Ten simple rules towards an inclusive conference

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Abstract (optional from what I've seen)

The authors of this article participated in the organization team of the annual user conference of the R Project for Statistical Computing, held in July 2021. useR! conferences are non-profit events, organized by volunteers from the R community and arranged by the R Foundation. The conference attracts a broad range of participants from academia, industry, government, and the non-profit sector. For 2021, we aimed to build a high-quality virtual and explicitly global conference in a kind, inclusive, accessible, and welcoming environment for everyone. In this article, we share a few lessons learned in the process. We streamline our most important learnings in 10 simple rules to host an inclusive conference. These rules apply equally to academic, industry, or mixed conferences; the rules are inspired by a global experience but also apply at the regional or local level.

Introduction

Conferences are spaces to meet and reconnect with members from a specific community, learn about advances in the field, and share our recent contributions. However, conferences are likely to reproduce the systematic discrimination occurring in other spaces in our fields. Conversely, efforts to address systematic discrimination in conferences and make them inclusive spaces can have a meaningful impact in our communities and the lives and careers of their members.

This article suggests rules to pivot traditional conferences towards diversity and inclusion, and strive to build more inclusive and welcoming communities. Some scholarly or technological communities are formally structured as learned societies (e.g. the International Geographical Union or the Royal Statistical Society), others are composed by networks of less formal local groups (e.g. R User Groups or Python User Groups), and others may not have any established structure. For the latter, conferences may play even a bigger role in shaping the community, since there is no other organization or institution to gather the community members.

The rules written here are directed to people who are part of a stable meetings committee that oversees the site/location selection process, that coordinates with the local organizers of conferences, or even the local/virtual organizers who desire to make an inclusive conference starting at the planning stage. These tips stem from the authors' experience of organizing useR! 2021, a virtual and global statistical computing conference for users and developers of the R programming language [1]. We embraced the challenge of organizing a high-quality virtual conference in the context of the COVID-19 pandemic and making it a kind, truly inclusive and accessible experience for everyone. Here, we share the lessons learned within the past year of organizing this global useR!2021, summarized as 10 simple rules towards an inclusive conference.

1 Embrace all dimensions of diversity

Diversity encompasses multiple dimensions: age, physical ability, career stage, gender, gender identity, geographic origin, language, neurodiversity, race, religion, sexual orientation, and socioeconomic background, to name a few. Human diversity should be celebrated and respected in every way. Nonetheless, we live in a world with implicit hierarchies along these axes, and some statuses (e.g., cisgender, white, male, from the US or Europe) hold the privilege of being the default settings for which all systems–including conferences–are consciously and unconsciously built. While no isolated initiative can change reality by itself, building a more diverse and inclusive conference starts by recognizing that these inequalities have excluded systematically whole groups of people from academia and from scientific and professional circles [2].

To be proactive allies in our conferences and communities, we should start by examining our own privileges (unearned advantages given by society to some people but not all). Privilege is largely invisible to those who have it. And we will not be able to help end discrimination and oppression if we do not recognize our privileges first and the injustices that come with them. Once we understand our own privileges, we can begin addressing them on an individual, collective, and institutional basis. Recognizing our privileges–particularly in our field and in our scientific or professional community–will help identify which subgroups have been the most excluded or discriminated against. These are the groups we need to make more effort to include. Depending on the field, region or community, it could be Black, LGBTQIA+, Muslim, or others. Intersectionality, or the complex, cumulative way in which the effects of multiple forms of discrimination combine or intersect, should be taken into account.

Investing more in effort in the most excluded groups does not mean neglecting the others (see **Rule 2** for more on that). But it will prevent from falling into the mistake of treating diversity as a checklist. It will also guide the vision of diversity for your conference–and your strategies to achieve it: Will a more diverse conference would translate into an even gender distribution in your speakers? Would it be representation of all races–especially Black people–among the head organizers, speakers, and attendees? Would it be having LGBTQIA+ friendly-spaces or community participation from key geographic regions? This exercise will also help coming up with indicators that would help the organizing team assess the fulfillment of the diversity objectives along the way.

