, shall have the power to expel that Member from the Society.”

These recommendations are inspired by feedback from the IGS community regarding complaints and how to report them.

Future Activities

The Ad-hoc Committee for Diversity and Inclusion recommends that after its one-year term of work has expired that the Council seriously consider creating a permanent committee to provide oversight on these very important issues, at least until such time that the majority of voting members indicate that such a committee is no longer necessary. In addition, as recommended above, further work is needed to create a clearer list of policies and procedures that can aid members in knowing what their rights and protections are in case any member believes that another member is not abiding by the Diversity and Inclusion policies of the society. Finally, the IGS should develop a long-range plan that lays out clear goals related to making the organisation one that is considered by all to be diverse and inclusive, and a rubric to measure progress toward the goals, which should be measured and assessed periodically with input from the broader IGS community. The D&I Plan and Recommendations, included as appendices in this document, can inform this long-range plan. That long-range plan should consider a structure of volunteers from across the IGS community that will enable that plan's implementation.

Further Resources

1. AGU Diversity and Inclusion Strategic Plan:
<https://www.agu.org/-/media/Files/Learn-About-AGU/AGU-Diversity-and-Inclusion-Strategic-Plan-2019.pdf>
2. Hulbe, C., Wang, W., & Ommanney, S. (2010). Women in glaciology a historical perspective. *Journal of Glaciology*, 56(200), 944-964. Doi: 10.3189/002214311796406202
3. University of Colorado, Boulder, Pronoun Guidance:
<https://www.colorado.edu/cisc/resources/trans-queer/pronouns>
4. National Centre on Disability and Journalism, Disability Language Style Guide:
<https://ncdj.org/style-guide/>
5. Flinders University, Discrimination and Harassment (scroll down for an inclusive language guide):
<https://staff.flinders.edu.au/employee-resources/working-at-flinders/equalopportunity/>

6. Autism Europe, Acceptable Language: <https://www.autismeurope.org/about-autism/acceptable-language/>
7. Stonewall, Tackling Homophobic Language: https://www.stonewall.org.uk/sites/default/files/tackling_homophobic_language_-_teacher_s_guide.pdf
8. European Parliament, Gender Neutral Language in the European Parliament: https://www.europarl.europa.eu/cmsdata/151780/GNL_Guidelines_EN.pdf
9. Karen Catlin (2019) Better Allies: everyday actions to create inclusive, engaging workplaces, Better Allies Press, ISBN: 1732723311
https://books.google.de/books/about/Better_Allies.html?id=hFV_vwEACAAJ&redir_esc=y
10. People with disability, Australia: Identity-first vs person-first language
<https://pwd.org.au/resources/disability-info/language-guide/identity-vs-person>
11. The myth of "proper English" by Oliver Kamm
<https://www.thearticle.com/the-myth-of-proper-english>
12. Dutt, K. (2020) Race and racism in the geosciences. *Nat. Geosci.* **13**, 2–3.
<https://doi.org/10.1038/s41561-019-0519-z>
13. Promoting inclusive language an incomplete guide (v2)
<https://blogs.egu.eu/geolog/2021/01/13/accessibility-at-egu-promoting-inclusive-language-an-incomplete-guide-2/>
14. National Outdoor Leadership School: Diversity & Inclusion Plan 2020:
<https://www.nols.edu/en/about/diversity-equity-and-inclusion/>
https://issuu.com/nols.edu/docs/2020-diversity-and_inclusion-plan
15. International Centre for Integrated Mountain Development (ICIMOD) Gender and Equity Policy – 2020:
https://www.icimod.org/wp-content/uploads/2020/10/ICIMOD_GenderAndEquityPolicy2020.pdf

Appendix A: IGS Diversity and Inclusion Plan, v.2

The Diversity and Inclusion Committee acknowledges that the IGS is an international society and that the definition of a “minority” will change according to country and/or community. We suggest that the term minority can relate to a person’s traits including but not limited to ethnicity, religion, cultural practices, sexual orientation, level of education or disability status. We suggest that the IGS should endeavour to include individuals on all levels such that the full spectrum of minority statuses is represented. It is a key priority to recruit members belonging to communities that face systemic and institutional barriers.

