

# Ensuring deaf access in science



**We ask how the scientific community can make academic spaces fully inclusive to our deaf colleagues.**

Scientific progress relies on effective communication. Deaf and hard of hearing scientists, however, often face communication barriers that limit their ability to engage in scientific spaces.

For deaf scientists who use sign language, scientific discourse can be a particular challenge when the language does not yet have the necessary tools for it – as is the case with American Sign Language (ASL). In this issue, we feature a [Viewpoint](#) by four scientists who use ASL and are part of a community effort to expand ASL for scientific contexts. They share the complexity of their process: in addition to constructing new signs that are both conceptually and linguistically accurate, they must also figure out how best to combine the signs within the grammar of ASL, ensure the terms work in various contexts, model their usage through videos and disseminate these new alternatives to the broader ASL community to experiment with and potentially adopt. Several initiatives are involved in every stage of these efforts, including [Atomic Hands](#), [Quantum ASL](#), [Sign Language Incorporation in Chemistry Education \(SLICE\)](#) and [ASL Core](#). British Sign Language – an entirely different language that is not mutually intelligible with ASL, as neither is linguistically related to English – has its own [Glossary Project](#).

Although the [Viewpoint](#) highlights deaf scientists who are removing their own communication barriers, we want to emphasize in this Editorial that it's also up to hearing scientists to share the work. Here, we collate some resources for hearing scientists to make labs, workplaces and classrooms more deaf-friendly and inclusive.

[The Mind Hears](#), a blog written by deaf and hard of hearing academics, has a fantastic and evolving [list of recommendations for hearing people in academic workplaces](#). Certain suggestions, such as making a habit of asking speakers to repeat questions they were asked, remove some of the burden from deaf colleagues. The list also provides specific guidelines for common situations, including meetings of various sizes (say, faculty committees and research groups), in-person and virtual presentations and incidental conversations like passing in the hallway.

To create more inclusive research environments and classrooms, hearing faculty and peers should first ask for each individual's communication preferences and proactively provide that access in all situations and conversations. Faculty mentors should welcome accommodations, which might include sign language interpreting,

real-time captioning or preferential seating for better sight lines – and advocate on mentees' behalf if issues arise with the university's arrangements<sup>1</sup>. Deaf undergrads in science research internships<sup>2</sup> identified certain traits of mentors and colleagues that related to positive research experiences: awareness of deaf experiences and identities; understanding of bilingualism (for example, ASL for non-written and English for written communication); and skills such as maintaining eye contact and knowing to perhaps wave or lightly tap a shoulder for attention. [Mutual support](#) from another deaf peer or a deaf cohort can also go a long way, something to keep in mind for those in charge of organizing programmes.

Hearing scientists should also learn to spot academic contexts that leave out deaf individuals. An [article](#) by Tom (Lok Ming) Tam describes some of these invisible barriers. For example, deaf scientists often miss out on incidental learning, the informal and unexpected interactions that help to develop scientific literacy – such as overhearing lab mates' conversations at the bench, or participating in a group discussion in a noisy poster hall. At conferences, even when accommodation needs are met, deaf attendees may have to deal with dark lecture rooms that obscure interpreters or presenters, or they may miss content owing to the lag between a spoken presentation and its transmission in visual form<sup>3</sup>. Virtual platforms have their own set of considerations. John Dennehy [reflects](#) on how the COVID era changed his ability to teach and engage with fellow faculty: first with challenges, such as lack of captioning, speech distortions or turned-off videos; and then for the better, as live transcription and remote etiquette became mainstream. Those planning virtual events should read this excellent [guide to make them more deaf-accessible](#) by Ahmed Khalifa.

Deaf scientists deserve to communicate at parity with their hearing peers. Inclusivity requires a collective effort from the scientific community, so we call on hearing readers to ensure that our shared spaces are fully accessible.

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## References

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