

## **Author response for ‘Planning virtual and hybrid events: steps to improve inclusion and accessibility’**

*\*Aileen L. Doran, \*Victoria Dutch, \*Bridget Warren, Robert A. Watson, Kevin Murphy, Angus Aldis, Isabelle Cooper, Charlotte Cockram, Dyess Harp, Morgane Desmau, Lydia Keppler*

We would like to thank the editor and both reviewers for their time in reading and providing guidance on the original manuscript. Additionally, we thank community reviewers for their insights and suggestions, and the wider community for ideas and feedback during in-person discussions. Responses to all reviewer comments are outlined below. For ease, the original reviewer's comments are in black, and responses are in blue. This manuscript is intended to act as a starting place for virtual and hybrid event accessibility and does not represent a final guide. New ideas and solutions are likely to emerge as awareness does.

### **Reviewer 1 - Christopher Atchison**

Overview: This paper presents foundational information any conference organizer should consider when planning for virtual or hybrid convenings. The focus on access for those with disabilities should also highlight that these planning considerations will eventually benefit everyone, across every demographic, at some point in time, who wish to remain active in their respective discipline the older they get. Specific comments follow:

*Is there a way to contribute to this discussion? As new things are learned?*

- Introduction: Why is this being written to focus on the deficit of the geosciences being of the least diverse of all science fields? We know this as it is written in nearly every paper that focuses on DEIA. This paper goes beyond and highlights the opportunities and benefits of planning for access and inclusion. Therefore, this opening introduction starts the reader in a negative frame of mind. How can this be rewritten to focus on the assets of inclusion rather the deficits of a lack of diversity?
  - The introduction has been adjusted to emphasize the progress and growth of the geoscience community and diversity movements and to support the benefits of inclusion and diversity.
- Line 50: Why is the “Global North” a focus here? Does this not impact people in the Global South?
  - The sentence has been changed to include ‘Global South’, as it was originally meant to emphasize the impact on GS participants.
- Line 72: Returning to in-person events does negatively impact those who are ‘historically marginalized’, but so many others as well for reasons presented in this paper.

- The sentence has been adjusted to include 'and many others' after 'historically marginalized'.
- Line 76-79: challenges of virtual alternatives: please provide citations as evidence here.
  - The relevant references have been added. These have also been added to the reference list at the end of the document.
- Line 97: Review of Previous Literature: Why was the focus only since 2020, yet Figure 1 shows data previous to 2020. What was known prior to the pandemic?
  - The text has been adjusted to reflect the figure more accurately.
- Line 131-132: Figure 2: 'lack of correlation between the two data sets' is untrue, there are at least 10 correlations in the distinctive dips between the two data sets. This should be explained. Also, there was a significant uptick in virtual meetings BEFORE the pandemic shut things down. Why? Is there a mistake in the X-axis dates?
  - The Figure caption has been adjusted to include the overlaps in dips. The ticks on the x-axis of the figure have also been adjusted to make the timeline clearer.
- Line 162: Why is compatibility of conference apps only important for phones? Many others use tablets. Also, screen readers should be taken into consideration here.
  - The text has been adjusted to include other devices and the consideration of screen readers suggestions has also been included.
- Line 169: Virtual poster sessions have been difficult to design with limited success? Be sure to check out the American Geophysical Union Virtual Poster Showcase was an excellent example for how this can be done, and it was done well before the pandemic. <https://www.agu.org/honors/virtual-poster>
  - The text has been adjusted to include a reference to AGU as an example of an alternative virtual poster session. However, we could not find communication about the outcomes and the session has been discontinued since then, so it has not been discussed in detail.
- Line 182-183: Virtual options do not reduce financial barriers to attendance. Virtual options are expensive and most often this expense gets passed down to attendees through registration. Be sure to differentiate between fully online and hybrid here. It is true that fully online conferences may be less expensive (line 185), but this potentially presents a misconception by stating all virtual options are more accessible due to the reduced financial cost.
  - The text has been adjusted to reflect the differences in financial costs. However, it is noted that the experience is different for both types of attendees.
- Page 8 paragraphs do not flow well. Paragraph on line 207 seems like an extension of paragraph following line 194.
  - The paragraphs of Pg 8 have been reviewed and changed to ensure flow as suggestions.

