

Achieving Speaker Gender Equity at the American Society for Microbiology General Meeting

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ABSTRACT In 2015, the American Society for Microbiology (ASM) General Meeting essentially achieved gender equity, with 48.5% of the oral presentations being given by women. The mechanisms associated with increased female participation were (i) making the Program Committee aware of gender statistics, (ii) increasing female representation among session convener teams, and (iii) direct instruction to try to avoid all-male sessions. The experience with the ASM General Meeting shows that it is possible to increase the participation of female speakers in a relatively short time and suggests concrete steps that may be taken to achieve this at other meetings.

IMPORTANCE Public speaking is very important for academic advancement in science. Historically women have been underrepresented as speakers in many scientific meetings. This article describes concrete steps that were associated with achieving gender equity at a major meeting.

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Invitations to speak at major meetings are prized by scientists because they provide visibility and the ability to present their work efficiently to an audience of peers. Speaking invitations are used by faculty promotion and tenure committees as evidence of external recognition and thus can be critical to academic and professional advancement. Studies have shown that women's participation at meetings is often underrepresented relative to their numbers (1, 2). In fact, women lag in a variety of academic areas despite increases in the percentage of women scientists (3–6). Given the importance of oral presentations at scientific meetings and academic advancement, a colleague and I recently analyzed the role of convener gender in symposia in two meetings from 2011 to 2013 and noted that the presence of at least one female convener was associated with a marked increase in female speaker participation and a reduction in the probability that the session was all male (7). This communication describes the effect of making that information known to the American Society for Microbiology (ASM) General Meeting (GM) Program Committee in the years 2014 and 2015 and discusses interventions that were associated with achieving gender parity in 2015 (Fig. 1).

The ASM GM is planned by a Program Committee that meets in Washington, DC, in the summer before the meeting. The committee is composed of scientists who represent the wide breadth of subdisciplines that participate in the GM, ranging from microbial pathogenesis to microbial ecology and basic microbial physiology and genetics. The format for the organization of the GM has not been changed since the meeting was reorganized in 2011 (8), and the process was described in detail in a prior publication (7). Basically, the Program Committee designs symposia and assigns shepherds who are members of the committee, who in turn choose conveners who select the speakers. Hence, the convener

team has great latitude in speaker selection, with the shepherds overseeing the process and occasionally providing input into session content.

In the summer of 2013, the results of the GM gender participation analysis for the years 2011 to 2013, subsequently published in *mBio* (7), were available and were presented to the Program Committee planning the 2014 meeting in Washington, DC. Two points were made: (i) that female speakers were underrepresented relative to the participation of females in the meeting, with too many all-male sessions, and (ii) that the presence of at least one female convener was associated with a 72% increase in female participation in those sessions and a 70% reduction in the likelihood of an all-male session. The simple intervention of presenting the data from prior meetings was associated with an increase in convener teams comprising at least one woman and an increase in female speaker participation at the 2014 meeting to 43% from an average of 29.6% for the prior 3 years but had no effect on the number of all-male sessions (Fig. 1). In the summer of 2014, the gender statistics from the 2014 meeting (which had occurred 1 month earlier) were again presented to the Program Committee planning the 2015 meeting, together with an analysis of trends in recent years. However, on that occasion, the committee was also instructed verbally to “do better” with regard to gender balance and to avoid all-male sessions, except under extraordinary circumstances. The PowerPoint slide used to instruct the committee during the presentation is shown in Fig. 2. The 2015 ASM GM essentially achieved gender equity among speakers, with 48.5% being women. As a result of the increases in the percentage of women speaking in the 2014 and 2015 meetings, approximately 100 more women presented in those two meetings than the number expected on the basis of the 2011 to 2013 meeting averages.