#1 Improving diversity and inclusion in the IGS membership base, especially on IGS council, on IGS committees, and increasing the diversity of members in other leadership roles associated with the society’s work (e.g., journal editors and reviewers, meeting organizers and journal authors).

Goal 1a: The D&I committee to assess IGS membership diversity by the end of 2021, and subsequent IGS committees to assess their levels of diversity and representation (e.g., geographically, gender, career stage, identity)

Action: Committees and editorial boards to solicit nominations of underserved minorities with aim of representing the IGS membership.

Action: IGS will investigate actions that will improve the diversity of the overall IGS membership, and who should undertake these actions.

Goal 1b: IGS Council and committees to obtain and maintain an equal gender balance.

#2 Including early-career researchers at all levels within the society.

Goal 2a: The Nominations Committee to include at least one junior member in the slate for council member nominations.

Goal 2b: The representative from the EGG to have full membership status including voting rights in Council.

Action: Include one member of the D&I committee as an ex-officio member to help guide the Nominations Committee in its work nominating new Council members.

#3 Ensuring all communications and materials of the society are respectful and inclusive.

Goal 3a: By the end of 2021, IGS will investigate how to offer staff, committee and council members training in the use of inclusive language including cost.

Goal 3b: By the end of 2022, IGS staff, committee and council members, and officers to have completed training on the use of inclusive language and decided on next steps for reviewing current and future IGS materials.

Action: D&I Committee to outline/propose actions to deal with inappropriate communication and behaviour.

Action: IGS to ensure inclusive gender identity options are present in any IGS materials/registrations.

#4: Promote respect and professionalism in the peer-review process of the IGS journals.

Goal 4: The Publication Committee to investigate options for encouraging named reviews as default, in other words, reviewers have to “opt in” to be anonymous. The Publication Committee should report back to the D&I Committee within a year otherwise to Council.

The Diversity and Inclusion Plan is an evolving document that will be reviewed annually by a standing Diversity and Inclusion Committee. Progress toward those goals should be evaluated at the same time.

Appendix B: Response to Council on the Committee's recommendations regarding IGS honours

The IGS Ad-hoc Committee on Actions on Diversity and Inclusion response to Council regarding Goal #4 in the draft Diversity and Inclusion Plan for the IGS (“the Plan”)

Preamble: The topic of IGS honours received particular attention when Council reviewed the draft Plan in early 2021. This document presents a detailed response to the received comments and a modified goal.

Community acknowledgement*: We acknowledge valuable contributions from Erin Pettit (Associate Professor), Jeremy Bassis (Associate Professor), T.J. Young (Postdoctoral Research Fellow), Benjamin Keisling (Postdoctoral Research Fellow), Christopher Aiden-Lee Jackson (Professor), Allen Pope (Program Director), Emma Smith (Postdoctoral Research Fellow), Robin Bell (Professor), Tandong Yao (Professor) and Olaf Eisen (Professor) that shaped this response.

Response to Council: We, the members of the IGS Diversity and Inclusion Committee, greatly appreciate the engagement of Council members with the Plan, and specifically the attention, time, and effort paid to the criteria and consideration practices associated with the IGS honours and award criteria. We thank Council members for considering the structure and criteria of IGS honours again after recent global movements have increased our collective awareness and understanding of systemic issues that underlie inequalities that exist across the geosciences. These inequalities can arise from characteristics including, but not limited to, race (e.g. Dutt 2020), gender (e.g. Holmes et al. 2015), nationality, ability (e.g. Carabajal et al. 2017), and socio-economic class (e.g. Giles et al. 2020). Additional reading can be found in Ali et al. (2021) and Anadu et al. (2020).

