

**DEVELOPING COMMUNITY RESOURCES TO PROMOTE SAFETY AND INCLUSIVITY IN FIELD WORK.** C. Barry<sup>1,2</sup>, N. Whelley<sup>1,3</sup>, J. Richardson<sup>1</sup>, P. Whelley<sup>1,3</sup>, T. Glotch<sup>4</sup>, K. Young<sup>1</sup>, A. McAdam<sup>1</sup>, and N. Schmerr<sup>3</sup>, <sup>1</sup>NASA's Goddard Space Flight Center, Greenbelt, MD 20771 ([caela.e.barry@nasa.gov](mailto:caela.e.barry@nasa.gov)), <sup>2</sup>ADNET Systems, Inc., Bethesda, MD, 20817, <sup>3</sup>University of Maryland, College Park, MD 20742, <sup>4</sup>Stony Brook University, Stony Brook, NY 11794

**Introduction:** Field research provides unique opportunities to expand planetary science knowledge, develop the next generation of researchers, and build productive connections between teams. The immersive nature of the field work environment enables strong cooperation and can catalyze progress towards common goals. It also makes problematic behavior difficult to escape or de-escalate, presenting specific, inherent challenges that include and go beyond physical hazards. [1]

For example, the Survey of Academic Field Experiences (SAFE) reported in 2014 that 64% of all field researchers surveyed had personally experienced sexual harassment in the field, and that gender was a significant predictor of personal experience with sexual harassment and assault [2]. Threats to personal safety based on group identity impact LGBTQ+ scientists and scientists of color [3, 4]. Compounding these effects, individuals who belong to multiple marginalized communities tend to experience more harassment and discrimination than members of a single historically-excluded group [4, 5].

Thorough safety planning and clear behavioral expectations are vital tools for improving inclusivity in field work [1]. This abstract discusses three field teams' ongoing co-development of community resources designed to promote safety and inclusivity in field expeditions. The resources are structured as three related documents:

- Field Safety Plan
- Field Code of Conduct
- Field Bill of Rights

These documents are fine-tuned in advance of each field expedition and shared with all field participants, who are expected to review, discuss, and agree to the terms of the documents before travel. Collaborative expectation-setting across project boundaries facilitates communication and follow-through on trips that include members of multiple teams. Current versions of the resources are products of collaboration between NASA's Goddard Instrument Field Team (GIFT) and two Solar System Exploration Research Virtual Institute (SSERVI) nodes: Remote, In-Situ and Synchrotron Studies for Science and Exploration (RISE2) and Geophysical Exploration Of the Dynamics and Evolution of the Solar System (GEODES).

**Field Safety Plan:** Risks encountered in the course of field research are distinct from those found in traditional workplace settings and should be approached accordingly. Site-specific safety plans including hazard avoidance, hazard protection, and incident response are necessary to limit exposure. Hazard avoidance can include measures ranging from weather monitoring and vehicle maintenance to establishment of procedures and etiquette that bolster team functionality and participant well-being throughout the expedition. A robust approach to field safety includes mental health considerations and recognizes the interplay between mental and physical welfare. [1]

*Safety Plan components.* A Field Safety Plan should be research-site-specific. Key components of our teams' Safety Plans include:

- COVID Safety
- Fieldwork Safety
- Fieldwork Etiquette
- Illness or Injury
- Search and Rescue (How to Be Found)
- Vehicle Safety
- Emergency Numbers
- Health Services

Pre-travel discussions inform revisions of the plan to address expedition- and team-specific concerns, especially in scenarios of evolving risk such as the COVID-19 pandemic.

**Field Code of Conduct:** Agreement upon a clear and enforceable Field Code of Conduct can mitigate some of the challenges that the field work environment presents. However, fewer than 40% of respondents to the Survey of Academic Field Experiences recalled seeing a Code of Conduct during field work [2]. Safe, productive, and inclusive field research requires buy-in from all team members, especially team leadership [1].

An effective Code of Conduct should state unacceptable behavior, explain prescribed responses to misconduct, outline pathways for reporting adverse experiences, and include reference materials for use in response to incident reports [6]. The GIFT/RISE2/GEODES Field Code of Conduct is structured thematically [Table 1]. It includes emphasis on expected behaviors and the value of these behaviors to the team, as well as elements corresponding to the recommendations listed above.

