

The Role for a Large Scientific Society in Addressing Harassment and Work Climate Issues

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Abstract

The American Geophysical Union, a scientific society of some 60,000 members worldwide, established in 2011 a set of scientific integrity and professional ethics guidelines to address the actions of its members, the governance of the union in its internal activities, and the operations and participation in its publications, scientific meetings, including its honors and awards programs. However, these guidelines, like those for other societies, did not explicitly address harassment, related workplace issues, or implicit bias in the practice of science. The recent exposure of several issues related to the sciences caused AGU to reexamine its role and obligations. In a twelve-month period starting October 2015, more than six high profile cases of harassment in the sciences were publicly disclosed in the U.S., including one case that was brought to the attention of the U.S. Congress. A growing body of literature on harassment and other biases in the sciences, including data extracted and reported by AGU, has shed new light on this topic. As a result of this assessment, AGU now actively helps educate its members on Ethics issues in various ways, both broadly as well as specifically around items related to gender bias, harassment and other equity and inclusion topics. New and renewed members are specifically made aware of AGU's ethics policies, and additional efforts are increasingly embedded across publications, awards, meetings, talent pool and other AGU member-focused programs. In addition, AGU is starting a program focused on addressing harassment and related work-climate matters in the Earth and Space Science community, with an emphasis on the growing need and proposed active roles for scientific societies.

1. INTRODUCTION: THE HISTORIC CONTEXT AROUND HARASSMENT AND CASE FOR CHANGE

Recent high-profile events in the news have raised awareness of the problem of harassment (including sexual harassment) in science and academia (Scoles, 2016). This professional misconduct often preferentially targets women, although men can also be victims. Research confirms the extent of harassment in academic environments and especially in disciplines with low diversity, where the lack of established support networks can

lead to feelings of vulnerability and professional insecurity. Another problem identified by research on harassment is the scarcity of well-defined resources for reporting and responding to inappropriate behavior, including the perceived risk that the victims' careers may be jeopardized if they speak out (Clancy et al., 2014). These events have highlighted the need for support mechanisms for the targets of inappropriate behavior, as well as the need for a suitable institutional response to deter continued misconduct. Outright harassment is often part of a broader spectrum of closely-related issues impacting the scientific community, in-

cluding discriminatory practices including conscious and unconscious bias.

Collectively, harassment, bullying, discrimination, and bias exploit differences in gender identity and presentation, religion, race, ethnic origin, class, ability, citizenship, and sexual orientation. These practices are known to endanger the personal, professional, physical, and emotional well-being of individuals and their communities. Such actions factor into decisions to leave science and academia and contributes to under representation in Earth and Space Sciences (ESS). Bias, even if not perceived, can and does inhibit career evolution and can limit scientific understanding and advancement, which depends on diverse perspectives around problems (Rosen, 2017). Strong policies, practices and education are important steps in promoting a cultural change where ethics related issues of harassment, bullying and discrimination, and other bias – both explicit and implicit - are not only recognized as unacceptable but must be stopped and prevented (St. John et.al., 2016).

2. AGU AND EARTH AND SPACE SCIENCE DEMOGRAPHICS

This public surge in harassment in science cases has prompted AGU, the American Astronomical Society (AAS), the American Geophysical Institute (AGI), and several AGI member societies to reexamine their policies and the role for professional scientific societies in addressing harassment and other work climate issues. The demographics of AGU has evolved over the past several years to yield an organization that is more rich in geographic and gender diversity. Whereas women represented only 15% of AGU in 1975, in 2016, nearly 27% of AGU membership were female. AGU members under the age of 30 were nearly 50% women. Data compiled and reported by AGI in 2016 gives a profile of the lower participation rate of women in ESS (Wilson, 2016).

Historically, expanding the participation of females and underrepresented groups has presented unique and compounded challenges in ESS. In the U.S. Women made up 39% of U.S. bachelor's degrees in the Earth, atmospheric, and ocean sciences in 2011, but only 20% of

faculty in these fields. Of these, Black, Hispanic, American Indian, Alaska Native, and Asian Pacific Islander women represented only 5% and 7% of bachelor's degrees and tenure-track faculty, respectively (Holmes et al., 2015). The geoscience workforce has a lower proportion of women compared to the general population of the U.S. and compared to that in many other STEM fields (Science, Technology, Engineering and Mathematics). Additional dynamics in ESS – such as field research on ships, in remote field stations, and in other isolated environment, and the power structures traditionally involved in these settings, amplify the issues associated with the both the climate for and impact of harassment. This combination of factors in ESS is especially troubling. An environment or culture of acceptance of harassment, even if experienced directly by only some, contribute to broader marginalization of individuals within affected groups, and factors into their decisions to leave science and academia or even not to enter a field (Glass, 2015).

