

IMPROVING IDEA THROUGH NASA'S PLANETARY SCIENCE DIVISION'S PROPOSAL PROCESSES. D. Daou¹, L. Moore¹, A. L. Nahm², S. A. Rinehart¹, D. Santiago-Materese¹, M. Thompson¹, K. E. Vander Kaaden¹, R. N. Watkins², N. Zellner¹, ¹NASA Headquarters, 300 E Street SW, Washington, DC 20546; ²Arctic Slope Regional Corporation, Federal, Beltsville, MD 20705. (Corresponding E-mail Address: doris.daou-1@nasa.gov).

Introduction: NASA's Science Mission Directorate (SMD), including the Planetary Science Division (PSD), is strongly committed to promoting a culture of inclusion, diversity, equity, and accessibility (IDEA). This commitment not only supports NASA's core value of Inclusion but it also supports people in the science community. By encouraging and practicing efforts focused on IDEA, NASA embraces the full variety of environmental, organizational, and individual dynamics and characteristics to support a variety of career paths. NASA's full Policy Statement on Diversity, Equity, Inclusion, and Accessibility for NASA's Workforce and Workplaces can be found here: https://www.nasa.gov/sites/default/files/atoms/files/2021_administrator_policy_statement_on_deia_at_nasa_9-28-21_tagged.pdf.

A multitude of actionable efforts are underway to increase IDEA throughout the proposal process. These include the implementation of dual anonymous peer review, no due date programs, virtual panels, and inclusion plans.

Dual Anonymous Peer Review (DAPR): Motivated by a successful study conducted for the Hubble Space Telescope guest observer program [1], SMD has piloted the DAPR review process, where not only are proposers unaware of the identities of their reviewers, but the reviewers are also unaware of the identity of the proposers while evaluating the scientific merit of the proposal. It is the intent of PSD that DAPR aids in a fair and equitable review of proposals. DAPR has been piloted in several PSD research programs to date, and initial results indicate reviews focused on science as opposed to people, high compliance with DAPR requirements, and the potential to address implicit bias. In PSD, the following programs have utilized or will utilize the DAPR process: Habitable Worlds (HW), New Frontiers Data Analysis Program (NFDAP), Lunar Data Analysis Program (LDAP), Mars Data Analysis Program (MDAP), Cassini Data Analysis Program (CDAP), Discovery Data Analysis Program (DDAP), Exoplanets Research Program (XRP), Mars Science Laboratory Participating Scientists Program (MSL PSP), and the OSIRIS-REx Participating Scientists Program (ORSAPSP). Additional information about the DAPR process, as well as guidance for both

proposers and reviewers, can be found here:

<https://science.nasa.gov/researchers/dual-anonymous-peer-review>.

No Due Date Programs: No due date (NoDD) programs, also called programs with rolling submissions, are ones in which proposals for a given call are accepted at any time over the course of the year. Currently in PSD, there are seven programs utilizing the NoDD process. These programs include Emerging Worlds (EW), Solar System Workings (SSW), Planetary Data Archiving, Restoration, and Tools (PDART), Exobiology (ExoBio), Solar System Observations (SSO), Planetary Instrument Concepts for the Advancement of Solar System Observations Program (PICASSO), and Laboratory Analysis of Returned Samples (LARS). In addition to the lack of due date, the NoDD programs do not require the preliminary statement process (e.g., Notice of Intent or Step-1). It is the intent of PSD that NoDD programs provide flexibility for proposers, minimize/eliminate conflicting due dates, provide increased flexibility for smaller institutions or those with thinly staffed authorized organizational representative (AOR) departments, and allow proposers to participate in reviews more readily. Additional information about the NoDD process can be found here: <https://science.nasa.gov/researchers/nodd>.

Virtual Panels: With the impacts from the COVID-19 pandemic halting travel and in-person gatherings since March 2020, the agency transitioned to virtual panels to avoid a disruption in the proposal review cycle. Virtual panels are hosted almost entirely via the Google Platform. Credentials are provided to each panelist for a specific panel and can be used to access the necessary information only for the duration of the panel. Google Drive is used for all document editing and Google Meet, which has the option of closed captioning, is utilized for the "face-to-face" interactions and discussions. To increase networking opportunities and communications among the panelists, some programs have also incorporated a Slack channel into the virtual review process or a coffee hour for informal chats with the Program Officers. It is the intent of PSD that virtual panels would increase flexibility for panelists, allowing panelists who typically could not participate due to the

burden of travel the opportunity to participate, and increase the accessibility of panel participation to the planetary science community by removing barriers associated with in-person review panels. NASA continues to welcome feedback from the community on how to improve virtual review panels.

