

# INCLUSIVE SCIENTIFIC MEETINGS

WHERE TO START



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Scientific meetings<sup>1</sup> can be invigorating, promote the exchange of ideas, foster new collaborations, and provide opportunities to reconnect with existing colleagues. They form an essential part of the connective tissue for the global scientific enterprise. Scientists rely on them to develop networks and knowledge that are necessary to build a career in science. Even as modes of virtual interaction become commonplace, gathering together in physical locations is still essential for building relationships and trust, and bridging different perspectives on challenging problems.

However, not all scientists have positive experiences when they attend scientific meetings. Some members of our scientific communities are left out (intentionally or otherwise); others feel isolated in meetings when they do not see others who look like them or share a common background; some encounter barriers, such as lack of childcare or safe bathroom spaces, that keep them from fully participating; and some are targets of harassment and assault at meetings ([National Science Board 2015](#)).

Scientific meetings often happen outside of our home institutions and provide an additional opportunity to make the culture and practice of science more inclusive. This document presents some concrete recommendations for how to incorporate inclusion and equity practices into scientific meetings, from the ground up. This document includes three sections:

- 1) Planning the meeting,
- 2) During the meeting, and
- 3) Assessing the meeting.

These recommendations will be updated over time to incorporate feedback from meeting organizers who focus on equity and inclusion and share their successes and failures. Sharing these experiences will allow us to iterate on these guidelines as we identify areas for improvement.

## WHY DO WE NEED THIS GUIDE?

Evidence reinforces an intuition held by many: science and innovation are optimized when a diversity of perspectives and approaches is represented. Inclusive, participatory science is better science ([Nielsen et al. 2017](#), [Loder 1999](#), [Campbell et al. 2013](#), [Freeman & Huang 2014](#)). But bias can limit access to, and contributions from, underrepresented groups in science and, as a result, limit science's impact. This has important implications for how scientific knowledge is shared and used. For example, due to affinity bias, people are more

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<sup>1</sup> In this guide, we use the word "meeting" to refer to a full suite of scientific gatherings, including workshops, symposia, seminar series, and conferences. Specific considerations for certain kinds of meetings are noted and addressed.

likely to accept and act on information when it is communicated by someone from a similar background ([Drummond & Fischhoff 2017](#)), which perpetuates existing power structures and limits access and opportunity for underrepresented groups.

We are starting to understand the ways diversity can improve science and its societal impact, but we have a long way to go to fully capitalize upon these advantages. In 2019, all-male panels are such a common occurrence that they have their own term: manels. In scientific disciplines where women are more represented, a persistent representation gap remains in awards, keynote talks at meetings, and leadership roles (for example in oceanography, [Kappel & Thompson 2014](#)). Even in disciplines where equity and inclusion have received increasing attention, issues of exclusion continue to come up year after year.

So, what can meeting/workshop organizers do to help build structure for inclusion? The information presented in this document helps build structure for inclusion. It synthesizes published best practices as well as summarizes discussions from a workshop that took place in May 2018.

## CLARITY ON LANGUAGE USE

Language is a cultural tool and as such has varied uses and meanings in different contexts and by different peoples (Gee & Gee 2007). Let's get on the same page about three common terms we'll use: diversity, equity, and inclusion.

### Diversity

Rodriguez (2016) states that:

Diversity involves the recognition of the visible and invisible physical and social characteristics that make an individual or group of individuals different from one another, and by doing so, celebrating that difference as a source of strength for the community at large (p. 242).

Diverse lived experiences provide community cultural wealth in the form of aspirational, familial, social, navigational, resistant, and linguistic capitals that vary across participants ([Yosso 2005](#)). Multiple scholars have described how diverse ways of knowing, reasoning, and engagement in knowledge production practices supports meaningful activity ([Bang & Vossoughi 2016](#); Emberley 2013).

## Equity

From Rodriguez (2016):

Equity refers to the enactment of specific policies and practices that ensure equitable access and opportunities for success for everyone. It is important to differentiate equity from equality ... in order to be equitable, we cannot treat everyone the same. To be equitable, we must treat individuals according to their needs and provide multiple opportunities for success (p. 243).