2 Create a safe and welcoming environment

While it is essential to improve representation towards some of the most visible dimensions of human diversity, such as race, gender, and country of origin, building a truly inclusive environment means taking care of all the other aspects of diversity as well. Having consideration of religious practices, setting specific accommodations for

breastfeeding and child care, having LGBTQIA+-friendly spaces, creating community-only spaces, enforcing the use of pronouns, and acknowledging that gender is not binary are just some examples of decisions that can make inclusion real. Importantly, you can take active steps in creating a more welcoming environment without requiring anyone to disclose personal information.

Paying attention to some dimensions of diversity while neglecting others may have unintended, even harmful consequences. Lack of representation, unwelcoming–or overtly aggressive– environments hinder participation (or future participation) of people who could otherwise become active community members. A negative conference experience can divert career paths, affect lives, and exclude people from some fields [3].

Adopting a code of conduct and creating a team to enforce it are key aspects in creating a safe environment during a conference [4]. The code of conduct is a document meant to keep the community safe and should state clearly: the unacceptable behaviors, the spaces of the conference in which it applies, the consequences for engaging in unacceptable behavior, and the way to report violations [5]. The code of conduct should be displayed prominently in several spaces of the conference to deter people from unacceptable behavior. An efficient code of conduct acts as a protection for the community because the people who are the target of unacceptable behavior tend to be the ones with less power or privilege.

The code of conduct team should receive training on how to receive reports, respond to incidents, and communicate their responses, and organize accordingly. A diverse code of conduct team will be more understanding of power dynamics and sensitive to discrimination and harassment issues. There are also disciplinary cultures and geographical considerations that may need to be considered when developing and communicating the code of conduct (CoC). We strongly recommend reading 'How to Respond to Code of Conduct Reports' [5] as an excellent starting point for the Code of Conduct team work.

3   Have an inclusive and diverse organizing team

A genuinely inclusive conference can only be organized by an inclusive and diverse organizing team. Build a team with people from different regions, genders, socioeconomic statuses, and other aspects of diversity. Particular attention should be paid to the usually marginalized groups (see **Rule 1**). To ensure a deeper understanding and smooth communication with different diverse groups, it is essential to create a representative working group that functions as a snapshot of the community at large. If you already have an organizing team, check for gaps in its composition.

Gathering a diverse team will only work if there is real inclusion. People with disabilities often say: 'Nothing about us without us'; the same holds for other dimensions of diversity. This means that the actual life experiences, expertise, and insights from people in marginalized groups cannot be replaced by good intentions from people outside these groups. A truly inclusive and welcoming space is one in which everyone in the team is invited and allowed to bring their experience to bear.

Creating and maintaining such a team and space may seem more challenging than working in homogeneous teams, but the positive outcomes are worthwhile. Having diverse people in decision-making positions will affect positively all the other aspects of your conference because all the processes will benefit from their input, expertise, and distinct perspectives [6]. In addition, a diverse team plays an important role at creating a welcoming space because representation–seeing people with similar life experiences occupy public spaces, positions of power, and breaking negative stereotypes–is one of the best ways to create a sense of belonging (see **Rule 2**).

The following advice should apply to any kind of team, but are specially relevant

when working with people from marginalized groups. First, rethink power relationships 113
inside the group and share power. Be committed to examine power relations inside your 114
organizing team and challenge it during all the process. Don't expect self-nomination 115
and voting to work as mechanisms to counteract systemic inequalities. Nominate 116
directly and offer leading positions, and let people from privileged groups step down. 117
Build an environment in which every person has their voice and enforce voices from 118
systematically excluded groups. Offer mentorship and guidance if you encounter cases 119
of impostor syndrome, doubts about the use of English in communication (See **Rule 7**), 120
or others. You can, for example, break the expectations about leadership as a lonely 121
task and create smaller, co-led groups, where everyone finds their preferred tasks and 122
gets to take leadership. Splitting the workload and responsibilities should not be done 123
by putting care-taking labors–community building, meeting organization and note 124
taking, conversations with potential partners–on the hands of women and other 125
minoritized groups, while people from privileged groups take the lead in stereotypical 126
highly-valued tasks (see **Rule 4**). Make work visible, discuss collectively what should 127
be done (and why), divide and account work. Being transparent and sharing the 128
information is key to make work visible and collective. 129