Several points in the Code of Conduct are grounded directly in NASA Procedural Requirements (NPR), and relevant NPR excerpts are included as footnotes throughout the document.

Table 1. GIFT/RISE2/GEODES Field Code of Conduct Structure	
Preamble	Motivations, value, and practical significance of the Code of Conduct.
Leadership Responsibilities	Behavior and support that team members can expect from leadership.
Expected Behavior for All Participants	Behavior and support that all team members can expect from each other, and must themselves uphold. Includes anti-harassment statements, academic behavior guidelines, and our status as guests at our field sites.
Response to Misconduct	Formal and informal reporting and support options, mandatory reporter information, and consequences for misconduct.
Confirmation of Code of Conduct	Statement confirming that the signer understands what is expected of them and has tools to seek support if needed.
Addenda	Institution-specific information about pathways for reporting harassment and seeking support.

**Field Bill of Rights:** The Field Bill of Rights supplements the Field Code of Conduct. It describes aspects of a healthy, professional field work environment. Field leadership supports the establishment and maintenance of this environment through pre-trip planning and through actions and decisions in the field. All team members are expected to respect each other's rights.

The Field Bill of Rights includes information about the following topics:

- Right to safety
- Right to medical care
- Right to communication
- Right to respect, dignity, and professionalism
- Right to access expedition resources
- Right to privacy
- Right to response in cases of misconduct
- Right to rest
- Right to data access

**Iteration:** During expedition debriefs, team members are invited to provide feedback on their field research experience. Comments related to community documents are taken into consideration for future reference. During the planning process leading up to each expedition, the field leadership team revises the text to

reflect team feedback and current best practices, attend to worksite-specific adjustments, and update perishable items such as contact information.

Although there is much that could go into a Code of Conduct, our teams have found that it is best to keep this document readable and brief, and accompany it with more in-depth resources [7].

**Acknowledgements:** This work is supported by the Goddard Instrument Field Team (GIFT) and two nodes of the Solar System Exploration Research Virtual Institute (SSERVI): Geophysical Exploration Of the Dynamics and Evolution of the Solar System (GEODES) and Remote, In-Situ, and Synchrotron Studies for Science and Exploration (RISE2).

*Safety Plan.* The safety policies and strategies in the Field Safety Plan draw on our field leads' years of professional training and experience. The authors would like to acknowledge the University at Buffalo and Arizona State University Geology Field Camps, the National Outdoor Leadership School, The Red Cross and the Central Massachusetts Search and Rescue Team for inspiring safety in the field.

*Code of Conduct.* Earlier versions of the Code of Conduct were written and field-tested by the Goddard Instrument Field Team.

*Bill of Rights.* Our Field Bill of Rights is inspired by a similar document from the Association of Polar Early Career Scientists [8].

**References:** [1] Richardson, J.A. et al. (2020) NASEM Decadal Survey, White Paper #447, <https://baas.aas.org/pub/2021n4i447>. [2] Clancy, K.B.H. et al. (2014) PLoS ONE, 9(7): e102172, <https://doi.org/10.1371/journal.pone.0102172>. [3] Oicott, A. N., and M. R. Downen (2020) Eos, 101, <https://doi.org/10.1029/2020EO148200>. [4] Marin-Spiotta, E. et al. (2020) Advances in Geosciences, <https://adgeo.copernicus.org/articles/53/117/2020/>. [5] Clancy, K. B. H., et al. (2017) JGR Planets, <https://agupubs.onlinelibrary.wiley.com/doi/epdf/10.1002/2017JE005256>. [6] Diniega, S. et al. (2020) NASEM Decadal Survey, White Paper #448, <https://baas.aas.org/pub/2021n4i448>. [7] Richardson, J.A. et al. (2020) Workshop on Terrestrial Analogs for Planetary Exploration, Abstract #8113, <https://www.hou.usra.edu/meetings/terrestrialanalogs2021/pdf/8113.pdf>. [8] APECS Template Bill of Rights, <https://www.apecs.is/diversity-equity-inclusion/field-code-of-conduct.html>.