Equity would have us provide childcare for scientists traveling with children even though others may not need such services; thus resources and structures are not necessarily equal, but are equitable to ensure that all can participate in the scientific activity for which they are traveling.

## Inclusion

According to Jordan (2011):

Inclusion involves bringing together and harnessing these diverse forces and resources, in a way that is beneficial. Inclusion puts the concept and practice of diversity into action by creating an environment of involvement, respect, and connection—where the richness of ideas, backgrounds, and perspectives are harnessed to create business value. Organizations need both diversity and inclusion to be successful.

An inclusive environment transcends diverse representation. Without inclusive, respectful practices, a meeting can still be exclusionary of different perspectives, even if it has representation of diverse lived experiences.

# GENERAL PRINCIPLES

Before we dive into specifics, we want to address considerations that are relevant before, during, and after the meeting. Each of the following principles should be clearly understood by all organizers (and ideally also participants) in any meeting to foster awareness and facilitate more equitable participation:

- 1) **Implicit biases.** Implicit biases affect our perceptions and understanding of the world and impact our decision making. Since these biases are outside of our conscious control, awareness of them is key to reducing their impacts. The prevalence of implicit biases

tends to marginalize underrepresented groups in fields such as STEM, which have traditionally been dominated by people from privileged identities: white, cisgendered, straight men. In general, the less diverse or inclusive a field, the heavier the reliance on stereotypes and implicit biases towards underrepresented groups will be (whether they are women, racial minorities, LGBTQ+), the greater the harassment those groups will face (sexual or otherwise), and the more likely they will be to leave STEM fields ([Dutt 2018](#)).

- a) Conference organizers need to educate themselves on bias and develop a plan to minimize impacts of bias. This is especially important in male-dominated STEM fields because affinity bias—or the tendency to prefer people like ourselves (be it race, gender, sexual orientation, institutional affiliations, to name a few)—is very powerful and exists within all of us.
  - b) Failure to acknowledge implicit biases will result in a meeting environment where underrepresented groups will continue to be marginalized and majority groups will continue to dominate.
  - c) To learn more about implicit bias and its real world implications and impacts, some immediate places to start are: [Implicit Association Test \(IAT\)](#), [Blindspot: The Hidden Biases of Good People \(Banaji et al\)](#), and [Whistling Vivaldi: How Stereotypes Affect Us and What we Can Do](#). Additional resources include the [Kirwan Institute for the Study of Race and Ethnicity](#).
  - d) When promoting awareness on bias, conference organizers should keep in mind that shaming or blaming people is not productive. Rather, discussions and trainings should be structured in a way that allows self-reflection in a safe space for all.
  - e) Conference organizers can request that participants attend a bias training.
- 2) **Whoever talks has the power.** Equity is about access and power; whoever has the floor has the power. Listening is as important as speaking, and conference organizers can institute appropriate pauses and wait for others to process before sharing. For example, slow responses may be a result of linguistic or cultural differences, which can be accommodated through facilitation approaches that are aware and responsive to these differences. Session organizers need targeted guidance to allow an environment that welcomes and supports all voices. Consider using tools such as those in the Talk Science Primer ([Michaels & O'Connor 2012](#); specifically p.11; also see Gee & Gee 2007) that have been shown to expand equitable participation in science learning environments. Additionally, pay attention to the diversity of voices invited to speak. Does everyone at the podium look the same or share similar backgrounds?
  - 3) **Participation is not only about who is in the space, but also about how they're doing in the space.** Historically, the focus on “diversity” has meant increasing representation of individuals from different identities in science, in workplaces, at meetings, and other professional environments. Diversity is important, but it emphasizes counting “types,” rather than ensuring inclusion, providing access, and valuing contributions. Creating a

system that works for people with many different, intersecting identities is a prerequisite for making science inclusive—and it is a prerequisite to the scientific process.

