



Communication

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Corresponding author:

Tavi Murray; Email: t.murray@swansea.ac.uk

An introduction to the *Annals of Glaciology* special issue on the 'International Glaciological Society Global Seminar Series: *New Research Directions*'

Tavi Murray¹ , Hester Jiskoot² , Magnús Már Magnússon³,
Rebecca Schlegel^{1,*}, Lauren J. Vargo⁴  and Doug MacAyeal⁵ 

¹Swansea University, Swansea, UK; ²University of Lethbridge, Lethbridge, Canada; ³International Glaciological Society, Cambridge, UK; ⁴Victoria University of Wellington, Wellington, New Zealand and ⁵University of Chicago, Chicago, USA

In March 2020, COVID-19 lockdowns in many countries resulted in university classes moving online and scientific meetings being cancelled. Suddenly, we were presented with the clear demonstration that relatively robust, versatile and easy-to-use technology for virtual meetings existed. Shortly afterwards the International Glaciological Society (IGS) started a weekly *IGS Global Seminar Series*. This series, originally proposed and chaired by Tavi Murray, and facilitated by Magnús Már Magnússon, aimed to provide opportunities to network and maintain international links and to excite the community with the latest science results while fostering discussion. That meant that a live format with the ability for the audience to interact was needed. The seminar has been running since April 2020 and is presented live on Zoom (>1800 registrants in the first two years) and Facebook while recordings are posted after the seminar on the IGS YouTube channel (<https://www.youtube.com/c/InternationalGlaciologicalSociety>). All past *IGS Global Seminar Series* titles and links can be found on the IGS website (<https://www.igsoc.org/events/past-seminars>).

This special edition of the *Annals of Glaciology* celebrates the success of the *IGS Global Seminar Series* by showcasing 31 Letters (short papers) resulting from seminars presented during the first two years of the series. The Letters are all peer-reviewed current perspectives on and future priorities of a diverse range of subfields within glaciology. The papers' topics range from geophysical techniques in glaciology; to tidewater glaciers; ice shelves; icebergs; ice cliffs and penitentes; firn; debris-covered glaciers; surging glaciers; cosmogenic nuclide chronologies; to subglacial environments; ecosystem services of glacial meltwater; and strategies for inclusive and effective glaciological fieldwork, altogether reflecting the diverse subject matter of the seminar series. The geographical range covers the Greenland and Antarctic ice sheets, glaciers in High Mountain Asia, the Andes and even planetary ice on Mars.

The Associate Chief Editors of this *Annals* issue (Tavi Murray and Doug MacAyeal) thank the authors for answering to the call for papers and submitting high-quality works, and also like to thank the Scientific Editors of this *Annals* issue (Christophe Cudennec, Sérgio Faria, Umesh Haritashya, Michele Koppes, Evgeny Podolskiy, Andrés Rivera, Martyn Tranter, Rebecca Schlegel, Lauren Vargo, Julia Wellner, Michael Wood) and all the reviewers. We further thank Hester Jiskoot (IGS Chief Editor), Lynsey Rowland (Editorial Assistant) and Craig Baxter (Content Manager) for the effective handling of papers, and assistance to authors and editors, from submission to online publication.

IGS Global Seminar Series and emissions reductions

Scientific communication at conferences and meetings has traditionally necessitated significant travel. While not carbon-free (online meetings require individual devices to be active and the presence of data centres and servers), their emissions are much lower than travelling to international meetings (Burtscher and others, 2020). Overall, reducing the need for scientists to travel to connect, stay up-to-date and network in person should be a priority for a learned society such as IGS. An example of the carbon emissions of a global meeting was estimated for the 2019 AGU Fall Meeting. The 28 000 delegates travelled ~285 million km to attend, emitting ~80 000 tonnes of CO₂ by doing so (Klöwer and others, 2020). The traditional model of creating opportunities for collaboration through regularly attending large face-to-face conferences is clearly unsustainable. The *IGS Global Seminar Series* can contribute to lowering the carbon footprint of our research by providing a means to reduce international travel while maintaining international links. [Figure 1](#) shows the wide geographic coverage of registrations to the series over the 16-month period February 2022 to May 2023.