Most importantly, take care of your team. Having a diverse team and executing 130
inclusive and accessible practices throughout the organizing period–it might be a year or 131
two–may require a lot of effort. The effort is worth it because it strengthens the event 132
and the community making it truly welcoming for everyone. However, having a strong 133
community as the only reward may be enough for those who are in more privileged 134
position. Some people and often the minoritized ones do not have institutional support 135
to put time and effort into the organization tasks and do not have the luxury to commit 136
to the organization for free. In addition, tasks such as receiving and responding to code 137
of conduct reports, can be emotionally intense work and should be additionally 138
rewarded. Prioritize your team's well-being. Check on them regularly and make sure 139
everyone is comfortable. Be mindful of each particular context, be flexible with hours or 140
commitments, and revise your budget (see **Rule 9**). 141

4   Consciously unbias your spotlight roles 142

When choosing or inviting people as keynote speakers, program committee, session 143
chairs and other spotlight roles, it is likely that there will not be much diversity in the 144
first set of names. Many of our biased lists are products of the existing systems that 145
have always privileged some groups of people [7–10]. Rather than deter us, this implicit 146
and systemic bias should encourage us to look further to find great people that are not 147
routinely in the spotlight. Ensuring diversity in each of these roles needs to be a 148
deliberate process. We need to go beyond our narrow and often limited networks to look 149
for, reach out to, invite, encourage, and onboard these people until there is ample 150
representation across the diversity spectrum and dimensions. 151

Make sure that every selection committee–the committee looking for keynote 152
speakers, the selection committee for abstracts, the prizes and award committees–are 153
also diverse [8,9], and ask them to be aware that everyone has implicit biases, to 154
recognize them, and try to counteract them. An inclusive and diverse organizing team 155
(**Rule 3**) is already a great starting point to overcome this bias in other roles. The 156
regional and local communities in your field are also good sources to tap into. For 157
example, for useR!2021, groups like AfricaR (africa-r.org), R-Ladies (rladies.org), MiR 158
(mircommunity.com), Forwards (forwards.github.io), and LatinR (latin-r.com) were 159
fundamental to reach people for the organizing team, potential presenters, to co-lead 160
social events, and attendees; some of them even held spaces to help the members of 161
their groups to prepare abstracts for submission. When organizing an international 162

academic conference, you may reach local associations, student organizations, or other Early Career Researchers groups or communities of practice: ask for their requirements and barriers, and explicitly invite them to contribute to the conference. Since many conferences are held with the primary goal of displaying cutting-edge work led by senior scientists and academics, early career researchers are often disadvantaged. Diversity should spread among all speaking roles, and the conference should also help raise the profiles of early career researchers, fostering collaboration and building their skills.

Furthermore, consider bringing to the spotlight the people that have contributed to your field in more collaborative ways [11]. You can, for instance, reframe the awards ceremony to acknowledge those who prepared accessible slides and presentations (see Rule 6), to acknowledge being mindful of inclusiveness. Community building, for instance, is challenging and usually unrewarded when compared to publications or software development [12]; give the people who deliberately took the time to work on their communities the recognition they deserve. Defy the stereotypical criteria for success by acknowledging these community practices. Finally, do not restrict people from marginalized groups or community-builders to talk or work only in issues related to Diversity, Inclusion, and Accessibility. Recognize their areas of expertise and respect their will regarding participation (or not) in community-building events.