4. NEW POLICY TO ADDRESS HARASSMENT

The AGU Scientific Integrity and Professional Ethics Policy is a set of principles and practices for professional behavior that governs all AGU members, staff, and volunteers, formal AGU affiliates, and AGU third-party contractual organizations, exhibitors, and sponsors. It was significantly expanded and updated in 2011 and 2012 following several incidents of professional misconduct (Gundersen and Townsend, 2014). In 2014, members were required to acknowledge the policy as part of joining the society or renewing their membership. Before 2015, and the surge of harassment in the science cases, the policy focused primarily on traditional education and enforcement of ethics practices related to scientific publication. For example, during the 3-year period from January 2013, the AGU Ethics Program addressed an average of seven cases each year on a confidential basis. All but one of these cases focused on issues such as authorship, plagiarism, or unauthorized use of data. There were no direct provisions for addressing harassment or misconduct, other than the code of conduct for AGU volunteer leaders.

Following an AGU Town Hall session in December 2015 - *Forward Focused Ethics: What is the Role of Scientific Societies in Responding to Harassment and Other Workplace Climate Issues?* - and extensive discussion at the April 2016 AGU Board and Council meetings, a task force appointed by the AGU President in June 2016 to begin an update to the AGU ethics policy. The task force was charged with reviewing and making recommendations for new AGU ethics policy and practices, with a focus on addressing the issue of harassment and work-climate issues and the needs of AGU members. This task force has now completed its work and recommended an updated policy and practices that set new standards for member and scientific workplace expectations, and new resources to support these changes (McPhaden et.al., 2017).

This extensive policy update applies to all AGU sponsored programs and activities. The updated policy expands the boundaries for the AGU ethics program, and for the first time allows coverage of misconduct that takes place outside of AGU programs when it impacts an AGU member, or could harm the reputation of the organization or the broader scientific community. Key provisions of this updated policy include:

- An expanded definition of scientific misconduct to include code-of-conduct towards others.
- Definitions of discrimination, harassment, sexual harassment and bullying as it applies to code-of-conduct towards others.
- A higher standard for AGU Volunteer Leader Code of Conduct.
- The extension of AGU ethics policy to cover participants in all AGU program activities, including Honors and Awards, and AGU governance.
- Self-reporting requirements for awardees and candidates for AGU elected position.
- Ethical guidelines for publication of scientific research.
- A clearly detailed process for reporting and investigating scientific misconduct.

- Support mechanisms for issues that may not rise to the level of a formal ethics complaint.

The revised Ethics policy also includes AGU leadership affirmations of the international principles that the free, open, and responsible practice of science is fundamental to scientific advancement and human and environmental well-being (ICSU, 2014).

Beyond these AGU public statements, specific studies and practices have also been undertaken across AGU major programs - AGU Publications, Honors and Awards, Meetings, and Talent Pool, to help support to achieve the necessary cultural change. In these programs, the focus includes eliminating explicit and implicit bias, the assurance of better and fair recognition for women and underrepresented groups, and in providing the necessary education, training, and resources to impact these issues. At AGU, these activities as being linked under the umbrella of Ethics, diversity, and Inclusion to achieve the broader necessary results.

5. EXAMINING BIAS IN PUBLICATION AND DATA

Publications are one of main way that scientists receive recognition and career advancement. To help understand potential bias through the peer-review and publication process, and draw attention to the issues, AGU conducted a study that looked at both gender and age of authors and reviewers across recent submission and publications (Lerback and Hanson, 2017). Accounting for age is critical to understand potential bias. The analyses showed that women submitted fewer papers on average than men, but were more successful at having these accepted. This result that women submit fewer papers is broadly similar to a larger study across other disciplines (Elsevier, 2017). In addition, the study showed that women across all age groups are used as reviewers less than their male counterparts. This is a result of both fewer suggestions by particularly male authors and fewer invitations by particularly male editors, and higher decline rates by women in each age group. As a result, AGU is expanding efforts to increase diversity of the journal edito-

rial teams, and will be providing explicit reminders to authors and editors about the value of diversity in peer review.

6. EXAMINING BIAS IN HONORS AND AWARDS

An additional aspect of professional advancement is measured through the accumulation of individual scientific honors and awards. An examination of AGU awards data from 2012-2016 has been undertaken to address the question of whether bias - conscious or unconscious - is at play (Holmes et al., 2017). This examination demonstrates important trends and opportunities.

