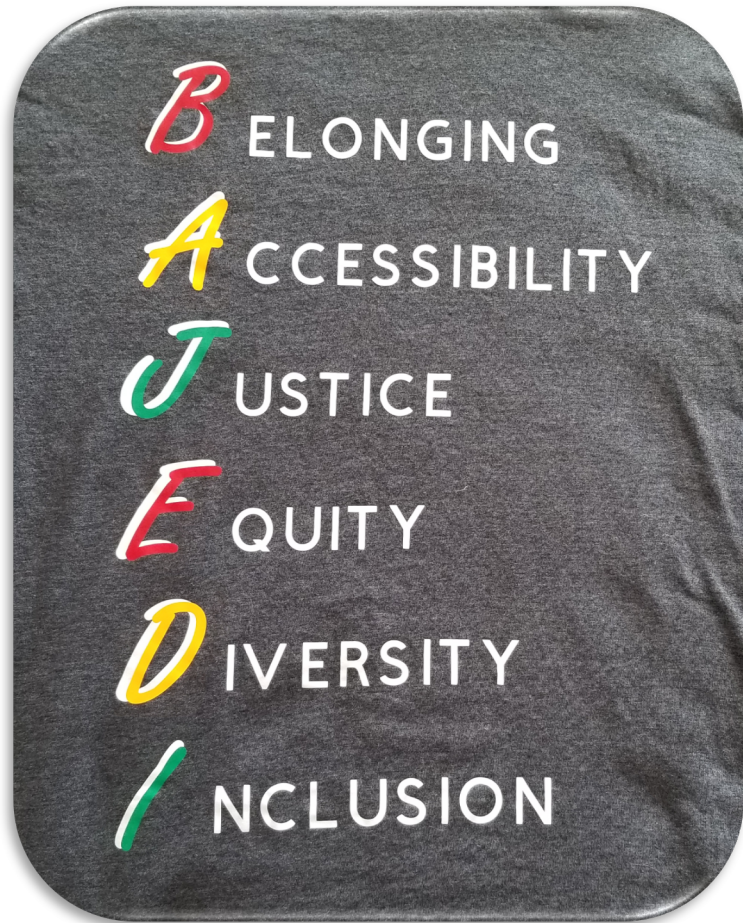




**Brandon Jones, Program Director
Education & Broadening Participation**

BAJEDI (Be A Jedi) **Mechanisms and Strategies**



1 – the STEM workforce cannot operate at full capacity if all available/qualified minds are not engaged.

2 – Individuals who are in the workforce cannot operate at full capacity if they are stressed.

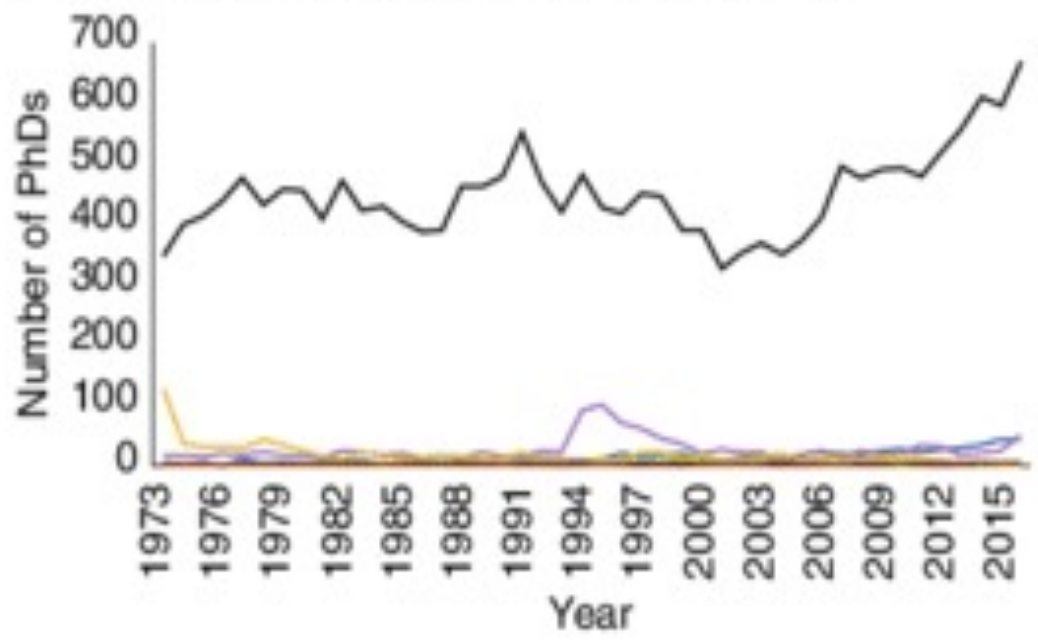
3 – Our planet is facing “all hands on deck” problems, but *all hands are not on deck*.

