

**BRIDGING OPPORTUNITY GAPS THROUGH PROFESSIONAL DEVELOPMENT.** E. G. Rivera-Valentín<sup>1</sup>, C. Shupla<sup>1</sup>, S. Webb<sup>1</sup>, J. Filiberto<sup>2</sup>; <sup>1</sup>Lunar and Planetary Institute (USRA), <sup>2</sup>ARES Division, NASA JSC.

**Introduction:** In his book, *How to be an antiracist*, Dr. Ibram X. Kendi points out that the academic achievement gap is a racist idea. It fundamentally puts the onus on the people, or as he says it: “the test takers, as opposed to the test”. Dr. Kendi calls us to instead look at the opportunity gap faced by underrepresented racial and ethnic communities. When opportunities are inequitably distributed, a biased system arises that favors some over others.

One manifestation of this privilege is in the inequitable access to mentorship and networking. Studies have shown that one of the best ways to retain undergraduate students in STEM majors is through mentorship and professional development [1,2]. Yet, some studies suggest that Black and Latinx students do not have equitable access to mentorship [3]. This may be one of the reasons that Black and Latinx students are more likely to change their major to a non-STEM field, which primarily occurs during their third year [4, 5]. Such a lack of access to mentorship may even continue throughout a professional career.

Furthermore, it can be difficult to identify an opportunity gap when those in leadership or management positions are from majority groups because they may have had different experiences throughout their professional development. As such, identifying and bridging opportunity gaps requires engagement with those most impacted.

Here we describe our progress on building informed professional development resources for students in the planetary sciences. The resources have been instituted within the Lunar and Planetary Institute’s Summer Internship Program.

**Professional Development Seminar:** The LPI, and many other internship programs, typically include science seminars to engage students in a broad array of research. We leveraged this format to build a professional development seminar series. The series addresses a variety of topics, such as a seminar on writing conference abstracts and another on preparing conference presentations, as well as how to navigate the graduate school application process. Seminars are co-led by LPI science and public engagement staff. Although they include content through a talk/presentation component, they also include activities to further engage with students and a lengthy discussion section. Each seminar is followed up with a survey to assess if the students found the information useful and whether it was delivered effectively. At the end of the summer, the students are surveyed again to have a

holistic view of their experience. We have leveraged the feedback received in these surveys, as well as knowledge of the incoming intern cohort to change the seminars offered, how they are offered, and their content. This allows the seminars to be responsive to the needs of the interns. In particular, we ensure that the needs of those most impacted by disadvantages are actively taken into account.

**Intern Stories:** A lesson learned from previous programs [6] is that peer-mentorship has an important role in bridging opportunity gaps, which motivated the creation of “Intern Stories”. This program is intended for a high school student audience. The participants are the undergraduate summer interns. The goal of the multi-part series held throughout the summer is to provide high school students with a peer insight into an internship program and what the interns perceive as the value added of the experience. Additionally, interns help by providing their own insights into how they approached their applications. Although the LPI has hosted workshops on writing successful internship applications (e.g., see these online [resources](#)), peer mentorship provides another avenue and viewpoint in approaching this particular opportunity gap.

Besides during the Intern Stories program, interns are all encouraged to share what they learned during their internship with their university communities.

**Recommendations:** Both the professional development seminar series and the intern stories project have received positive feedback from the interns. All participants requested the continuation of the program and indicated that it helped them. As such, we recommend that programs institute professional development opportunities, through seminar series or other manners, that are informed by participant needs. Mentorship can be both from later career individuals and from peers to help bolster the experience. Importantly, we recommend that planetary science consider the opportunity gaps faced by historically excluded and oppressed communities when developing future IDEA initiatives.

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**References:** [1] Lisberg, A. & Woods, B. (2018) *Journal of STEM Education* 19. [2] Wilson, Z. S. et al. (2012) *J. Sci. Educ. Technol.* 21, 148-156. [3] Strayhorn, T. L. et al. (2013) *Proceedings from 2013 ASEE*. [4] Anderson, E. & Kim, D. (2006) *ACE*. [5] Riegler-Crumb, C. et al. (2019) *Educational Researcher* 48, 133-144. [6] Aponte-Hernandez, B. et al. (2017) *LPSC Abstract #2585*.