The AGU honors program involves receipt of 500-600 nomination packages each year in the selection of awardees for 28 different Union wide awards, including the prestigious AGU Fellows selection process where no more than 0.1% of membership are elected as Fellows each year. A promotional campaign to help assure that women scientists are nominated, and educational resources on addressing unconscious bias have been provided to selection committees for each of the past four years. The results from these efforts and the added awareness of issues surrounding diversity and inclusion, are now bearing positive results.

For example, examination of AGU awards data from 2013-2016 show gender diversity in AGU honors and awards is approaching parity with the overall membership demographic.

In 2016, the total % of women awarded with Union level awards, honors or prizes total 30% of the total awardees. This is a departure from the historically low representation in such activities, where as recently as 2014 the percentage of women awardees was 15% versus the 27% of women in the AGU membership population. Similar trends are shown for AGU Fellows selection. The percentage of women scientists currently represented in the total population of nearly 1400 living AGU Fellows in 10%. From 2007-2012, the percentage of women elected to AGU Fellowship averaged 12%. However, over the past four years, from 2013 – 2016, the percentage of women elected AGU Fellow averages 18-20%, representing a step change. Whereas additional work and empha-

sis is still underway, we believe these positive trends are the direct results of promoting diverse nominations, and providing tools and workshops on addressing unconscious bias (Mukasa, 2017).

7. ADDRESSING HARASSMENT AT MEETINGS AND THE SAFE AGU PROGRAM

A recent internet-based survey of meeting attendees sheds new light on the incident rate of harassment at scientific meetings and its impact (Marts, 2017). The report highlights harassment as one of several ways that women and other underrepresented minorities encounter conscious and unconscious bias at meetings. Although the sample size for the survey was relatively small (221 responses), the survey results point out that harassment at meetings included comments on appearance and other forms of verbal harassment, unwanted touching, stalking, and sexual assault. Targets of harassment reported that the experience caused them to think more about their personal safety at meetings, to avoid social events, and to stop attending meetings where harassment occurred. Similar stories reported at the AGU 2015 Town Hall and sessions at the 2016 AGU Annual Meeting amplify and are consistent with these results.

In addition to the already established AGU Meetings Code of Conduct, a recent new program, SafeAGU, was introduced at the December 2016 AGU Annual meeting. SafeAGU was designed to promote awareness of harassment issues, and to ensure that all AGU program activities are free from discrimination, bias, or harassment of any type. SafeAGU offers support to members who may feel harassed, threatened, or unsafe in any way when participating in AGU meetings. It also provides additional support and resources related to safe work environments. Individuals with concerns or requests for assistance on a harassment or other safety/security issue, including situations that may not rise to an ethics complaint, are provided support on a confidential basis. This program, coupled with the recently updated AGU Ethics policy, provides a direct address in response to addressing harassment and related work-climate issues.

8. CONCLUSIONS: THE PATH FORWARD

Solving the problem of harassment in the sciences including the related ethical issues of diversity and inclusion, involves several critical and interwoven processes on multiple fronts (Gundersen, 2017). There are distinct roles for professional societies in (1) facilitating public conversation on the issues involved, (2) providing training and education to help combat the problems, (3) codifying and enforcing policies that help stamp out these problems, and (4) in providing research to better understand the issues involved and support for potential victims. AGU is committed to the above strategies that when taken together are designed to build and support a diverse and inclusive scientific community. Included in these commitments is an obligation to assure its members facing scientific professional structures - such as publications, meetings, and honors and awards - are routinely examined to guarantee they reflect the desired diversity, and take steps to avoid unconscious bias. We believe that coupling the above strategies can lead to transformative results. Continued attention is needed, but impacts are already being seen.

The AGU is not alone in its attempt to address the issue of harassment in science. Recent keynote statements at an international geoscience conference on behalf of the International Association for Promoting Geoethics provides additional reinforcement: "... *A respectful and fruitful working environment is fundamental for maintaining a high level of professionalism and for assuring an ethical conduct while practicing geosciences. Therefore, any kind of harassment and discrimination cannot be tolerated and must be denounced. Harassment and discrimination offend the dignity of the person, threaten the serenity of the working environment, limit the individual's freedom of choice, and seriously undermine integrity, quality, and credibility of the geoscience community. These kinds of behavior prevent individuals from taking ethical decisions ...*" (Peppoloni, 2016).

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