5   Have a strong online component of the conference

In-person interaction in conferences is priceless, but only for the ones who can afford to attend. Barriers such as cost of registration, transport and accommodation, the logistics of long-distance travel, and discriminatory visa applications, are particularly true for global conferences that usually take place in high-income countries [13, 14]. Online conferences are more inclusive: they do not require a visa or a big budget, and are more accessible to people who may be unable to travel because of health issues or family responsibilities [15]. This means that online conferences have a greater reach, not only in terms of participants but in terms of the tutors and presenters that can participate [16, 17]. The online format may also make it easier to be inclusive of geographic regions by encompassing several timezones in the week or easily deciding to rotate the favored timezone year to year, without depending on a conference central location.

Networking and socializing in online conferences may be challenging, mostly because we are used to personal interactions at coffee or lunch breaks, or other in-person social settings [15]. However, social events in in-person conferences can be exclusive (e.g. galas or dinner nights at expensive venues), and they are a common place for code of conduct violations to occur. Organizers should invest time in creating opportunities to meet and bond virtually. An online event is a great opportunity to create spaces for people who do not enjoy in person networking. Some ideas in this line are: offering the option of written chat only, instead of voice or video conversations, opening events with team work like trivia, offer some events that can be passively enjoyed like movies, yoga sessions, or art displays, where attendants can choose to just sit and enjoy without talking, or have a chat channel to comment on their experiences during the session. Respect people's limits, preferences, and remember that 'the usual' does not necessarily work with everyone in your community, and that one single networking activity will never serve the whole community. It is worth trying new and varied activities that might work with subgroups of attendees. Moreover, virtual communication may make people from minoritized groups feel more included, thus participate more (e.g. [18]).

In addition to being more inclusive, an online format is more environmentally-friendly since it eliminates travel-related emissions [19–21]. Besides, if conference materials are systematically stored and pre-recorded, they can be made

available to people who missed them live or even after the conference is over. 213

Alternatively, a conference could have a hybrid format with an in-person and online 214 component. This dual format could allow a group of people to interact face-to-face 215 while providing many others the opportunity to participate remotely. The challenge and 216 requirement for this kind of setting would be to make the online component as relevant 217 as the in-person component and not just a consolation prize to the less privileged in the 218 community [20]. Needless to say, an inclusive online component of a hybrid conference is 219 not a free pass to have an exclusionary in-person component. For instance, to avoid 220 favoring the same regions in every edition, we suggest rotating the location of the 221 conference—if it is global, moving from one continent to another. 222

6 Make the conference accessible to people with disabilities

Conferences are among the least accessible spaces that people with disabilities may 225 encounter [22]. Ironically, accessibility practices are inclusive not only for people with 226 disabilities but can be beneficial to a broad spectrum of people. For instance, having 227 captions is helpful to deaf and hard-of-hearing people, non-native speakers, and 228 everyone in general. 229

If the conference is in person, the venue must be accessible for people with mobility 230 limitations. Accommodations such as a quiet space for neurodivergent people should 231 also be provided. Presenters should always speak into a microphone to make it easier 232 for the hard of hearing and for captioners or interpreters to listen to them. Regardless 233 of the conference format –online, in person, or hybrid –images used in communications 234 about the conference should be accompanied by alternative text, while videos should 235 have both captions and sound. Platforms for conference registration and abstract 236 submission, websites, and chat platforms–if used–should be screen-reader friendly and 237 keyboard accessible, with low technology requirements (hardware, software, and internet 238 connection). Captioning for presentations should be available in more than one 239 language if possible. Do not forget about making your social events accessible (e.g. art 240 shows and movies) and making sure that the materials presented are accessible for all. 241 These aspects should be tested well in advance of going live. 242

Some practices, such as making accessible slides and presentations, are not yet 243 common practice and will require great efforts from the presenters if they are not used 244 to them. For that reason, the organizing team should provide accessibility guidelines for 245 slides and presentations, encourage their use, and be available for any questions they 246 may have. Among other things, the guidelines should ask for raw and accessible 247 material to the talks before the conference, e.g., R Markdown, HTML, or TeX files; if 248 presentations are pre-recorded, the speakers should include their video and ensure that 249 their face is visible so that deaf and hard-of-hearing people can read their lips if needed 250 (see https://user2021.r-project.org/participation/accessibility/ for 251 example). 252