In the draft Plan, we suggested that the full profile of IGS honours nominees should be considered and equal weight should be given to the candidate's scientific output, outreach activities and their efforts to increase inclusivity within glaciology for all IGS honours including the Seligman Crystal. IGS Council argued that outreach and activities considered to be a service to the glaciological community are covered by the Richardson Medal. After carefully considering the response from IGS Council, and seeking advice from members of the glaciological and geoscience communities, we maintain that the criteria for the Seligman Crystal should be rephrased. Below we outline the reasoning for our position and list our recommendations for creating more equitable honours.

We emphasize that the criteria and selection of IGS honours is an important signal to our community. Awards embody the type of work and achievements that our community values. As such, the aspirations of current and future members of our community will be shaped from the criteria used to present the IGS honours. We therefore propose a shift that would result in the IGS embracing a comprehensive view of an individual's contributions to the field of glaciology.

By shifting away from honours that are largely based on traditional scientific contribution (i.e., the breadth and depth of publication records), we also shift away from perceived differences in awards' prestige and the bias in the award selection processes (Kernen 2021). Differences in opportunity and capacity, stemming from a myriad of situations (e.g., socio-economic status, caring responsibilities, prolonged illness), restrict who can produce the amount and type of work considered for an award focused on traditional scientific output (Pico 2020).

It also is important to consider that non-scholarly contributions are disproportionately divided across lines of marginalisation (e.g., race/ethnicity, gender, class, sexuality) (Jimenez et al., 2019; Gewin, 2020; Guarino and Borden, 2017; Social Sciences Feminist Network Research Interest Group, 2017). These endeavors are critical to the creation and maintenance of an overall positive and equitable work environment within which our field then creatively and productively operates. These endeavours also take time away from the pursuit of traditional scientific excellence. We note that women received only 2 of the 39 Seligman Crystals but 5 of the 16 Richardson Medals presented to date.

We and other members of the community* consider non-scholarly contributions to be significant scientific contributions unto themselves. By holistically considering our contributions we will recognize the breadth of impact of those awarded IGS honours. By reconsidering how we judge scientific impact we will challenge the perpetuation of a hierarchy defined by biased citation indexes and modes of recognizing excellence (Ellingson and Quinlan, 2012; Ferrara and Romero, 2013) that drive competition and exacerbate the biases and inequalities that restrict the potential of our field. Other learned societies are also following this path, for example, the Royal Geographical Society's Gold Medal states that *"...the Gold Medals are the Society's highest accolade and are reserved for individuals of outstanding merit, either from academic or non-academic backgrounds. [...] In particular, nominations should highlight, where relevant, a breadth of contribution that includes, for those being nominated as academics, both their scholarly contribution and their impact in wider spheres either in and/or beyond the academy."*

The outcomes of our portfolio of contributions, including non-scholarly activities (e.g., mentorship, leadership, justice-equity-diversity-inclusion actions, contributions to open-access materials and data, policy development, outreach), will have long-lasting impacts that elevate

the quality of our field's science and challenge the inequalities within the geosciences. While the latter contributes to the former, it is also a critical undertaking in and of itself. Redefining the IGS honours to reflect the IGS core values and promote equity is a forward-looking endeavor that will place our organization as a leader within the geosciences. The actions we take now to create more equitable and holistic awards criteria will signal to our glaciological community that all contributions to science are valued and recognized as significant. While we award the pinnacle of our field with these honours, our entire field will be the better for it.

Recommendations

The current IGS honours are structured as follows: 1) scientific excellence and service to the glaciology community are considered, currently by awarding distinct honours for exceptional scientific contribution (through the Seligman Crystal) and outstanding service (through the Richardson Medal), 2) the Early Career Scientist (ECS) award considers nominees scholarly and/or service contributions, and 3) all nominees for any IGS award are "expected to exhibit high moral and ethical standards".