Individuals are not able to bring all of themselves to the research enterprise... hindering both the individual and the enterprise.



**BIPOC ancestors
were “involuntarily
incorporated”
into the U.S.**

b By race and ethnicity (subfields combined)



- White, non-Hispanic
- Native American, non-Hispanic
- Asian, non-Hispanic
- Black, non-Hispanic
- Hispanic or Latino
- Other or unknown

**Bernard &
Cooperdock 2018**





Opportunity



Experience

Sociological
problems rather
than STEM or
programmatic
issues.



Experience

**PROGRAM
ENVIRONMENT**



PARTICIPANT

NSF-GEO Education/Training

Need reviewers!!

Pathways into the Earth, Ocean, Polar and Atmospheric & Geospace Sciences (GEOPaths)

IN = Informal Networks - Collaborative projects. Geoscience learning and experiences in informal settings. **Not for profits can apply as leads.**

UP = Undergraduate Preparation - Extra- curricular experiences and training. Service learning and Workplace skill building. **“Doctoral Universities: Very High Research Activity” may not serve as the lead institutions.**

GO = Graduate Opportunities - Improve research and career-related pathways. Institutional collaborations. Service learning and Workplace skill building.



Undergraduate students

Research Experience for Undergraduates (REU)

Internship programs for undergraduates

REU Sites provide experiences for cohorts of 10-20 students;
REU Supplements provide experiences for 1-2 students.

The diversity of the GEO REU Site cohorts has increased:

AGS (~45%), EAR(~55%) and OCE (~52%)

2018 = 688 students

BI idea: *Connect REU students to graduate programs as a strategy for broadening participation.*



Undergraduate
students

**Graduate
students**



<https://www.nsfgrfp.org/>

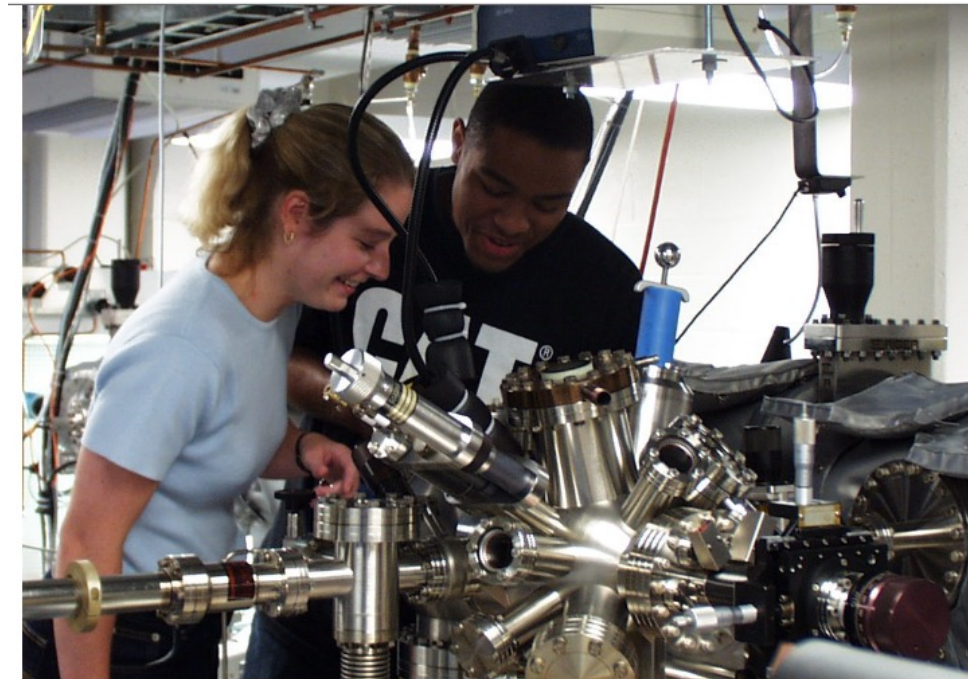
The NSF Graduate Research Fellowship Program:

Supports students in STEM disciplines who are pursuing research-based master's or doctoral degrees at US institutions.