- Line 226: closed captioning for virtual events are rarely mentioned, this is really the same for in-person conferences.
  - Reference to the lack of closed captions for in-person events has been included.
- Line 256: ‘...suggest themselves as volunteers’ – we should tread cautiously here. Volunteers, especially those from underrepresented groups, are commonly exploited for their time. Is there a way to amplify their voices in the design and development of a hybrid event, and offer some compensation (e.g. conference discount or full registration) for their time without requiring them to volunteer. Also, avoid potential tokenism here (explained line 271)! Many people get asked to volunteer or to speak as a ‘representative’ of an underrepresented group. We all need to do better to avoid this situation.
  - The text has been changed to reflect the above suggestion, and emphasize other ways for people to be involved.
- Line 264: ‘...because people engage in different ways.’ - examples?
  - Examples have been added to the text.
- Line 267: ‘diversity of conversations’ or rather “broad perspectives and worldviews”
  - The text has been changed to reflect the above suggestion.
- Line 269: ‘...give people the opportunity...’ or rather “encourage people to integrate discussions about their research and DEIA at the same time.
  - The text has been updated to include this suggestion.
- Line 284: Adding in “neurodiversity” in this line seems very deficit-minded. There are other reasons to have pre-event meetings, not just for people with disabilities.
  - The text has been adjusted to remove reference to neurodiversity and keep it as a more general statement.
- Line 297: Recording of the event shared after... how about offering a platform for continued, asynchronous discussion that is inclusive of those who could not attend in real-time?
  - The above suggestion has been included in the text.
- Line 302: This budget section could use further development. Many conferences, AGU and GSA included, are considering or have already eliminated virtual/hybrid options due to cost. What can be offered in this section to suggest alternative supports to this while maintaining the benefit of so many who cannot/will not attend in-person?
  - The text has been adjusted to expand based on the above points. However, it is important to note that costs depend on the needs of an event, and consideration of virtual elements should not be dismissed based on potential costs. This is more of a challenge for hybrid events, but there are several simple steps that can be undertaken to ensure the most accessible environment, including using a microphone or using basic streaming options. Other considerations (e.g., sponsorship) have been included as suggested,

but this area will need further discussion and open dialogue across the community to fully create an inclusive environment.

- Line 320: Talks on demand: pre-watch and view with questions; asynchronous community discussion.
  - The text has been updated.
- Line 336: uploading videos after, while it may be accessible, and less expensive than real-time video, is not inclusive and community-focused.
  - The text has been updated to include suggestions for alternative live-streaming services to allow more inclusive events, as highlighted.
- Line 338: Consider screen-readability as well.
  - The above suggestion has been included in the text.
- Line 361: This would be a great section to offer, or point to, presenter guidelines for creating and giving an accessible/inclusive presentation. Consider this resource (perhaps throughout this manuscript) by Dr. Gabi Serrato Marks: <https://blog.ucsf.edu/science-blogger/how-to-make-professional-conferences-more-accessible-for-disabled-people-guidance-from-actual-disabled-scientists/>
  - The above suggestion has been included under 'Accessibility in presentations' under Section 3.1.6.
- Line 370: Explain how captioning can minimize screen fatigue in virtual events. Captioning done poorly can enhance screen fatigue. Also in this section, recommend CART services for real-time captioning [<https://www.nad.org/resources/technology/captioning-for-access/communication-access-realtime-translation/> ], and stress that everyone must use a microphone for both in-audience participants, as well as anyone attending online. Virtual formats do not pick up all questions/discussions, and transcription certainly won't pick up on what is being communicated if it is not amplified.
  - The above suggestion has been included in the manuscript.
- Line 405: There are several resources that mention Color vision deficiency. Please cite some of them here. Example: <https://rock.geosociety.org/net/gsatoday/groundwork/G322GW/article.htm>
  - Additional references have been included as suggested.
- Line 420: PLEASE mention that these spaces must be separate. Quiet spaces are not meant to be shared with people on a conference call or breast-feeding/pumping. These all require their own space. There have been conferences that combined these spaces... serious fail!
  - The above suggestion has been included to clarify these spaces should not be combined. Agree that combining these is a bad fail!
- Line 439: Don't forget the importance of using microphones throughout the session room.
  - The above suggestion has been included.
- Line 442: Virtual attendance still requires childcare and balancing other work. This is not just unique to live/in-person talks.