- 4) **Design for universal access.** Universal design is the notion that if you make a meeting accessible to people who have the biggest challenges, everyone benefits ([Office of Disability Employment Policy 2019](#)). The Union of Concerned Scientists has published an extensive guide to making your meeting accessible ([Serrato Marks 2018](#)). There are many great recommendations here, for example: make chairs available for all speakers, and always use a microphone. Another resource to consult is Universal Design for Learning ([CAST 2019](#)).
- 5) **Make your equity work transparent.** Be public about your commitment to equity and inclusion. Share data and assessments of your meetings within your organization and beyond. Write about your efforts as models of how to make progress, naming challenges as you go. Your courage in this area models that this is always a work in progress and provides support for others to enter this work, regardless of expertise or comfort (see examples in Bilimoria & Liang 2012).
- 6) **Demonstrating progress requires data.** Establishing baseline data now and monitoring future progress is critical. You can start by collecting and sharing data on your meeting now, at the planning stages, during, and after the meeting, and continuing to collect and share it in the future. Sharing data creates accountability for yourself, and also for other groups and events around you. However, it is important to collect, store, and share data responsibly. Collect and store people’s personal information securely and appropriately, be sensitive when asking people for information about their identities, and don’t overshare personal information. Unless strictly necessary to do otherwise, maintain demographic and other information related to diversity as deidentified datasets to limit the risk of exposure of confidential or sensitive information. When maintaining personally identifying information, create a policy in place to describe acceptable storage locations, permissions, sharing, and use (e.g. [University of Michigan’s PII](#)).
- 7) **Set expectations for appropriate behavior and create structures of accountability in the event of inappropriate behavior.** Accountability for inappropriate behavior, especially from people in positions of power, is essential to create a safe space for people who are not in positions of power. These can be communicated via a Code of Conduct:
  - a) A Code of Conduct is a set of guidelines that sets clear expectations for appropriate and inclusive behavior that is desirable during the meeting, and identifies inappropriate behaviors, their consequences, and enforcement mechanisms.
  - b) Create a clear process for reporting inappropriate behavior. Be clear who the point of contact is for reporting; put it in the Code of Conduct and make participants aware of it.
  - c) Clear Codes of Conduct, even for small meetings, should be (1) developed, if they don’t already exist, (2) visible, and (3) widely shared. Codes of Conduct will come up throughout this document (e.g., [2018 AGU Fall Meeting Code of Conduct](#)).

- d) Have everyone attending—participants, guests, and exhibitors—agree to the Code of Conduct before they join the meeting (e.g., during registration).
  - e) Make the Code of Conduct visible to participants throughout the meeting for reference (e.g., on the back of name tags, along with the point of contact).
  - f) Verbally acknowledge the Code of Conduct at the beginning of the meeting.
- 8) **Who is doing the work?** Making science inclusive takes work. Historically this work has been done mostly by the very people who lack privilege in the system. Be mindful and reflect on how this work is distributed and aim to ensure that inclusivity efforts are a collective responsibility among privileged and marginalized groups. Finally, sometimes meetings lead to scientific work—projects, publications, and white papers. Doing the work can be an opportunity or (and!) it can be a burden. Here are some questions to ask:
- a) Who is doing this work?
  - b) Why are they the ones doing it?
  - c) How does that work impact the scientific reputation of the worker?
  - d) Should they be the ones doing it?
  - e) Are they early in their career and do they need guidance on how to say no?
  - f) What are ways to support doing this work, and what are resources that we have not yet identified to help with the work?
  - g) If you see a problem with workload distribution, do something (when possible).

## PLANNING THE MEETING: KEY CONSIDERATIONS

### Goals

Bring a diverse/representative group of people together to advance scientific goals. Improve representation among organizers (and organizing committees), presenters, and participants. Throughout the planning process, build the groundwork for an inclusive atmosphere during the meeting itself.