Relatively high percentage of first generation and under-represented applicants.

For more information:

<https://www.nsfgrfp.org>



Non-Academic Research Internships for Graduate Students (INTERN) Supplemental Funding Opportunity - NSF 21-013

- To provide graduate students with the opportunity to augment their research assistantships with non-academic research internship activities and training opportunities that will complement their academic research training;
- To allow graduate students to pursue new activities aimed at acquiring professional development experience that will enhance their preparation for multiple career pathways after graduation; and
- To encourage the participation of graduate students from groups that have traditionally been underrepresented and underserved in the STEM enterprise: women, persons with disabilities, African Americans/Blacks, Hispanic Americans, American Indians, Alaska Natives, Native Hawaiians, Native Pacific Islanders, veterans, and persons from economically disadvantaged backgrounds.

Undergraduate
students

Graduate
students

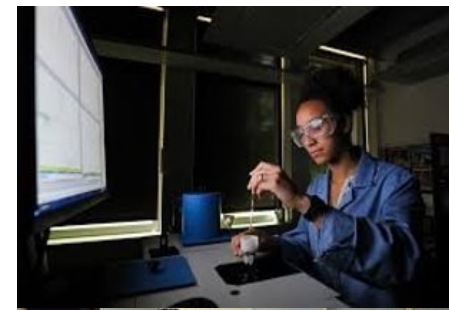
**Postdoctoral
scholars**

Opportunities across NSF at Directorate or Division level.

Programs have research themes and/or broadening participation focus:

Geosciences: AGS, EAR and OCE Division programs

Biology Directorate: 1) Broadening Participation of Underrepresented Groups, (2) Integrative Research Investigating the Rules of Life, and (3) Plant Genome



NSF/GEO BAJEDI



GOLD: Building capacity for broadening participation in the Geosciences – A National Science Foundation Initiative

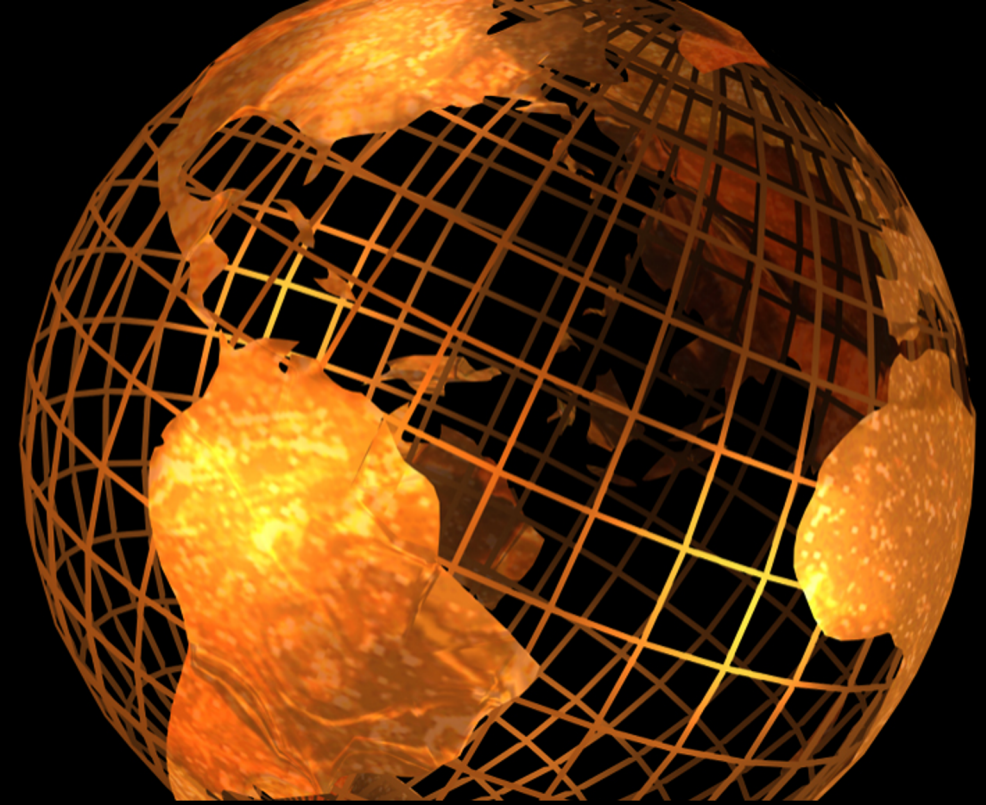
(2016) GOLD pilot projects aimed to unleash the potential of geoscientists with interests in broadening participation to become impactful leaders by:

- **Spanning boundaries**
- **Leveraging status**
- **Unifying change agents**
- **Developing affinity**
- **Reducing barriers**





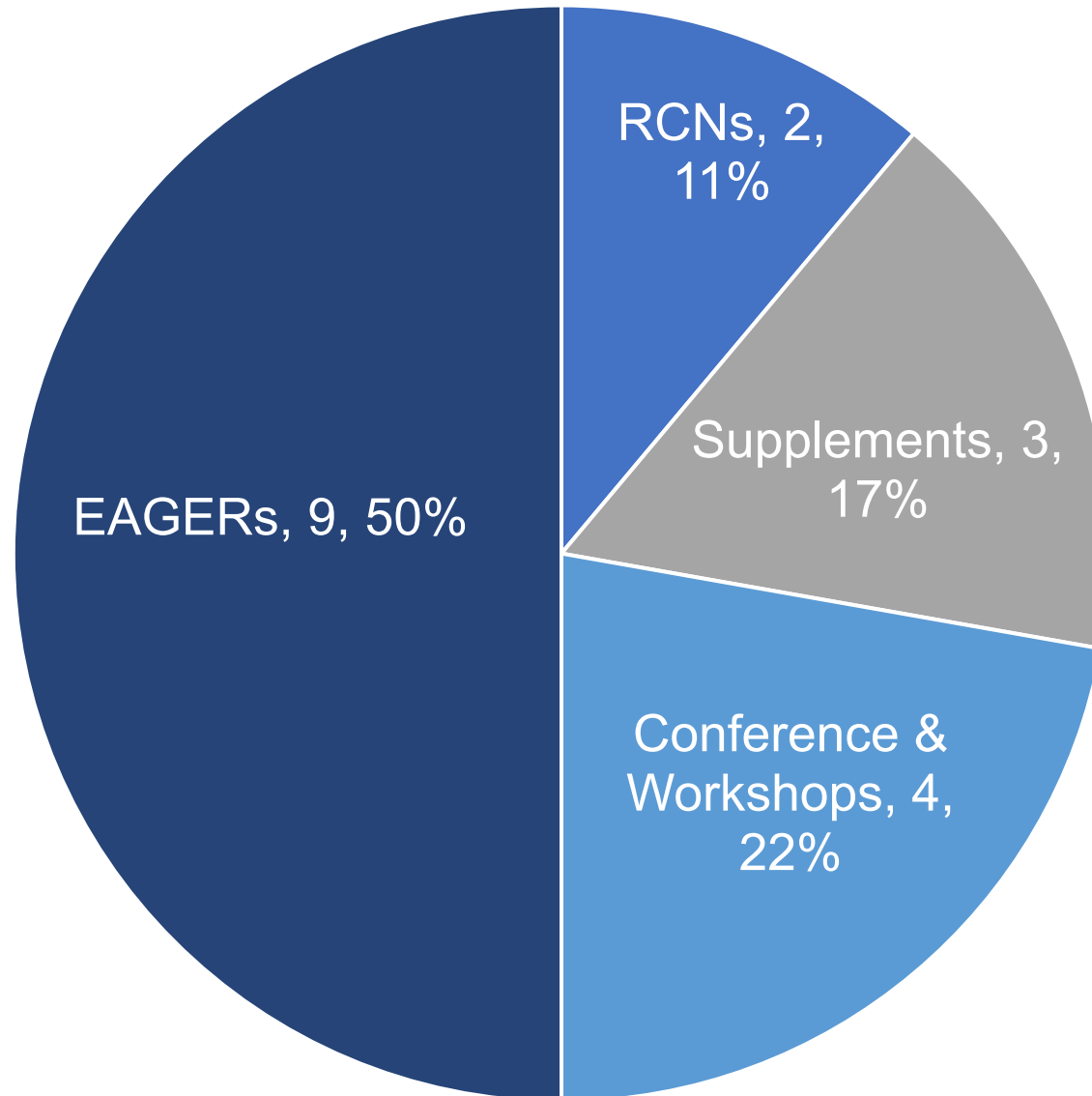
NSF 20-058
DCL: Geoscience
Opportunities for
Leadership in Diversity -
Expanding the Network
(GOLD-EN)



Supplements
Workshops/Conferences
RCNs
EAGERs



Geoscience Opportunities for Leadership in Diversity – Expanding the Network (**GOLD-EN**) Projects (18 total)