Most importantly, accessibility practices are not afterthoughts that can be dealt with 253 at the last minute. They require time and early decision-making [23]. Conversely, 254 inaccessible decisions are hard to course-correct, e.g., when finding out too late that a 255 venue is inaccessible for wheelchairs in an in-person conference. On the other hand, it is 256 likely that financial constraints may not allow you to make your conference completely 257 accessible and there will be choices to make (e.g. choosing between captions and 258 interpreters). Including people with disabilities, or rather, that are rendered disabled by 259 standard practices in conferences in the organizing team would allow them to take part 260 in the decisions from the beginning, spot right away the inaccessible practices that need 261

to improve (see **Rule 3**), and help make the right choices. As Sasha Costanza-Chock and the Design Justice League say, "center the voices of those who are directly impacted by the outcomes of the design process".

7 Don't let language restrict high-quality participation

In international conferences, English is often the official language. Submissions, presentations, tutorials, and workshops are in English. The platforms, the webpage, and official communications are also in English. While English is the primary language in scientific communication and one official language makes it conducive to communicate widely, opening up the conference to other languages could make it less intimidating to people who are not fluent in English [20]. Excluding them may potentially lead to missing innovative contributions due to a language barrier.

Meeting the need of linguistically diverse audience is an important aspect in inclusion that is often overlooked. Non-native English speakers may feel intimidated to ask questions or raise their views. Providing a welcoming and diverse environment by encouraging the full participation of those individuals is critical (Rule 2). If the panelist or speakers will not be presenting in their native language, it may helpful to rephrase audience questions in a less complex language. Consider letting speakers know in advance that they can ask for a question to be translated to them in their native language and that they can respond in their native language.

Advertising the conference in several languages and considering having non-English workshops and presentations (with or without captions in English) could help overcome this barrier. For instance, hosting one international day/session per conference might be a great place to start!

8 Express the welcoming spirit in your communication strategy

- Promotion: Actively reach out and promote the conference to people who have been systematically excluded/Outreach/promotion plan that reaches communities that are traditionally excluded in scientific meetings

- Express this welcoming spirit in your communication strategy: Be public about your commitment to equity and inclusion: display the CoC prominently in conference spaces, publish the diversity statement, fee waivers, abstract selection process

- Languages

- Words matter: Be careful how you talk about minoritized people, Assertively set tone of inclusion

- coherence between actions and words

- **networking** when you gather a diverse groups of attendants you also have to take care of the spaces where they will interact

If part of the community has been historically discriminated against, one should emphasize that they are particularly welcome in this event and that the organization will make it a safe and inclusive environment. Publish the diversity statement (e.g.,

`https://user2021.r-project.org/about/diversity_statement/`), the code of conduct and accessibility guidelines. Fee waivers, financial support, and ease of application/registration should also be advertised; people who fear getting rejected when applying for scholarships and waivers may find it relieving that the process will be supportive rather than discriminatory. Advertise the conference in multiple languages (rule 7). Express this welcoming spirit in your communication strategy (social networks, website, brand, and visual identity) to let people know that they are seen, respected, and welcome; that this is their space and community too.

Set the tone. In addition to excluding derogatory or discriminatory language, make the effort to teach yourself the vocabulary and the best ways to communicate to account for every culture and situation. Do not expect people to teach you –it's not their role– and accept feedback without being defensive.

9 Allocate financial resources to support the presence of diverse people in every space of the conference

Inclusion comes with a cost

Many inclusive practices come with a cost and it is important to add them to the budget when planning the conference. Good quality and professional captioning, interpreters or translators, accessible and screen-reader friendly registration tools–and chat platform if the conference is online–, paying your organizing team (see **Rule 3**), and code of conduct training, are of the some expenses that you may have to include in your budget. Budgets are limited, so it is important to estimate costs in advance and define your priorities.