### Where to start

- 1) Set goals for equity and inclusion (see Assessment).
- 2) Choose a diverse/representative organizing committee.
  - a) The representativeness of the organizing committee is important for the representativeness of who speaks. For example, women invite more women to speak

([Sardelis and Drew 2016](#), [Ford et al., 2018](#)), bringing the proportion of women speakers closer to representing their proportion of abstract submissions.

- b) Make the organizing committee representative along dimensions including career stage, race, gender, and other axes of identity. Consider reaching out to different kinds of institutions (e.g., community colleges, Minority-Serving Institutions, disciplinary associations, think tanks) outside of your typical networks to engage scholars and practitioners whose perspectives might otherwise be overlooked. Use resources if you are having trouble (e.g. [Request a Scientist](#) and others linked there).
- c) Celebrate and provide credit and visibility to the organizers - organizing is work.

### 3) Funding

- a) Seek funding so that your meeting can provide the support people need to participate. Funds should support travel for people without other travel funds, childcare services, and making the meeting accessible.

### 4) Promotion

- a) Develop an outreach/promotion plan that reaches communities that are traditionally excluded in scientific meetings (without an intentional plan, you are more likely to include only the usual suspects).
- b) Use inclusive images and specific language in promotion materials stating that representatives from diverse backgrounds and expertise are encouraged to apply and attend.
- c) Clearly state if funding support is available on a need basis.<sup>2</sup> Also, state if special inclusion services are provided (e.g., childcare, interpreters, accessibility of the venue, etc.).

### 5) Selecting presenters and participants

- a) Make a proactive commitment to find and review as diverse a group of potential speakers as possible. The path of least resistance is to invite people you know or existing groups you know about. But creating an inclusive meeting will likely require you to go outside your network, and this necessarily takes more time than 'rounding up the usual suspects.' Consider using a data-driven approach to identify potential speakers who may not have been on your radar ([Vallence et al. 2018](#)).
- b) For meetings that require selection of participants or speakers, make a plan for determining who is invited to speak or present, and who is invited to attend. Develop evaluation criteria before evaluating abstracts or application materials. The criteria should be transparent, and you should make them available to the applicants with the application.

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<sup>2</sup> If you do provide funding, provide it up front or provide reimbursements promptly - recognize that cash flow might be a challenge, especially for people early in their careers ([Sagers 2019](#)).



- i) Make criteria for inviting presenters and participants well-rounded.
    1. Consider not only an academic CV (which can reflect past privileges and inequities), but also other contributions to the profession, such as engagement with policymakers or with the broader public, participation in mentoring programs, or advancement of inclusivity efforts.
    2. Make clear guidelines (need to have low workload for applicants and also organizers).
      - a. Example - Three bins evaluated equally:
        - i. Publications
        - ii. Outreach & education
        - iii. What expertise and experiences would they bring to the topic of the conference? (Include support for answering and a plan for evaluating this question.)
      - ii) Develop a rubric for selecting speakers and/or participants.
      - iii) Ensure accountability by independently selecting presenters and participants: ask someone other than the meeting organizers to select presenters and participants if possible/appropriate. This provides an opportunity to create standards and hold the decision makers accountable to them.
  - c) Recognize that it will take effort to create an equitable agenda. Organizers will have to counter tendencies to invite well-known presenters or participants. Organizers will also need to consider that women and other underrepresented minorities are more likely to decline invitations for reasons including increased demands on their time, limited funding and support for travel, and family responsibilities ([Gay-Antaki & Liverman 2018](#); [Schroeder et al. 2013](#)). Women are more likely to request shorter talks than longer talks ([Jones et al. 2014](#)), and possibly posters over oral presentations ([Ford et al. 2018](#), though [Jones et al. 2014](#) found no difference).
- 6) Interacting with participants ahead of the meeting:
- a) When people are invited or selected, tell them why and what part of their work is bringing them to the meeting.
    - i) People will choose to participate or not depending on how much they perceive their contributions will be valued.
    - ii) Personal communication helps people know what their expected role is.
    - iii) These personal interactions also set the stage for positive interactions among participants during the meeting.
  - b) Have participants agree to the Code of Conduct, along with their registration. (See General Principles above for more on Codes of Conduct, e.g., [2018 AGU Fall Meeting Code of Conduct](#)).