Emerging from this, we recommend that the criteria for the Seligman Crystal be revised to recognize those with significant and long-lasting impact on glaciology through a process that holistically and transparently considers an individual's scholarly and non-scholarly contributions to the community. We recommend that the Seligman Crystal be awarded to senior scientists and that a new honour that also considers scholarly achievement and wider service be initiated for mid-career glaciologists.

Having the Seligman Crystal and a new mid-career honour accompany the ECS and Graham Cogley awards will result in the annual recognition of early-, mid- and late-career individuals through the body of IGS awards. We are aware that many in our community have suggested the addition of a mid-career award. This is an opportunity to address those suggestions while also considering the criteria used across the body of IGS honours. Alternatively, the new award could be shaped in such a way that it is open to collaborative efforts that have influenced the field of glaciology through scientific output and non-scholarly actions either in or external to the society. We also recommend that, similarly to other IGS honours, the ECS and Graham Cogley awards be presented annually. These awards are an engagement point with the next-generation that is influencing glaciology through important scholarly and service contributions.

We recommend that the aforementioned awards can be described in terms similar to an edited version of the current ECS award: *"The IGS ECS Award is given to an individual at an early stage in their career who has made significant contributions to glaciology. Contributions will be assessed on the basis of the impact of their research contribution and the nominee's service to*

glaciology and the International Glaciological Society, including outreach activities and promotion of IGS core values.” It can be explicitly stated that the promotion of IGS core values includes efforts devoted to building collaborative work environments, environmental stewardship, and justice, equity, diversity and inclusion efforts. This builds on existing award criteria that expects nominees to exhibit high moral and ethical standards, which includes effort to ensure that there is equal opportunity to engage in glaciology. By explicitly laying out the values we expect nominees to embody, we will be able to signal their importance to the community and encourage members to incorporate them in their professional activities. We recommend that examples of other non-scholarly activities, such as those included in this document and the description of the Richardson Medal, be considered and included in the awards’ descriptions as well.

We understand that the Richardson Medal recognizes service to the field of glaciology by those who potentially work outside of academia. We recommend that this honour be devoted to recognizing individuals, organizations, networks or teams for work in non-academic settings and who have significantly contributed to the glaciological community or have applied glaciological methods or knowledge for the betterment of societies and communities. Nominees may hail from non-academic backgrounds. A non-exhaustive list of those who could be considered includes leaders in government or non-governmental organizations, community monitoring programs, Indigenous leaders or communities, and leaders in field programs. This award is an opportunity to expand the IGS network and elevate those who are conducting critical and meaningful work on the behalf of glaciology and greater society.

Objective: We proposes the following revised addition to the Plan:

The full profile of a nominee’s contributions to glaciology should be considered holistically when awarding the Seligman Crystal, a new mid-career award and ECS Award. The D&I Committee offers their consultation or greater participation in this work.

Goal 4a: Within a year a new honor will be created, to recognize mid-career glaciologists or collaborative teams, and review the criteria for the Seligman Crystal and Richardson Medal.

Goal 4b: Within a year, the Awards Committee will review other aspects of the awards structure and selection process. This review will include:

- providing the community greater detail regarding award selection, and
- examining the metrics used to define nominees’ research excellence, with consideration of alternative approaches to describing and evaluating the value of a nominee’s work.

This review can also include:

- revising the frequency of presenting ECS awards,
- devising a rubric to identify biases within criteria to recognize how systemic biases influence the scientific achievements of nominees with different job and life experiences and backgrounds,
- asking nominees or award winners to self-certify that they have not faced any claims that counter the need to “exhibit high moral and ethical standards”,

The D&I Plan, an upcoming full report from Committee, and other organization’s award programs (e.g., [The Royal Geographical Society Gold Medal](#), [The Royal Astronomical Society Gold Medal](#), [The Oceanography Society’s honours](#)) are suggested resources for this work.