Set fair registration rates and provide financial support when needed

Conferences, even virtual ones, should have registration fees for two primary reasons. The first one is that preparing the conference costs money and this is likely to translate to the participation fee. The second reason has to do with psychology: people value more the things they pay for, and there is a lower attendance rate for free events than for events with registration costs [24].

On the other hand, if we are aiming for inclusiveness and representation, the socioeconomic context of participants should be taken into account when determining the registration rates. Usually, there is a higher fee for people from the industry than for academia. A lower fee for non-profit organizations, government employees, or freelancers should also be considered. It is important to include discounts for students to encourage their participation [19, 25, 26]. Since postdoc (or trainee) statuses are not always well-defined in academia and can vary for each country, they should be allowed to locate themselves in a category they consider affordable (i.e. student, researcher or 'pay what you can'). To fix the registration costs, you can take into account the cost of living in each country using conversion factors (e.g. from the International Comparison Program report of the World Bank [13]). Consider that, while it is traditional for employers to provide–at least some–conference support in the Global North, this is not the case everywhere.

Offering scholarships or grants to attend the conference are a common way to boost participation from diverse groups, and some conferences ask for cover letters or applications but they may be counterproductive, as they can be seen as more of a

competition and attract people that might not need the money (e.g., when their PI could pay for it) but could apply for it to enrich their CV while filtering out people who do not feel entitled to earn them. Also, the process for applicants should be simplified. Applying for loans, grants, and scholarships may be an emotionally demanding task. Do not complicate the attendees' lives by asking for long essays to convince a committee that they deserve your support. For this stage of the process, a certain degree of trust goes a long way– when they say they need the support, it is best to give them the waiver rather than second guess their eligibility. Only if the applicants for fee waivers are numerous and your budget cannot allow for that many fee waivers, you could ask for a short application. You could try to reduce this risk by finding enough sponsoring money so that you do not depend on registration fees to pay for your conference.

If the conference resources allow for it, you could even take further steps to offer financial support for activities that help them have the time and resources to be at the conference: child care support, transportation fees and visa financial and administrative support (if in-person), or internet connection services (if virtual). If the conference is virtual, you may offer technical support so that attendees can record their videos, include captions, or design accessible presentations.

10   Diversity and inclusion are processes

This rule is a complement to all the other rules. It is important to have a bold vision and clear targets. Some parts might be defined as baseline assumptions that are not up for discussion. However, there will always be compromises. Ideal solutions that meet all our expectations are often not possible. Don't let the perfect be the enemy of good. As a team, this is a challenging journey. Very early on, we tried to recognize that our resources were limited (both in time of the organizing team but also in money). We had to let go of certain aspects that were important to many of us. For an inclusive conference, we need to avoid giving in because considering all aspects seems impossible and burning ourselves and the team out because considering all aspects is actually impossible.

Concluding remarks

The ten rules stated here can be adapted depending on the conference format and settings. When organizing useR!2021, we engaged in most of the practices mentioned here, and learned others along the way, so we share them here as part of our learning process. We organized useR! during a global pandemic, and as a team, this was a challenging journey. Very early on, we tried to recognize that our resources were limited (both in time of the organizing team and financially). We had to let go of certain aspects that were important to many of us. From that experience, this is our last message: your conference may not become perfectly inclusive and accessible, but the changes you make will make a difference. Also, keep working to improve inclusion in the next edition of the conference! to document and balance your work, design surveys, ask for feedback from attendees and organizers. Transfer your constructed knowledge to the next organizing team, and adapt year-to-year to include more dimensions of diversity, to address technical and social changes, and to include insights from the new organizing team. Always remember inclusion is an ambition that organizers can and should continually pursue by allowing room for learning and improvement. If more conferences and domains apply these rules, the process will get more streamlined, straightforward, and mainstream to adapt with minimal overhead. And you will make a change towards healthier, stronger, and more inclusive communities.

Acknowledgments

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