- c) Consider requiring all participants to indicate their pronouns (e.g. she/her/hers, they/them/theirs) at registration and add them to name tags or provide stickers. Be sure to also be mindful of context: is the event in a location where expressing pronouns could lead to discrimination? Have you made sure there will be gender inclusive restrooms? Use this opportunity to provide information about how to use pronouns and why (like [this website](#)).
- d) Provide options for participants to correct spelling of their names, or to indicate their preferred name, including the placement of diacritical markers (like accents and tildes) that are not necessarily in the English alphabet.

## For a stand-alone workshop or meeting

- 1) Scheduling
  - a) Avoid scheduling on cultural and religious holidays, on weekends, and outside of standard work hours.
- 2) Meeting location (for meetings where you can choose the location)
  - a) Is meeting in person necessary?
    - i) Consider the carbon footprint of participant travel to the meeting.
    - ii) Also consider that some people want to participate but cannot physically come to a meeting.
    - iii) Consider making virtual attendance possible, and also recording as many talks as possible.
  - b) Where are you holding the meeting with respect to what the topic is?
  - c) Is this location subject to legislation that is anti-LGBTQ+? If you must have a meeting in this location, have anti-discrimination protections in place.
  - d) Is the space physically accessible? See [this guide](#) by Serrato Marks (2018), published by the Union of Concerned Scientists, on making meetings accessible.
  - e) Are microphones and speakers available and accessible to make sure voices can be heard by everyone?
  - f) Are rooms set up so that visual presentations are accessible to all?
  - g) Are there or can there be gender inclusive restrooms?
  - h) Is there or can there be childcare provided?
  - i) Are there plans in place to improve financial accessibility (especially when participants must travel)?

# DURING THE MEETING: CREATING AN INCLUSIVE SPACE

## Goals

Enable and encourage everyone at the meeting to participate. Honor the contributions of all participants. Empower all voices to be heard. Ensure everyone present can do well in the space.

## Steps

- 1) Consider group dynamics and power dynamics of who speaks and who moderates.
- 2) Structure decision-making to include everyone. Important decisions made at meetings often happen adjacent to the meeting itself: over lunch, in bars, hallways, restrooms, etc. Put a system in place so that important conversations and decisions occur during the meeting, where everyone can have a voice and a vote.
- 3) Welcoming talks or comments can tee up awareness, dispositions, and skills.
  - a) Make a simple statement that inclusion is important.
  - b) Verbally acknowledge and draw attention to the Code of Conduct.
  - c) These welcoming statements can enable participants to build a shared language and understanding of terms and definitions.
  - d) Describe how moderation will happen and clearly identify the moderator.
  - e) Clearly note time constraints and stick to them. More senior and established speakers (enabled by moderators) might push their time limits, often at the expense of the time allotted to speakers earlier in their careers.
- 4) Moderate Q&A sessions with awareness of inclusion to make sure more junior and less vocal attendees can get a word in. Moderators of Q&A play an important role in making sure discussions aren't dominated by a small number of vocal participants. Intentionally elicit multiple perspectives from multiple types of meeting participants. Invite those who may not speak right away to share their views or ask questions.
  - a) Be mindful of who is chosen to ask the first question, as this will set the stage for the discussion. Consider offering early career scientists the first opportunities to ask questions, asking more established participants to wait.
  - b) Consider letting the audience prioritize questions (e.g., [sli.do](#)).
- 5) Ensure that every presenter has an audience (a particular concern for posters).
- 6) Collect feedback from participants on inclusion, and consider collecting data on participation (see Assessment).

