

VIRTUAL CONFERENCING AS A TOOL FOR ACHIEVING AN ACCESSIBLE, INCLUSIVE ENVIRONMENT. A.C. Cowart¹, ¹Stony Brook University, 255 Earth and Space Sciences Building, Stony Brook, NY, 11790 (justin.cowart@stonybrook.edu)

Introduction: The organization of virtual conferences in response to the COVID pandemic provided a glimpse of what future large-scale virtual conferences may look like. Although these conferences experienced several accessibility and engagement issues, these issues arise from the combination of several factors including: the short notice provided by the pandemic situation, community inexperience with virtual platforms, and first-time hiccups. Unfortunately, the net response to these issues appears to have been negative. As robust COVID pandemic response measures have been deprioritized, community sentiment appears to favor a “return to normal” with in-person conference formats. This desire is unfortunate, as virtual conferences provide several strong advantages in responding to problems associated with accessibility and inclusivity in the planetary science field. Here, I briefly describe some of these issues and areas in which in-person conferencing creates an inaccessible or non-inclusive environment. This is not intended as an exhaustive list but aims to highlight several problem areas that have repeatedly arisen in discussions with fellow planetary scientists.

Problem A – Personal Safety: In-person conferencing commonly occur in spaces in which working scientists may be physically, mentally, or socially uncomfortable. For example, the annual Lunar and Planetary Science Conference is held in The Woodlands, Texas. In recent years, the Texas state government has passed (or attempted to pass) several measures reducing the rights of marginalized populations and encouraging citizen policing of the targeted populations. In this environment, historically marginalized groups may face negative interactions with law enforcement and discrimination from the surrounding community. These policies also have a chilling effect on personal expression, such as open expressions of gender identity (e.g. dressing in gender-affirming manner).

In addition to issues relating to the political environment, scientists also face safety issues regarding the medical environment. In-person conferencing presents a health risk to scientists, particularly immunocompromised / immunosuppressed groups. “Con crud” – or catching any one of the number of illnesses brought to the in-person convention site through travel and close contact – is a normalized experience associated with convention

attendance. This is in part because for most scientists, con crud is merely an inconvenience. However, for scientists with immune system issues, the presence of con crud may cause longer-lasting health effects or even discourage conference attendance entirely. The negative sociopolitical response to non-pharmaceutical interventions for COVID, including masking, increases the threat faced by immunocompromised scientists.

These above issues are present to a greater or lesser extent in every in-person conference environment – while some locations may be *safer* than others, they still do not provide the same sense of safety provided by a familiar environment.

Problem B – Neurodiversity: Neurodiversity describes the variation people exhibit in the ways they think, including how they learn, socialize, maintain attention, and express themselves. Although developed to describe behaviors associated with the autism spectrum, it is useful to incorporate other groups within this framework, such as those with auditory processing disorders, learning disabilities, and ADHD, among many others. In this abstract I will describe people who exhibit normative ability as “neurotypical,” while those who do not as described as “neurodivergent.” Academic learning is geared towards neurotypical thought patterns and learning behaviors. This orientation towards normative ability can be illustrated with several shortcomings present in in-person conferencing. For example, verbal presentations rely on normative levels of hearing, as sign-language or closed captioning services are typically not available. Poster sessions rely on individuals’ ability to engage effectively with large volumes of text to identify research that may be of interest to them, which may prove problematic for those with dyslexia. Social interactions are often uncomfortable for those with autism or an anxiety disorder, effectively causing them to withdraw as the conference proceeds.

In-person conferencing provided neurodivergent persons with the toolset to engage effectively with conference presentations for the first time. The ability to submit questions via chat allowed socially anxious individuals to engage in ways they may not have been comfortable with in an in-person format. The ability to watch presentations or read posters at leisure allowed those with information processing issues to absorb a greater amount of conference material than they otherwise would have. Presentations could contain

closed captioning, allowing the hard of hearing to better follow the presentation. However, these benefits are not limited to neurodivergent individuals – virtual conferencing allowed neurotypical individuals to reduce scheduling conflicts between presentations of interest. From this standpoint, virtual conferencing allows for more effective and efficient exchange of information.

Problem C – Cost: The costs of attending an in-person conference can be daunting or prohibitive, particularly for early career scientists. While costs are usually covered via institutional processes (e.g., travel advances, reimbursements, travel grants), aspects of these processes may leave scientists in a financial deficit for weeks or months when the system works as expected. This process may take even longer when scientists and their institutional accounting structures disagree on which costs are covered by their funding sources, a relatively common occurrence.

In the last five years, the average distant out-of-town attendance cost for the Lunar and Planetary Science Conference has been between \$1500-\$2500 depending on airline ticket prices, choice of lodging, and other logistical considerations. These costs have risen with time, and in effect, have increased the financial barrier to participation over time. Although several tactics have been adopted to address the issue, including travel grants and awards, these tactics do not sufficiently address the full extent of the problem.

I will use three examples from the LPI Career Development Award to illustrate this issue. First, the award is presented “to the top applicants” in a format presupposing a good relationship between student and advisor, familiarity with producing attention-grabbing application packages, and institutional ability to produce research that is considered the best possible use of limited funding. These issues are particularly disadvantageous for undergraduate and early graduate students. Secondly, “due to security issues, citizens of countries on the U.S. State Department Designated Countries List are not eligible” for the award. This functionally excludes several large groups of international scientists, particularly those from China and the Middle East. Finally, the award sets the expectation of approximately four hours of volunteer service, or a full half day of a four-and-a-half-day conference. This effectively reduces the time available for a disadvantaged award recipient to network relative to others.

Rather than relying on a patchwork of funding sources that do not cover all interested parties and presume early career scientists to be aware of all possible funding sources, virtual conferencing

effectively reaches more scientists in need by lowering barriers to entry across the board.

Adopting and Integrating Virtual Conferences:

The purpose of this abstract is not to advocate solely for “virtual only” or “in-person only” conferencing, but to highlight several of the issues associated with in-person conferencing and to advocate for a stronger integration and adoption of the virtual environment. As alluded to in the section regarding neurodivergency, people have different attitudes regarding what does and does not work for them. Virtual conferencing is not a one-size-fits-all solution, but it does address several long-standing issues inherent to an in-person format.

Complaints regarding COVID-era virtual conferencing centered on the strong difference in experience between the familiar in-person format and unfamiliar virtual format. Many scientists expressed doubt about its utility as a networking tool, others lamented the loss of face-to-face meeting. However, many others thrived in the environment, using the toolset to their maximum advantage. Scientists who were previously unable to attend in the past, who feel uncomfortable within an in-person setting, or have differences processing information were able to develop a conference experience that worked for them. Unfortunately, this disconnect in conference experience appears to have been generational, with early career scientists looking for career opportunities actively networking with one another, and established scientists with the career opportunities largely absent from the picture.

What is needed is stronger buy-in to the virtual conferencing format and integration of the format with in-person conferencing. The discomfort experienced by those favoring in-person conferences is similar to the discomfort typically felt by those favoring virtual conferences. Integration of the two formats and more proactive engagement with tools that aid marginalized groups is needed should planetary science wish to become a more accessible and inclusive field.