

Appendix A. Definitions of shared conference traits for the pure virtual, one hub and node, multi hub and node, multilateral hub and node, and in person conference models, as outlined in Figure 1. The greyed out areas indicate the conference models that do not benefit from the particular trait by being either unfeasible or inapplicable.

	Pure virtual	One hub + node	Multi hub + node	Multilateral hub + node	In person
Research or family visits				<p>Opportunities for researchers or delegates to visit labs and/or family or friends.</p> <p>Conference locations near research labs can facilitate lab visits.</p>	
Tourism/leisure			<p>Allows travel to new locations and meet people from different cultures.</p> <p>Allows convenient opportunities to add holiday periods to conference travel.</p>		
Social functions		<p>Functions, such as the conference dinner and welcome drinks, form the social agenda of the conference, facilitating both casual and formal networking opportunities.</p>			
Field trips/workshops		<p>Field trips provide a structured environment to facilitate research discussion, learn new skills, and form collaborations in specific areas.</p>			
Conference food/beverages		<p>Food and drink breaks at conferences allow targeted and <i>ad hoc</i> networking with peers and potential new collaborators.</p>			
Poster sessions	<p>Poster sessions allow directed discussion on your own research and allow for extended time in a casual setting to build upon your research.</p>				

Professional development	<p>Presenting talks and posters at conferences improves research and professional acumen.</p> <p>Organising symposia and chairing conference sessions improves skill set and increases recognition from science community.</p>	
Networking opportunities	Conference atmosphere encourages networking among peers and fellow scientists allows unparalleled opportunities to build collaborations, advertise research and professional portfolio, learn about current research, and increase exposure to new research areas.	
Disseminating research	Conferences afford unique opportunities to advertise new research, pitch specific ideas to persons of interest, and peer-review new ideas in-person.	
Improve communication	<p>Presenting talks or posters at conferences improves specific communication skills that translate to everyday tasks, such as problem solving, negotiating, and presenting arguments, as well as increase employability.</p> <p>Virtual format can combat shyness and overcome barriers between people at different career stages</p>	
Affordable delegate registration	Registration fees can become more affordable through remote access to conferences by reducing travel costs, allowing more students in general and scientists from developing countries to attend.	
Pre-recording/availability	<p>Virtual and remote access conferencing increases availability of conference material, such as talks, posters, and symposia, to delegates and the wider science community.</p> <p>Virtual conference material can be pre-recorded prior to the conference to ease organization for both delegates and conference committee.</p> <p>Virtual formats of conference material allow talks to be screened on demand like Netflix, eliminating talk and poster clashes.</p> <p>Virtual formats allow multiple delegates to simultaneously interact with poster presenters.</p> <p>Pre-recording allows for some peer-review, encouraging reproducibility of research.</p>	

Wider breadth of delegates	Encompassing a wider breadth of delegates from more countries, including developing ones, diversifies the conference scientific and cultural environment.	
	Virtual formats ease access to specific people that may otherwise be difficult with in person conferencing.	
	Virtual formats increases exposure to a wider range of attendees to forge more diverse networks.	
Cost effective design and maintenance	Virtual formats ease conference production and maintenance costs by eliminating large venue hire, including staff and catering costs.	
	Conference committee can reduce the need for allocating travel scholarships directed at students or developing countries, thus freeing up funds to either consolidate for a larger award or to allocate elsewhere.	
Online language translation/subtitles	Presenting talks and posters is difficult for English as Second Language (ESL) delegates, so virtual formats allow convenient access to online language translation services.	
	Conference material from presenters can be subtitled for ESL delegates.	
	Chat room and online discussions can be easily translated, allowing for broader and easier networking between different cultural backgrounds.	
Reduced need to travel	Virtual formats reduce the need to travel long distances to conference sites. Targeted hub locations for the one hub, multi hub, and multilateral hub models ensure travel requirements are minimised.	
Low environmental impact	Pure virtual formats reduce the environmental impact of long distance air travel, a pertinent issue for ecology/environmental science conferences.	

	<p>Pure virtual formats reduce utility, and thus environmental, costs of running large conference venues.</p>	
<p>Simpler administration</p>	<p>Virtual formats simplify administration by eliminating large conference site hire, reducing people power required for organisation, and reducing auxiliary costs behind organising travel scholarships offered for delegates.</p> <p>Pure virtual formats allow potential to more easily track engagement and activity levels of conference delegates for specific presentations, such as symposia, for gathering more detailed attendance data to improve future conference designs.</p>	