Goal 4c: The next Awards Committee will represent the diversity of the larger IGS community (in career stage, gender, nationality, etc.). The appointment process is done in a transparent way.

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Appendix C: Report on Community Input on IGS D&I Actions

The following document summarises input received from the cryosphere community on the work by the Ad-hoc committee for Actions on Diversity and Inclusivity. The responses were received via email to committee chair N. B. Karlsson as a direct reply to an email to cryolist. In total, we received 22 replies with the majority of respondents based in North America or Europe. A small majority of respondents are male. Given the nature of the communication we did not receive any anonymous replies nor did we receive requests for anonymity. Nevertheless, names have been removed in the following sections. The Committee has retained names of respondents for future reference.

Below, we have sorted the comments into thematic sections. The suggestions are summarised by The Committee in the committee's own words but do not necessarily reflect the opinions of the D&I Committee. Direct quotes from respondents are inserted as italicized text where appropriate.

IGS Publications and Peer Review Process

The Review Process

Community input suggests an official mechanism for dealing with inappropriate reviews, such as use of unprofessional, rude or even hostile language and attacks on persons.

"I have received reviews that have seemed more like an attack on me as a scientist than constructive feedback or have simply been totally not helpful [...] and that is particularly damaging as an early career scientist."

The D&I Committee suggests that if no complaints mechanism exists, such a mechanism should be initiated and that this mechanism should be transparent and easy to navigate.

If a complaints mechanism is already in place, we suggest that this mechanism should be reviewed and inadequacies addressed. Specifically, actions should be taken to increase the visibility of the mechanism. This input is in line with the D&I Committee's thoughts on the review process as outlined in the D&I Plan.

Financial Support for Publication

A suggestion was received to increase the availability of discounts for publications by Master and PhD students.

It is unclear to the D&I Committee how frequently publication charges are discounted for student authors and what the criteria are. The current guidelines on the Journal of Glaciology website state: *“Authors may be granted a partial or full waiver of the processing charge by the Secretary General of the IGS. Waivers may be granted when the lead author is from a low or middle income nation (as defined by lists used by Cambridge UP), and in rare cases when authors and their institutes can clearly demonstrate inability to pay.”*

The D&I Committee suggests that these guidelines are reviewed to include examples of cases where discounts have been granted, and statistics on how many waivers are granted per year.

Training Community Members

One way of achieving a higher quality of submissions and better review process would be to train community members. Community input suggested that sessions could be held that train IGS members (especially under-represented groups) in scientific communication and the review process.

“It will boost their confidence as this will lead to more contributions from them.”

The D&I Committee suggests that such training sessions could take place during IGS meetings and symposia, or could be the topic of an IGS virtual seminar.

Mentorship and networking

Mentorship schemes exist within APECS (Association of Polar Early Career Scientists). The community input points out that the IGS might be better placed helping APECS than initiating its own mentorship scheme. Other community input highlights the need for more efforts to be put into international collaborations (e.g. student exchange, etc.)

The D&I Committee agrees that setting up a formalised mentor network is a large undertaking.

Initiatives for Indigenous peoples’ involvement

Cautionary notes were received on this theme, including:

“IGS needs to be sensitive that we need to work with existing infrastructure and communities that already have connections to science.”

A lack of resources was also flagged as a problem. Evenso, the community input suggested that we as a scientific community can do more to involve Indigenous people. One suggestion was to provide scholarships for students who live close to the cryosphere to attend IGS meetings. Suggested contacts for working with local communities: Craig George in Alaska or Andy Mahoney at UAF, or Shari Gearhard-Fox.

The D&I Committee notes that most of the feedback seems to be concerned with communities in the Arctic regions and not high mountain areas. We strongly recommend that Indigenous peoples of the high mountain areas are also included in these considerations. Discussion on how to involve high mountain communities would be welcome, and networking could be one step in order to ease their involvement with the IGS.