## For a stand-alone workshop or meeting

- 1) Structure participation for inclusion—speaking and moderating discussions.
  - a) Think about how to disperse power in a meeting where people are expected to talk. Ask: Who talks? In what order? For how long?
  - b) Structure interaction to shift dynamics away from exclusion and towards inclusion. Create a structure where everyone who presents will have the attention of others.
- 2) Plan activities to help participants connect. Recognize that an important aspect of meetings is the connections made and relationships built—and that everyone should be included in this exchange.
  - a) Put thought into activities for participants to introduce themselves. Instead of asking for name and title (which plays into and may exacerbate power dynamics), ask for name and “something interesting about me you couldn’t tell from just looking at me.”
  - b) Speed connecting (goal: get participants to talk to one another).
  - c) Exchanging favors: everyone asks for and receives one favor (goal: learn how to ask for and offer help and support).
- 3) If there is a deliverable from the meeting or workshop, develop clear guidance ([Frassl et al. 2018](#)) for authorship, roles, and responsibilities.
  - a) Announce deliverables and guidance at the beginning of workshop.
  - b) Provide an opportunity for people to volunteer contributions that allows time for people to consider (not “spur of the moment”), in a low-pressure setting where a quiet or less-confident voice may not volunteer.
  - c) Consider privilege disruptions. If all else is equal, place privileged or well-established contributors further down the author list.
- 4) Encourage workshop participants to explore opportunities for post-workshop mentorships with those they met in the workshop.

## How can participants contribute to an inclusive atmosphere?

- Practice respectful communication.
- Counter your affinity bias—leave your comfort zone and reach out to people.
- Alternate using your voice and making space for other voices.
- Give credit appropriately.
- Criticize respectfully and constructively.
- Use pronouns proactively.
- If you have concerns, talk to the organizers.

# ASSESSMENT

## Goals

Assess whether equity and inclusion goals were met during the meeting. Identify and share what worked well and where things fell short.

## Steps

- Before the meeting:
  - Set goals for equity and inclusion, for example:
    - Representation of different identities, career stages, or institutional affiliations in different sessions.
    - Quantity and quality of interactions in sessions.
- During the meeting:
  - Collect feedback from participants about equity and inclusion goals (e.g., add questions about equity and inclusion to session or program evaluations).
  - Consider collecting data on participation, e.g., who asks questions ([Davenport et al. 2014](#)) and how often different people speak.
- After the meeting:
  - Which goals were met? Which goals were not met?
  - What worked well from the organizers' perspective? What fell short?
  - What worked and did not work from participant perspectives? What information might be missing?
  - Share this assessment publicly, if possible.