Educating Panel Members. In our continued efforts to educate our panelists and ensure our review process is inclusive, equitable, and accessible for our diverse team of reviewers, tools and resources are provided to all panelists. We understand the virtual environment can be overwhelming with the many tools members of our community are required to utilize, each entity having their own preference. In an effort to increase the accessibility of the virtual review process and to ensure all panelists are comfortable with our preferred platform, a Google Docs training video is provided prior to the start of the panel: <https://www.youtube.com/watch?v=pnu93W05pdM&t=13s>. Panelists are also requested to view NASA's Implicit Bias video, found at https://www.youtube.com/watch?v=ll_qDLIue0I, prior to participating on a review panel. Furthermore, in an effort to set expectations of panelists, SMD has developed the "NASA Science Mission Directorate Codes of Conduct for Review Panels", which is provided to panelists prior to panel discussions and can be found here: https://science.nasa.gov/science-pink/s3fs-public/atom/s/files/SMD%20Codes%20of%20Conduct%20for%20Review%20Panels_0.pdf.

Inclusion Plans: In support of NASA's value of Inclusion, SMD's Astrophysics Division's Astrophysics Theory Program (ATP), led by Evan Scannapieco, undertook an Inclusion Plan pilot program in ROSES-2021. The goal of this pilot program was to determine if SMD could assess whether R&A investigations would promote inclusion and to determine if such assessments could factor into selection decisions [2]. This program was met with overwhelming support from the community, and expert IDEA reviewers from ATP's pilot program identified several ways to refine both the solicitation and review process [2]. The cross-directorate Payloads and Research Investigations on the Surface of the Moon (PRISM) program run by the Exploration Science Strategy and Integration Office (ESSIO) expanded upon this pilot program by requiring inclusion plans in their ROSES-2021 solicitation. PRISM implemented several changes made based on the ATP findings, such as requiring proposers to include metrics of success in their plans, explicitly allowing the use of PRISM funds for inclusion plan efforts, and calling out inclusion plans as distinct from public engagement efforts. While

the findings from the PRISM review are still being finalized, a few notable items that came out of the second phase of this pilot program are 1) social scientists should be involved in both drafting solicitation language and reviewing inclusion plans; 2) the solicitations should acknowledge that teams of different sizes have different resources available to them and suggestions of ways to address this; and 3) it was unclear why only inclusion is being considered, and not all aspects of IDEA. Like ATP, the PRISM program found that it is preferable to have panels that included people with IDEA expertise to review Inclusion Plans, and the panels should be ~50% members of the planetary science community and ~50% IDEA professionals from outside of the community. More ways to refine both solicitation language and the review process were identified by the expert panelists. This pilot program has illuminated the need for a better understanding of both inclusivity and barriers to positive working environments within planetary science.

Several additional programs in ROSES-2022 will be requiring Inclusion Plans with the goal to have these count towards selection decisions in the near future. These programs outside of PSD include Earth Surface and Interior (ESI), Interdisciplinary Research in Earth Science (IDS), Space Weather Centers of Excellence (SWxCs), Astrophysics Research and Analysis (APRA), Strategic Astrophysics Technology (SAT), Theoretical and Computational Astrophysics Networks (TCAN), Astrophysics Pioneers, LISA Preparatory Science (LPS), Astrophysics Decadal Survey Precursor Science (ADSPS), PRISM, and Stand Alone Landing Site Agnostic (SALSA) PRISM. Outside of ROSES-2022, the upcoming Solar System Exploration Research Virtual Institute Cooperative Agreement Notice (SSERVI CAN) will also require Inclusion Plans.

Acknowledgments: SMD thanks all who have contributed to submitting proposals, participating on review panels, reviewing Inclusion Plans and helping improve this process as we work towards promoting and supporting inclusive practices. We acknowledge and appreciate the efforts of Evan Scannapieco and the Astrophysics Division R&A IDEA Task Force for piloting the initial Inclusion Plan Program.

References: [1] Johnson, S. K., and Kirk, J. F. (2020) *PASP*, 132(1009), 034503. [2] Scannapieco, E. (2022) *The Astrophysics Division Inclusion Plan Pilot Program*.

https://science.nasa.gov/science-pink/s3fs-public/atom/s/files/Inclusion_Plan_White_Paper_draft_for_posting_07-Feb-2022.pdf