The D&I Committee recommends that the IGS acknowledges the richness of knowledge and information that exist in Indigenous communities based on lived experiences. Indigenous knowledge-related periodical publications and information dissemination, in addition to support for training and education, could be additional aspects.

Tool kits

The community input points out that some tool kits already exist and IGS may help to make these efforts more widely known and used. Existing tool kits include kits at UAF (Erin Pettit) and APECS.

“Can IGS help us pull these efforts together into accepted practice?”

There was also a suggestion that the tool kits may be presented at diversity sessions at IGS meetings. Indeed, some input suggested that every IGS conference should have 1-1.5 hours to implement D&I initiatives.

The D&I Committee suggests that a next step would be to investigate the suitability and accessibility of these existing tool kits. We also suggest that local organising meeting committees should have support for organising D&I sessions at meetings.

Composition of Committees, Council etc.

One community input suggested that reviewing the composition of IGS governance bodies should be done with the current composition of the IGS membership base in mind.

“I would highly recommend that you do not have a 'quota' for how many women and people of color should be represented. I think it is far more instructive to examine if we have representation proportional to the representation in the full workforce.”

Further community input underscored that thoughts should be given as to whether or not minorities are taking on a disproportionately larger part of the service to the society, and whether minorities are excluded from participation in some parts of the society. Questions were also raised as to whether or not students were included at higher level committees and whether or not the students would wish to participate at this level.

The D&I Committee agrees that we should be mindful of not burdening minorities with extra service (case in point: the majority of D&I Committee members identify as female). We also agree that a quota for representation is too rigid, however, we think that IGS governance composition should reflect the diversity we strive to attain and willingness for service rather than the present diversity of the subsection of the membership base who are typically invited to join governance. Encouragingly, a survey of IGS members found that 80% are willing to serve in an IGS Committee or Council now or in the future.

Increasing Diversity

The community input suggested that IGS could appoint ambassadors

“The IGS should appoint D&I national brand ambassadors - they should share local success stories, make the community members heard at the IGS platform.”

Several members pointed out that the lack of diversity within the IGS stems from lack of diversity in the uptake of students.

“Can we expand the society's mission to include a conversation about teaching and how to encourage interest in ice, can we help change the image of what a glaciologist looks like?”

It was suggested that Council adopt specific actions on this. However, it was also noted that content that is effective at reaching students who might be interested in glaciology needs to be prepared in collaboration with professional educators.

The D&I Committee agrees that increasing the diversity of student uptake would be an important step in increasing diversity of IGS, we note that this is a large undertaking and beyond the scope of the D&I Committee's work. Suggested actions include a separate IGS committee

tasked with securing funding and resources for educational materials. It would be worth reaching out to the IGS members who suggested this action point and ask if they would be willing to lead such an effort.

Other

Community input suggests that IGS should monitor indicators of diversity in order to find critical areas where actions are needed. This will also serve as a motivational exercise (when the actions are working) and for tracking results (how effective are the actions). It was also suggested that the past and current composition of IGS should be mapped.

Other comments highlighted the need for recognising the imbalance in the selection process (on any level of participation) towards certain people.

“Currently there is so much emphasis on rewarding excellence of individuals in the extreme that scientific progress is limiting itself to a narrow spectrum of human beings that can participate in the scientific process of research.”

It is suggested that inclusion practices should address this imbalance first.

Finally, a suggestion outlined that membership fees should be reduced, for example, based on the member’s residence. It could also be made optional to register at a higher rate to support D&I efforts at conferences. This fund could be used to support underrepresented groups (recipient selected based on merit).

A survey mapping the composition of the IGS membership base has now been carried out. The D&I Committee agrees that the IGS should embrace and encourage the need for a work-life balance.

The suggestion to reduce membership fees based on country has already been implemented.

Appendix D: Compilation of new D&I Committee recommendations included in this final report

IGS Commitment

The IGS also will continuously review all of its existing documents, including membership policies, publication policies, awards and honors policies as well as its newly developed website to assure that diversity and inclusion are highlighted and given the level of importance they deserve for the betterment of the society.