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# RESOURCES & REFERENCES

- 500 Women Scientists. Request a Scientist. <https://500womenscientists.org/request-a-scientist/>
- American Geophysical Union. (2018). AGU Meetings Codes of Conduct. Retrieved from <https://fallmeeting.agu.org/2018/agu-meetings-code-of-conduct/>
- Bilimoria, D., & Liang, X. (2012). *Gender equity in science and engineering: Advancing change in higher education*. Routledge.
- Banaji, Mahzarin R. (2013). *Blindspot : hidden biases of good people*. New York: Delacorte Press.
- Bang, M., & Vossoughi, S. (2016). Participatory design research and educational justice: Studying learning and relations within social change making. *Cognition and Instruction*. doi:[10.1080/07370008.2016.1181879](https://doi.org/10.1080/07370008.2016.1181879)
- Campbell, L.G., Mehtani S., Dozier M.E., Rinehart J. (2013) Gender-heterogeneous working groups produce higher quality science. *PLoS ONE*, 8:e79147. doi:[10.1371/journal.pone.0079147](https://doi.org/10.1371/journal.pone.0079147)
- CAST (2019). *About Universal Design for Learning*. Wakefield, MA: CAST. Retrieved from <http://www.cast.org/our-work/about-udl.html#XEE6289KjOO>
- Davenport, J.R.A., M, Fouesneau, E. Grand, A. Hagen, K. Poppenhaeger, & L. L. Watkins (2014). Studying Gender in Conference Talks – data from the 223rd meeting of the American Astronomical Society. *arXiv.org*. <https://arxiv.org/abs/1403.3091>
- Drummond, C., and B. Fischhoff (2017), Individuals with greater science literacy and education have more polarized beliefs on controversial science topics. *Proceedings of the National Academy of Sciences of the United States of America*. **114**, 9587-9592. doi: [10.1073/pnas.1704882114](https://doi.org/10.1073/pnas.1704882114)
- Dutt, K. (2018). How implicit bias and lack of diversity undermine science. *Scientific American*. Retrieved from <https://blogs.scientificamerican.com/voices/how-implicit-bias-and-lack-of-diversity-undermine-science/>
- Emberley, J. (2013). Epistemic heterogeneity: Indigenous storytelling, testimonial practices, and the question of violence in Indian Residential Schools. In J. Henderson & P. Wakeman (Eds), *Reconciling Canada: Critical perspectives on the culture of redress*, (Chapter 8, pp. 143-58), Toronto, ON, Canada: University of Toronto Press.
- Ford, H.L., Brick, C., Blaufuss, K. and Dekens, P.S., 2018. Gender inequity in speaking opportunities at the American Geophysical Union Fall Meeting. *Nature Communications*, 9. doi:[10.1038/s41467-018-03809-5](https://doi.org/10.1038/s41467-018-03809-5)
- Frassl, M.A., Hamilton, D.P., Denfeld, B.A., de Eyto, E., Hampton, S.E., Keller, P.S., Sharma, S., Lewis, A.S., Weyhenmeyer, G.A., O'Reilly, C.M. & Lofton, M.E. (2018). Ten simple rules for collaboratively writing a multi-authored paper. *PLOS Computational Biology*, 14(11): e1006508. doi:[10.1371/journal.pcbi.1006508](https://doi.org/10.1371/journal.pcbi.1006508)

- Freeman, R.B., and W. Huang (2015) Collaborating with People Like Me: Ethnic Co-authorship within the US. *Journal of Labor Economics*, 33(3), no. S1: S289-S318. doi:[10.1086/678973](https://doi.org/10.1086/678973)
- Gay-Antaki, M., & Liverman, D. (2018). Climate for women in climate science: Women scientists and the Intergovernmental Panel on Climate Change. *Proceedings of the National Academy of Sciences of the United States of America*, 201710271. doi:[10.1073/pnas.1710271115](https://doi.org/10.1073/pnas.1710271115)
- Gee, J., & Gee, J. P. (2007). *Social linguistics and literacies: Ideology in discourses*. Routledge.
- Inclusive Astronomy (2015-): *The Nashville Recommendations*. Retrieved from [https://tiki.aas.org/tiki-index.php?page=Inclusive\\_Astronomy\\_The\\_Nashville\\_Recommendations](https://tiki.aas.org/tiki-index.php?page=Inclusive_Astronomy_The_Nashville_Recommendations)
- Jones, T.M., Fanson, K.V., Lanfear, R., Symonds, M.R. and Higgie, M., 2014. Gender differences in conference presentations: a consequence of self-selection?. *PeerJ*, 2, p.e627. doi: [10.7717/peerj.627](https://doi.org/10.7717/peerj.627)
- Jordan, T.J. (2011). From Diversity to Inclusion. *Profiles in Diversity Journal*. Retrieved from <http://www.diversityjournal.com/1471-moving-from-diversity-to-inclusion/>
- Kirwan Institute for the Study of Race and Ethnicity. (2015). *Understanding Implicit Bias*. Columbus, OH: The Ohio State University. Retrieved from <http://kirwaninstitute.osu.edu/research/understanding-implicit-bias/>
- Kappel, E.S., & L. Thompson (2014). Invited Scientific Papers and Speakers and Fellow Awardees Little Progress for Women Oceanographers in the Last Decade. *Oceanography*, Dec 1;27(4):24-8. doi:[10.5670/oceanog.2014.110](https://doi.org/10.5670/oceanog.2014.110)
- Loder, N. (1999) [Gender discrimination undermines science](https://doi.org/10.1038/402337a). *Nature*, 402:337.
- Michaels, S., & O'Connor, C. (2012). *Talk Science Primer*. Cambridge, MA: TERC. Retrieved from [https://inquiryproject.terc.edu/shared/pd/TalkScience\\_Primer.pdf](https://inquiryproject.terc.edu/shared/pd/TalkScience_Primer.pdf)
- National Science Board. (2015). *Revisiting the STEM Workforce, A Companion to Science and Engineering Indicators 2014*. Arlington, VA: National Science Foundation (NSB-2015-10). Retrieved from <https://www.nsf.gov/nsb/publications/2015/nsb201510.pdf>
- Nielsen, W., et al. (2017) Correction for Nielsen et al., opinion: Gender diversity leads to better science. *Proceedings of the National Academy of Sciences of the United States of America*. 114:E2796. doi:[10.1073/pnas.1700616114](https://doi.org/10.1073/pnas.1700616114)
- Office of Disability Employment Policy. (2019). *Universal Design*. Washington, DC: US Department of Labor. Retrieved from <https://www.dol.gov/odep/topics/universaldesign.htm>
- Rodriguez, A. J. (2016). For whom do we do equity and social justice work? Recasting the discourse about the Other to effect transformative change. In N. M. Joseph, C. Haynes, and F. Cobb (Eds), *Interrogating whiteness and relinquishing power: White faculty's commitment to racial consciousness in STEM classrooms* (Chapter 14, pp. 241-252). New York, NY: Peter Lang.
- Sagers, J. (2019) Reimbursement policies make academia less inclusive. *Science*. doi: [10.1126/science.caredit.aax0053](https://doi.org/10.1126/science.caredit.aax0053)

