

**FOSTERING INCLUSIVE, SUPPORTIVE, AND SAFE ENVIRONMENTS IN PLANETARY SCIENCE FOR MEMBERS OF THE LGBTQ+ COMMUNITY.** K. E. Vander Kaaden<sup>1</sup>, C. Ryan<sup>2</sup>, E. G. Rivera-Valentín<sup>3</sup>, C. B. Phillips<sup>4</sup>, J. Haber<sup>5</sup>, J. Filiberto<sup>3</sup>, C. A. Denton<sup>5</sup>, <sup>1</sup>Jacobs, JETS Contract, NASA Johnson Space Center (Kathleen.E.VanderKaaden@nasa.gov), <sup>2</sup>University of Western Ontario, <sup>3</sup>Lunar and Planetary Institute – University Space Research Association, <sup>4</sup>Jet Propulsion Lab / Caltech, <sup>5</sup>Purdue University.

**Introduction:** To continue to develop an innovative and successful workforce for planetary scientists, it is critical to foster an interdisciplinary, diverse, equitable, inclusive, and accessible (DEIA) environment across the field, including for members of the LGBTQ+ community. Note: Members of the community utilize various acronyms to describe a person’s sexual orientation or gender identity, but for the purposes of this abstract, we will use the acronym LGBTQ+ to include any and all members of this marginalized group. LGBTQ+ stands for Lesbian, Gay, Bisexual, Transgender, Queer, and the “+” signifies the importance that one acronym cannot possibly capture everyone’s experience of their gender identity, expression, and/or sexual orientation.

A 2020 survey of the Planetary Science workforce indicates that LGBTQ+ representation has grown in Planetary Science from 3% in 1970 to 12% in the last 5 years [1], yet many members of this community are marginalized, excluded, and/or unsafe in various aspects of our field [e.g., 2]. In fact, a survey of LGBTQ+ scientists in the UK showed that almost a third of the participants considered leaving the physical sciences due to negative workplace experiences [3, 4]. Cech and Pharm [5] showed that “LGBT employees in STEM agencies report systematically more negative workplace experiences than their non-LGBT colleagues”. Similarly, [6] showed that LGBTQ+ “women and gender minorities experience a more hostile workplace climate in Astronomy and Planetary Science compared to cisgender, straight women”. Studies of this nature have brought the negative experiences of LGBTQ+ scientists to light, and in doing so, provide us the catalyst to make meaningful, lasting changes to create inclusive, supportive, and safe environments where all scientists are supported and can thrive.

The aim of this work is to provide recommendations on how to work towards making the field of Planetary Science more accessible to members of the LGBTQ+ community by creating an inclusive, supportive, and safe environment to facilitate their success. A more detailed discussion can be also be found in [1].

**Demographics:** Results from a recent American Astronomical Society (AAS) Division of Planetary Sciences 2020 workforce survey showed that the LGBTQ+ community is represented at or above the national average within Planetary Science [see [1] for

further discussion]. Although the demographic data indicates that in Planetary Science LGBTQ+ scientists are well-represented, unlike some axes of representation [e.g., 7], such a diversity study is only part of the discussion. Diversity and inclusion initiatives require the consideration of representation and visibility, as well as workforce issues, such as harassment, bullying, and unequal treatment in the workplace. Indeed, a recent survey found that LGBTQ+ planetary scientists experienced more verbal harassment and were twice as likely to be physically harassed due to their LGBTQ+ identity [6]. Until a very recent Supreme Court ruling (case no. 17-1618; decided June 15<sup>th</sup> 2020), LGBTQ+ status, unlike race and gender, was not a protected status in the U.S. In fact, until this decision, it was legal in 28 of 50 states to fire someone because they were lesbian, gay, or bisexual; in 32 states it was legal to fire someone for being transgender. The fact that such harassment and unequal treatment is faced by a significant portion of the Planetary Science community motivates and requires action now, to create a safe and equitable work environment.

**What is working and should be continued:** Prior to providing recommendations on how to work towards creating inclusive, supportive, and safe environments across Planetary Science for members of the LGBTQ+ community, we would like to highlight a few initiatives currently taking place that are effective and that we urge be continued.

*Employee Resource Groups (ERGs):* Institutional support of such groups is key to their success, as it removes additional burdens from members of the LGBTQ+ community to self-support their organizations. Examples of successful ERGs include the NASA Headquarters LGBTQ Pride Alliance and the Out and Allied ERG at NASA Johnson Space Center.

*Including LGBTQ+ Events in Conference and Workshop Programs:* To show support for the LGBTQ+ community, it is critical that conference or workshop-sponsored LGBTQ+ spaces are created and advertised. A great example of this is the LGBTQ+ networking dinner held each year at the LPSC, and especially its inclusion in “Peripheral Meetings and Events”.