- The text has been adjusted to be clearer.
- Line 450: Excessive preparation happens when people are giving a live presentation, also.
  - The text has been adjusted to be clearer on this point.
- Line 467: Video captioning on recordings: Provide presenter guidelines for how to do this in multiple platforms. OR, require everyone to create recorded presentations in Google Slides with the auto captioning on.
  - The above suggestion has been expanded on in the text.
- Line 474: Do panel sessions need to be live? If we're creative, recordings of presentations can be combined together along with pre-determined questions and asynchronous follow-up discussions by all panelists.
  - The text has been adjusted to include consideration of other ways to deliver panel sessions.
- Line 482: Code of Conduct, how will violations be submitted, recorded, and addressed?
  - The text has been adjusted to include the above suggestion.
- Line 488: Where will attendees/presenters go to get assistance when needed?
  - The text has been expanded to include the above suggestion. This will depend on whether the event is fully virtual or hybrid, but pre-thought is needed in both situations.
- Line 505: Volunteers and staff, how will daily communication and urgent updates be handled?
  - The text has been updated to include the suggestion of using a messaging platform for daily communication.
- Line 510: Questions from the audience: Be sure everyone uses a microphone, at all times, no exceptions! Just because you talk loudly, doesn't mean people can hear you. Some people have assistive technology that uses the same frequencies as the microphone. This is incredibly necessary for both online and in-person. (Restating this in 'Event Etiquette', line 530, might be a good idea. You can never say it too much).
  - An additional statement on using microphones, during both online and hybrid events, to support wider inclusion has been added. This also links back to earlier comments about the use of microphones.
- Line 550/555: FEEDBACK should not just be something people provide after an event. There should be countless opportunities for people to give feedback prior to (registration process, attendance planning, etc.) and during the event. Have QR codes posted everywhere where people can open up an online feedback form. Have an information desk and an online help desk open at all times for real-time communication of issues and concerns.
  - This has been included in the Feedback section to reflect feedback should not just be something collected after the event,

- Line 579: ‘...and inclusion they have provided.’ Who/what is “they” – virtual opportunities?
  - The text has been adjusted to clarify the sentence's purpose. This sentence emphasizes the move back to purely in-person events would lead to the exclusion of many people and dismiss the lessons learned over the past few years about the potential benefits of online components.
- Line 591: ‘...may exclude some participants.’ MOST participants, actually.
  - The text has been adjusted with the above suggestion.
- Line 595: planning must include authentic voices of the participants that will be most impacted by the decisions being made. Suggested reference:
  - <https://www.tandfonline.com/doi/abs/10.1080/10899995.2020.1768017>
    - The text has been updated to reference the above point.
- Line 598: Yes, ask about virtual access needs before the event, but also have a way of contacting should real-time requests/issues/concerns arise during the event.
  - The above suggestion has been incorporated into the manuscript.
- Line 607: Accessible and open communication is key, before, during, and after the event. Provide opportunities for people to offer and receive information about every aspect of the event.
  - This suggestion has been incorporated into the text.

## **Reviewer 2 - Anonymous**

The manuscript “Planning virtual and hybrid events: steps to improve inclusion and accessibility” focuses on the organization of conferences, highlighting what should be taken into consideration when planning this type of events. The title is clear, the manuscript is well-written and well-structured. All figures are referred to in the next. The bibliography seems appropriate.

Following what has already been highlighted in other comments/reviews, I underline:

- Line 38: “and parachute science, (where international...” (add comma, remove parenthesis)
  - This suggestion has been addressed in the text.
- Line 101: “We chose to limit our search to articles with the words ‘virtual’, ‘online’ and ‘conference’...”. It seems that the word “hybrid” has not been considered, even though the hybrid format was already available for conferences.
  - The search excluded the term ‘hybrid’ as it led to biased search results bringing up other hybrid references like hybrid cars, etc. The terms were chosen as the focus since even with hybrid events, we are focusing on the online elements.
- Line 180: “global north” has lowercase initials, whereas “Global North” and “Global South” (e.g. lines 50-51) have uppercase initial. Please, maintain the same rule throughout the whole manuscript.
  - This has been addressed in the manuscript.

- Lines 418-423: In addition to what is described here, in person events may also include sensory room(s) and provide fidget toys. Regarding the food, also other options should be taken into account: vegetarian, vegan, gluten free, lactose free, etc. Also providing the list of ingredients is important, as someone may not be familiar with the type of food offered.
  - This suggestion has been included under ‘Other Considerations’ in reference to in-person attendance during hybrid events. But it is important to note, this article focuses on the virtual components and so does not fully cover the accessibility needs of in-person attendees during hybrid events.
- Lines 550-553: The evaluation process of an event can take place at all stages, from the planning (front-end evaluation), to the event taking place (formative evaluation), and after the event (summative evaluation). A questionnaire “should” always be included in the follow-up email and carefully planned in advance. Organizers should also be aware that typically the number of responses could be rather low (around 10%). However, online questionnaires are just one of the means available to evaluate an event, as there are also other qualitative and quantitative methods. I deem that, in this manuscript, more space should be given to the importance of evaluation and to how it could be implemented.
  - Further consideration of evaluation has been included in the manuscript based on this and comments by other reviewers.

I thank the authors work the interesting review, that provides useful tips.