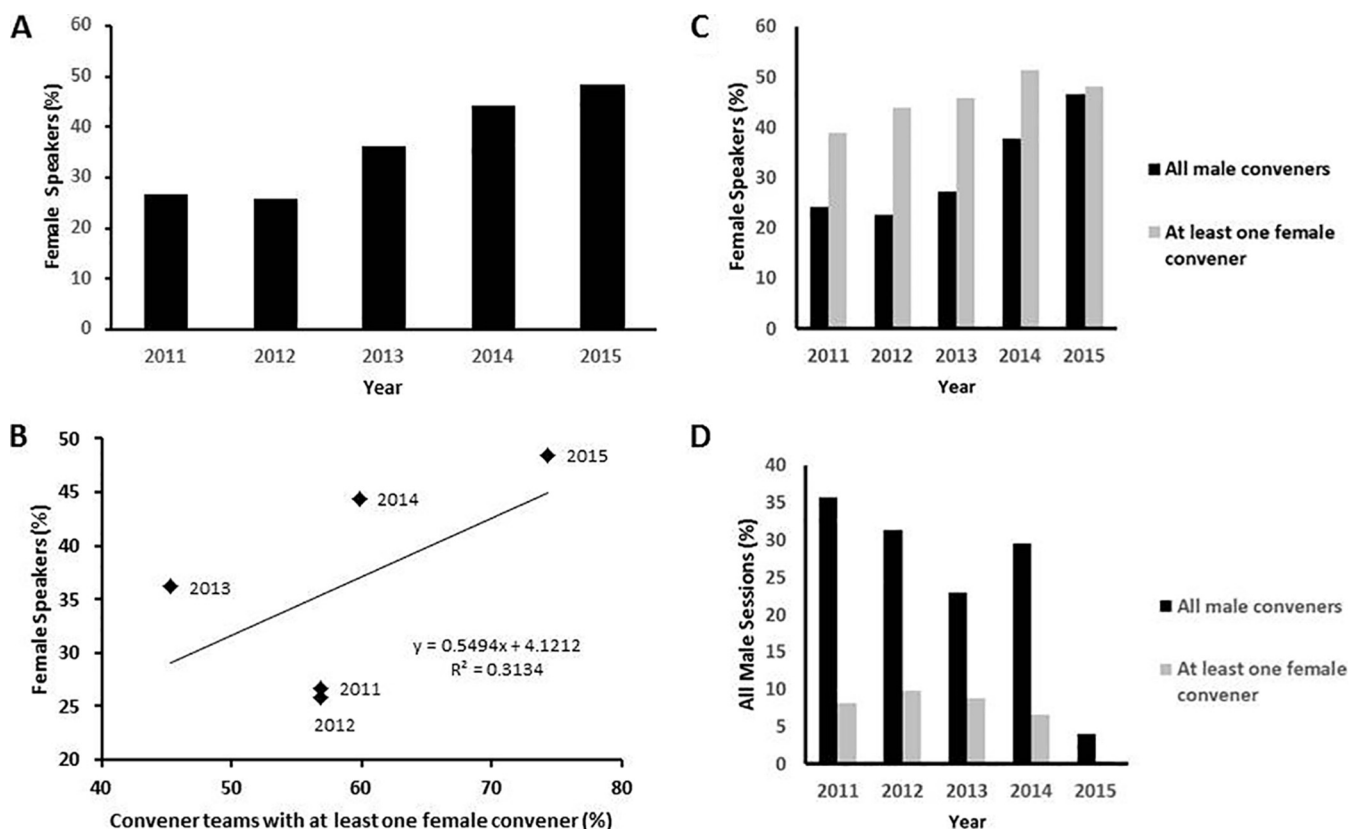


FIG 1 Panel A shows the percentages of female speakers for five consecutive ASM GMs in the years 2011 to 2015. Panel B shows a plot of the percentage of session convener teams with a least one female convener versus the percentage of women speakers with the year next to the data point. Panel C shows the percentages of female speakers in sessions organized by all-male conveners and those organized by teams with at least one female convener. Panel D shows the percentages of all-male sessions among sessions organized by all-male convener teams and teams with at least one female convener. Data for the years 2011 to 2013 were published previously (7) and are shown here for comparison with those for the years 2014 and 2015.