*Creating and Enforcing Codes of Conduct:* Not only is it important to have an agreed upon code of conduct [8] at events such as conferences, but to maintain the safety of the LGBTQ+ community it is also crucial to

have identifiable people to whom attendees can easily report any safety or conduct concerns.

*Distributing and Wearing LGBTQ+ NASA Pride Pins:* The endorsement and wearing of pins by our colleagues, including members of NASA Headquarters, is a rather simple way of promoting a sense of inclusion and safety in the field.

*Supporting the Equity, Diversity, and Inclusion Working Group:* Groups like these, with representation of each Advisory/Assessment group, provide additional support to work towards a more DEIA environment for all members of Planetary Science.

**Actionable Items:** In the remainder of this abstract, we suggest actions that can be taken to improve the safety and inclusion of LGBTQ+ people in the Planetary Science community in the workforce, in professional societies, at conferences, and at universities. But first, here are some action items that can be implemented across the field of Planetary Science as a whole:

- Ensure clearly marked all-gender restrooms are available throughout all Planetary Science spaces and that team leaders are aware of their locations. This is particularly important at conferences.
- Ensure all paperwork containing sensitive information regarding LGBTQ+ identity be handled by members of management teams only and not shared with colleagues.
- Advertise job announcements with inclusive and appropriate language in LGBTQ+ spaces and actively recruit, hire, and retain LGBTQ+ employees.
- Develop a clear anti-harassment policy and code of conduct as well as reporting procedures.
- Encourage the use of personal gender pronouns in all statements.

*Universities:* To grow the number of LGBTQ+ planetary scientists, we must first support them throughout their education and assist them in pursuing a career in the field. To do so, the following suggestions should be implemented (in no particular order):

- Provide LGBTQ+ undergraduate students planning to attend graduate school with resources to find LGBTQ+ friendly universities and departments.
- Provide access and support to the department from any LGBTQ+ resource center on site.
- Facilitate safe zones and other LGBTQ+ trainings for the students, faculty, and staff.
- Host speakers and panels to specifically discuss LGBTQ+ issues and inclusion across the department.
- Host members of the LGBTQ+ Planetary Science community as colloquium speakers.

*Planetary Science Workforce:* To make Planetary Science workplaces more inclusive, supportive, and safe environments for members of the LGBTQ+ community, the following things should be

implemented (in no particular order):

- Initiate additional NASA-supported funding opportunities to support DEIA studies.
- Develop and implement a plan for continued workforce studies over the next decade and beyond.
- Request additional demographic information upon submission of NASA-supported proposals.
- Utilize demographic information to ensure members of the LGBTQ+ community are receiving adequate funding compared with peers.
- Develop ERGs for members of the LGBTQ+ community and allies.
- Provide sufficient health care benefits to LGBTQ+ employees.
- Provide benefits to domestic partners of LGBTQ+ employees.

*Professional Societies and Meetings:* Since communicating our science with our peers is such a large part of the success and continuation of our field, it is imperative that the LGBTQ+ community is included in decisions made for professional societies and meetings. Suggested implementations are below (in no particular order):

- Include personal gender pronouns on badges.
- Investigate the location prior to meeting selection and ensure it will be safe for members of the LGBTQ+ community to attend.
- Include programming specific to LGBTQ+ people in Planetary Science.
- Put out open calls for participation in outreach and career development events to all members of the community and allow participants to self-identify.

**LGBTQ+ Visibility:** An important aspect of creating inclusive, supportive, and safe environments for members of the LGBTQ+ community is increasing community visibility across Planetary Science. This can be done by:

- Organizing and advertising LGBTQ+ networking events at conferences and workshops.
- Recognizing LGBTQ+ in STEM Day.
- Supplying stickers/ribbons/pins supporting the LGBTQ+ Community.
- Initiating role model and mentoring opportunities.
- Encouraging participation in larger professional organizations and committees.

**References:** [1] Vander Kaaden, K.E. et al. (2020) Decadal Survey Call, LPI-002543 [2] Ackerman, N. et al. (2018) arXiv:1804.08406. [3] Gibney, E. (2019) *Nature*, 571, 16-17. [4] Marín-Spiotta, E., et al. (2020) *Adv GeoSci*, 53, 117-127. [5] Cech, E.A. and Pham, M.V. (2017), *Soc Sci*, 6, 12. [6] Rickey, C.R. et al. (2019), *Bull AAS*, 51, 4. [7] Rivera-Valentín, E.G., et al. (2020) Decadal Survey Call, LPI-002542 [8] Diniega, S. et al. (2020) Decadal Survey Call, LPI-002544.