IGS Global Seminar Series and increasing diversity

International conferences also often lack speaker and audience diversity, in part because some groups find it difficult to attend, including those from lower-income countries, those with

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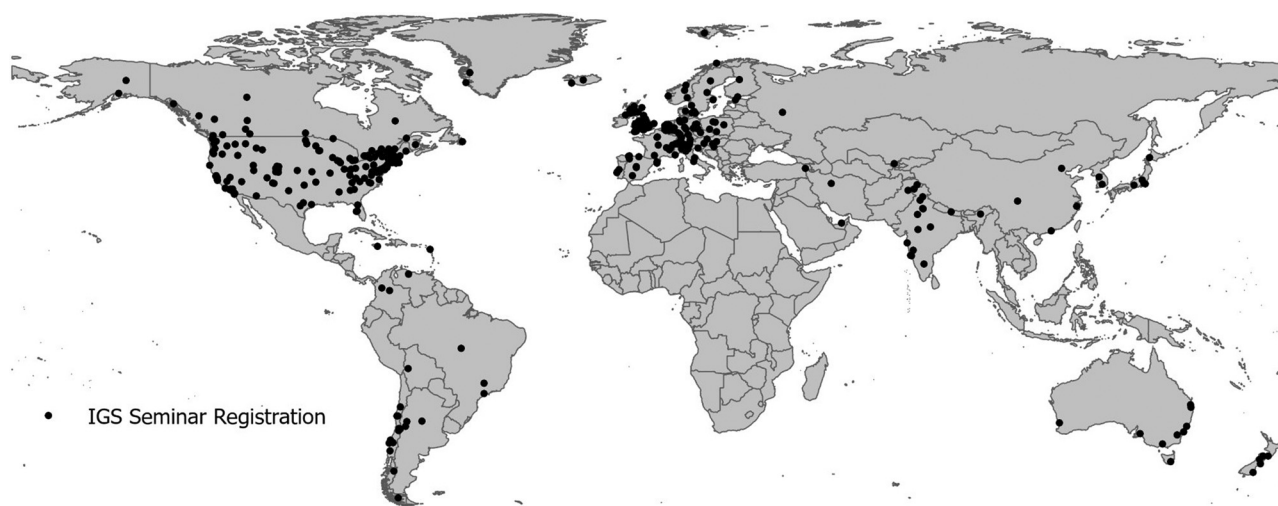


Figure 1. Locations of 1016 seminar registrations covering the period February 2022 to May 2023, demonstrating the wide spread of participants and the global nature of the IGS Global Seminar Series. Note that many of these locations have more than one registrant and some have more than ten. Base map from ArcGIS Pro in a Plate Carrée Equidistant Cylindrical projection.

caring responsibilities, Early-Career Researchers (ECRs), as well as people with disabilities or who are seeking employment. The online and free nature of the *IGS Global Seminar Series* democratises access to our science, providing free access to state-of-the-science research at a time and place that suits the viewer through the recorded seminars. The organisers of the seminar series have worked to ensure gender balance for presenters and have strongly encouraged ECR participation with dedicated ECR sessions. An open call for papers for this issue was made, and in this *Annals of Glaciology* Issue, about 30% of the lead authorship are ECRs, while several others are retired scientists. The lead authorship also has an approximately equal gender balance and while some of the Letters are single-authored, several have combined authorship from a range of different research groups that had not co-authored papers previously. Further, the authors of this *Annals of Glaciology* issue are affiliated with institutions in approximately 20 different countries.

Where next?

The *IGS Global Seminar Series* usually has a January–April and September–November schedule (spring/fall and fall/spring

depending on the hemisphere). In summer 2020, we introduced dedicated short (15 min) slots for early-career researchers, co-organised and chaired by members of the IGS Early-career Glaciologists Group (IGS-EGG). In 2023, we introduced dedicated Sea Ice talks to the series, which were chaired by David Babb (University of Manitoba). The intention is to start afresh in September 2023 with a series that contains both glacier/ice sheet, snow and sea ice talks *and* introduces talks that are time-zone friendly in countries such as India and China that have so far been poorly served by the live presentations. We look forward to welcoming you all! In the meantime, and beyond, we hope that the range of papers in this *Annals of Glaciology* issue will be of great interest to glaciologists worldwide.

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