Two other outcomes were striking. First, the percentage of all-male speaker sessions was reduced tremendously, and second, the gender difference among conveners disappeared, such that all-male convener teams were equally as likely to invite female speakers as those that included a female convener (Fig. 1). A positive

correlation between the presence of at least one woman on the convener team and the percentage of women speakers was observed when the data from the five meetings were combined (Fig. 1).

These results establish that it is possible to achieve gender equity among speakers in a major scientific meeting in a reasonably short time frame. Although increases in female speaker participation followed two interventions with the Program Committee involving first the presentation of gender statistics and second a verbal plea to do better with gender balance, I caution that this report merely establishes an association between these interventions and increased female participation and remind the reader that association is not causation. Although it is conceivable that the increase in female participation was a result of the inclusion of more topics where female scientists were better represented, I do not think this explains the data since the overall mix of scientific topics at the ASM GM is fairly constant year after year. Another possibility is that women have more women in their scientific networks and that their presence in convener teams resulted in more suggestions for women speakers. In this regard, the establishment of networks can contribute to success for women in science (9).

It is likely that making the committee aware of the gender statistics influenced their decisions, increasing the number of female conveners and potentially encouraging shepherds to be more pro-

CHARGE TO THE COMMITTEE

- **YOU HAVE MADE SIGNIFICANT PROGRESS BUT YOU NEED TO DO BETTER**
- **DISCUSS THESE STATISTICS WITH THE CONVENERS YOU SELECT** (CAN SHARE CASADEVALL & HANDELSMAN *Mbio* 2014 PAPER)
- **AIM FOR GENDER DIVERSITY AT THE CONVENER LEVEL: DATA SUGGESTS THAT HAVING A FEMALE CONVENER INCREASES FEMALE PARTICIPATION AND REDUCES ALL MALE ROSTERS**
- **IF YOU SEE A PROPOSED ALL MALE ROSTER PLEASE DEMAND AN EXPLANATION – IT IS OK TO INTERVENE!**
- **LET'S WORK TOGETHER AND USE DATA TO REDUCE CONSCIOUS AND UNCONCIOUS BIASES**

FIG 2 Slide used to charge the Program Committee during the summer 2014 meeting.

active in enhancing female participation in their assigned sessions. Particularly noteworthy was the observation that the difference in female speakers associated with convener teams that included at least one female convener disappeared in 2015. One explanation for this effect may be that all-male convener teams responded to the data presented to the committee and published previously (7) and decided to actively recruit more female speakers. Alternatively, it is possible that all-male teams felt that they were under increased scrutiny and increased their selection of women speakers. Whatever the explanation, the outcome resulted in significantly increased numbers of women speakers.

Among ASM members, women now constitute the majority of the students and postdocs (7) and therefore represent the future of the society. Thus, it is important to convey the message to the next generation that in this field there is no “glass ceiling” with regard to gender. Since selection as a speaker is an important form of recognition that can carry tangible benefits with regard to career development, the achievement of gender equity at the ASM GM will, I hope, convey the message that both genders are welcomed into the accomplished ranks of the Society. In this regard, all-male sessions are potentially problematic, as they could be interpreted as indicative of areas with poor gender balance that are perhaps not as welcoming to women. The near eradication of all-male sessions at the 2015 ASM GM shows that it is possible to effect change in this type of session format and thus avoid any subtle negative messages to female scientists in training and younger faculty members.

Our results suggest three strategies that may be used to increase the participation of women in meetings where better gender balance is needed and desired. First, obtaining gender data from prior meetings and presenting them to the Program Committee can increase awareness of inequities in gender balance. Second, the increased representation of women among those who select speakers was associated with increased female speaker participation. Third, direct instruction to the committee can help focus the group on reducing inequities in gender balance.

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I served as Chair of the ASM GM Program Committee for the years 2014 and 2015.

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