Monitoring Issues and Organizational Oversight

The IGS should establish a set of specific goals for achieving success in the area of diversity and inclusion. Once this is done, progress toward those goals can then be measured. Periodic reviews of progress toward the goals should be made every 3-5 years or as often as deemed necessary by the IGS Council and the D&I Committee (assuming it is developed into a standing committee).

It is also recommended that the Council develop guidelines for how to handle complaints of members against one another during events organized by the society, such as conferences, field trips or other events taking place under the auspices of the society. *See section in main text for further information.*

Publications and Symposia

The Committee has suggested, following the suggestion from [IGS President] Flowers, that a selection box be added to the review form that encourages reviewers to disclose their identities and asks if the reviewer will do so. The Committee has also suggested two further additions to the reviewer and author forms: 1) a statement that summarises the IGS Core Values, and 2) a selection box asking if the authors and reviewers commit to abiding by the core values. *Conversation regarding these actions is underway.*

When the Committee solicited input from the IGS membership on ideas and concerns regarding D&I and the IGS (See Community Recommendations and Appendix C), several community members commented on their experiences and concerns of negative behaviour of reviewers of journal articles. The Committee would like to continue this conversation. Items that came up for discussion from the Committee include: Do we have a specific code of conduct for reviewers? If yes, should this be more visible or should a brief summary be highlighted somewhere? Is there

a complaint system and are authors and reviewers aware of its existence? Could this system be improved? Should the IGS instruct their editors to pay particular attention to the tone and substance of unsigned negative reviews?

[The IGS will] include welcoming articles about diversity and inclusion in all publications of the society and developing sessions at each of its conferences and symposia related to the topic of diversity and inclusion and the progress being made in this arena.

Inclusive Language

The use of inclusive language reaches beyond interpersonal communication and should transcend to the IGS publications. As such, the D&I Committee recommends that all IGS publications strive to use names for geographical locations that respect and honour local indigenous traditions. An example is the Greenlandic ice stream Sermeq Kujalleq that is still often referred to by its foreign name Jakobshavn ice stream. Other examples include Denali rather than Mount McKinley in Alaska, USA.

Honours

The IGS D&I Committee strongly recommends that the IGS Awards Committee undertake proactive measures, aligned with those taken by the Executive and Fellows Committee of the AGU Cryosphere section, to increase the diversity of the pool of candidates for IGS honours. Specifically, the IGS D&I Committee recommends that the IGS Awards Committee consider potential nominees for IGS honours and connect with the close colleagues of these nominees to discuss the individual's potential candidature and plan a nomination package. The D&I Committee recommends that these candidates can be internal or external to the IGS membership and their selection is informed by the considerations discussed in Appendix B. Furthermore, the D&I Committee recommends that the Awards Committee consider what is necessary in an application package, with the aim of decreasing the workload associated with compiling a nomination package. What is required to include in a nomination package should be clearly available on the IGS website along with the contact information of someone on the Awards Committee who will be available if guidance is sought.

Future Activities

The Ad-hoc Committee for Diversity and Inclusion recommends that after its one-year term of work has expired that the Council seriously consider creating a permanent committee to provide oversight on these very important issues, at least until such time that the majority of voting members indicate that such a committee is no longer necessary. In addition, as recommended above, further work is needed to create a clearer list of policies and procedures

that can aid members in knowing what their rights and protections are in case any member believes that another member is not abiding by the Diversity and Inclusion policies of the society. Finally, the IGS should develop a long-range plan that lays out clear goals related to making the organization one that is considered by all to be diverse and inclusive, and a rubric to measure progress toward the goals, which should be measured and assessed periodically. The D&I Plan and Recommendations, included as appendices in this document, can inform this long-range plan. That long-range plan should consider a structure of volunteers from across the IGS community that will enable that plan's implementation.