- Samuel Merritt University. Gender Pronoun Resources. Retrieved from <https://www.samuelmerritt.edu/pride/gender>
- Sardelis, S., Drew J.A. (2016) Not “Pulling up the Ladder”: Women Who Organize Conference Symposia Provide Greater Opportunities for Women to Speak at Conservation Conferences. *PLoS ONE*, 11(7): e0160015. doi:[10.1371/journal.pone.0160015](https://doi.org/10.1371/journal.pone.0160015)
- Schroeder, J., Dugdale, H.L., Radersma, R., Hinsch, M., Buehler, D.M., Saul, J., Porter, L., Liker, A., De Cauwer, I., Johnson, P.J. and Santure, A.W., 2013. Fewer invited talks by women in evolutionary biology symposia. *Journal of Evolutionary Biology*, 26(9), pp.2063-2069. doi: [10.1111/jeb.12198](https://doi.org/10.1111/jeb.12198)
- Serrato Marks, G. (2018). How to Make Professional Conferences More Accessible for Disabled People: Guidance from Actual Disabled Scientists. Cambridge, MA: Union of Concerned Scientists. Retrieved from <https://blog.ucsusa.org/science-blogger/how-to-make-professional-conferences-more-accessible-for-disabled-people-guidance-from-actual-disabled-scientists>
- Steele, C. (2010) *Whistling Vivaldi :and other clues to how stereotypes affect us*. New York : W.W. Norton & Co.
- Teaching Tolerance. (2019). Topics. Montgomery, AL: Southern Poverty Law Center. Retrieved from <https://www.tolerance.org/topics>
- Univeristy of Michigan Safe Computing. Personally Identifying Information. Sensitive Data Guide to IT Services. Retrieved from <https://www.safecomputing.umich.edu/dataguide/?q=node/89>
- Vallence, A. M., Hinder, M. R., & Fujiyama, H. (2018). A data-driven approach to reduce gender disparity in invited speaker programs at scientific meetings. *bioRxiv*, 426320. doi: [10.1101/426320](https://doi.org/10.1101/426320)
- Yosso, T. J. (2005). Whose culture has capital? A critical race theory discussion of community cultural wealth. *Race, Ethnicity, and Education*, 8(1), 69-91. doi:[10.1080/1361332052000341006](https://doi.org/10.1080/1361332052000341006)