### **Community comments - Martin Griffin**

Planning virtual and hybrid events: steps to improve inclusion and accessibility

Line # Comments

- 332 - CHANGE: such as Zoom, TO such as Zoom, and Microsoft Teams
  - This change has been included in the manuscript.
- 338 - ADD: reliable captions
  - This change has been made in the article.
- 339 - ADD: When choosing a platform or technology provider, ensure that they support your necessary requirements to deliver your conference’s goals and vision. Prepare a set of questions, no matter how many, and inquire till you are re satisfied on the service provided. A few standard details you can ask your potential virtual events provider include
  - The type of sessions you’re looking for
  - The learning curve required for adapting to the event tech
  - Reporting metrics that will be available during/at the end of the event
  - Design options for the virtual environment, booths, and landing pages
  - The engagement and networking tools
  - Any third-party plugins or other affiliations

- The extent of customer support in your time zone
  - What accessibility features are available
  - The above suggestion has been incorporated where relevant to the outlined paragraph, including an emphasis on choosing the right platform for the event being organized. Also, consideration of data protection measures has been included, as different platforms will offer different securities, and if emails are being collected this information needs to be shared with plans for storage thought about.
- 344 - ADD: It's time to make use of Facebook, LinkedIn, Twitter, Instagram, YouTube, and any other platforms that you see your potential audience engaging with, to market your event and increase registrations.
  - This suggestion has been incorporated into the next paragraph which opens with a discussion of social media use.
- 346 - ADD: Social media platforms can be
  - The word platforms has been added after social media in this sentence.
- 347 - ADD: Consider targeted email campaigns
  - The word targeted has been added to this sentence.
- 349 - ADD REFERENCE: Ensure the use of alternative (alt) text1 (Chiarella, D., Yarbrough, J., & Jackson, C. A. L. (2020). Using alt text to make science Twitter more accessible for people with visual impairments. Nature communications, 11(1), 5803.)
  - The above references have been included in the text.
- 354 - ADD: with other stakeholder groups
  - This has been added to the manuscript where relevant.
- 477 - ADD: Presenters may not be able to attend and thereby may not be able to attend a Question and Answer / panel session.
  - The above suggestion has been expanded in the text to suggest providing a recording of a practice session if they are unable to attend. The discussion on panel sessions has been expanded based on earlier Reviewer comments and also addresses this.
- 485 - ADD: Across most social media platforms, a raised hand usually indicates asking a question.
  - This has been changed to reference using an emoticon specified before the event, rather than using a raised hand to avoid confusion.
- 504 - ADD: DEI Announcement
 

It is advised that organisers should have a clear equity and diversity statement visible for their conference or event. This should be displayed prominently on promotional materials and can also be used as a holding slide of the event. Organisers could develop an event specific version or adopt the Science Council Declaration on Diversity and Inclusion. Encourage the opening speaker to mention it.

  - The above suggestion has been added to the Code of Conduct section of S3.1.8.



- 509 - ADD: Consider Innovative Networking Features:  
Attendees and exhibitors usually will not attend a virtual event if it means they lose out on engagement and networking opportunities with each other. Therefore, the success of any virtual event is majorly dependent on its engagement rates. There are a bunch of different novel chat & networking features that you can add to your virtual event to make it a more immersive and valuable experience. These features include: 1:1 & Group Chats, Spatial Connect, Roundtables, Smart Matchmaking. Gamify Your Event Boring and monotonous virtual events are a thing of the past. If you do not want to lose audience engagement, you will have to think out of the box. Grab audience attention till the end by perhaps gamifying your event through fun games and activities like scavenger hunts, leaderboards, trivia, and photobooths.
  - [The above suggestion has been incorporated into the text under Other Considerations for pre-event planning, as an additional sub-heading.](#)
- 514 - ADD: It is recommend that the use of raising the “raised hand” feature or emoji reaction not to used to avoid unnecessary disruption of the presenter. Questions should supplied within the chat function of the platform or after the presentation has concluded and not to speak until called on by the organizer/chair.
  - [This has been added to the manuscript as relevant.](#)
- 519- ADD: gender specific terms for example “Welcome guys!”
  - [The above suggestion has been added to the manuscript.](#)
- 528 - ADD: In addition, certain conditions, such as some people with autism may request not to be on camera. Request participants not to have ‘moving’ backgrounds.
  - [The above points have been added to this subsection.](#)
- 529 - ADD: Data and analytics: Wherever possible make use of the platform’s data and analytics tools to measure the virtual conference success. Virtual events may determine success differently than in-person ones but reviewing wins and misses after the event is still important. Session attendance, attendee engagement, and leads gathered will always be key factors to analyze. Other aspects to look at include time in session, engagement with the session, tech success, and survey results during and after the event.
  - [The above suggestion has been included as an additional sub-section, and the remaining ideas around feedback have been included in section 3.3 Stage 3: After the event under the relevant sections.](#)
- 550 - ADD: Feedback of participants provides participants with the opportunity to share their thoughts and experiences on both the positives and negatives. Doing this can provide invaluable information on how to build on and plan more successful events in the future.
  - [The above suggestion has been added to the follow-up email sub-section, with further details outlined in the Feedback section.](#)
- 553 ADD: survey./ polls.
  - [This has been added to the manuscript.](#)