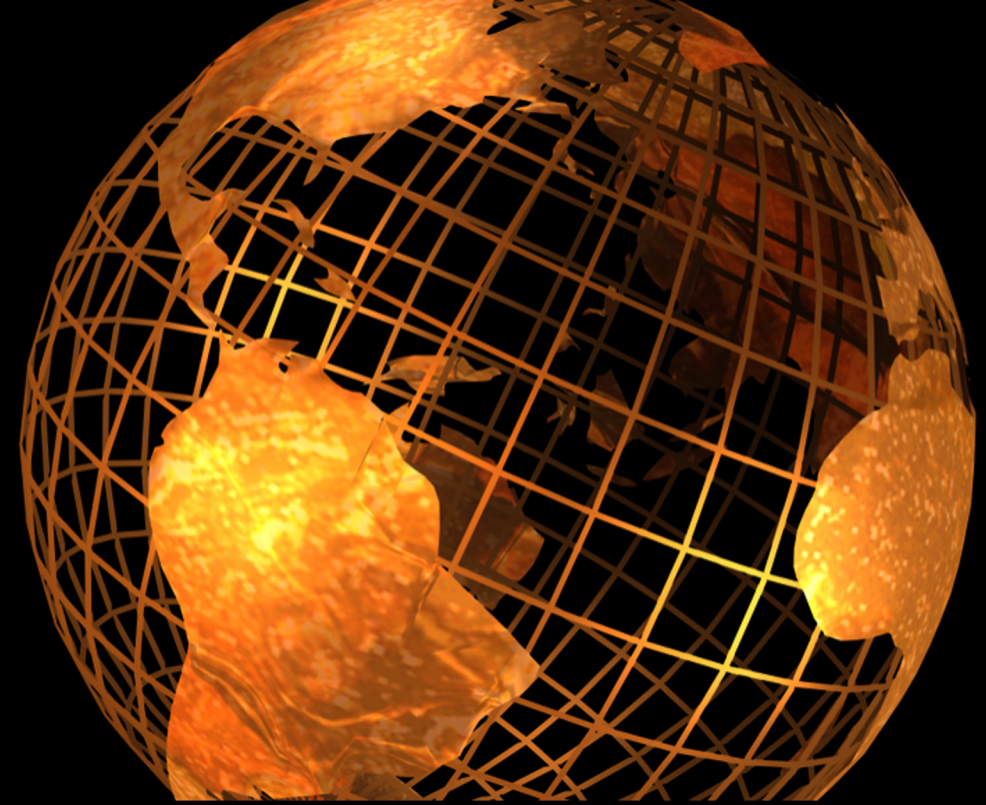


GOLD-EN EAGERS

Field	Veterans	Professional Development	Mentorship	Institutional Policy	DEI Curriculum	Race and/or Ethnicity	Disabilities	Institutions
			X		X			COLUMBIA
X						X	X	Berkeley UNIVERSITY OF CALIFORNIA
			X	X				BOISE STATE UNIVERSITY
		X			X			WILLIAM & MARY
	X		X					UCLA
		X	X					Colorado State University
			X	X				The UNIVERSITY of OKLAHOMA
X						X	X	RICE
			X			X		NAVAJO TECHNICAL UNIVERSITY ESTABLISHED 1974



**Geoscience
Opportunities for
Leadership in Diversity -
Expanding the Network
(GOLD-EN)**



**Current DCL = NSF 21-071
(Reference only)**

Broader Impacts

When evaluating NSF proposals, reviewers will be asked to consider what the proposers want to do, why they want to do it, how they plan to do it, how they will know if they succeed, and what benefits could accrue if the project is successful. These issues apply both to the technical aspects of the proposal and the way in which the project may make broader contributions. To that end, reviewers will be asked to evaluate all proposals against two criteria:

- **Intellectual Merit:** The Intellectual Merit criterion encompasses the potential to advance knowledge; and
- **Broader Impacts:** The Broader Impacts criterion encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes.

Making Your Broader Impacts Shine



Advancing Research Impact in Society

BROADER IMPACTS REVIEW DOCUMENT FOR NATIONAL SCIENCE FOUNDATION PROPOSALS

This document is designed to assist NSF program managers, proposal reviewers, and review panels, in evaluating the BI component of NSF proposals and to assist proposers with developing their broader impacts plans. This document also creates an opportunity for proposers to think critically about how their broader impact activities will incorporate into their research portfolio over time and begin to develop their “impact identity.” (Risien, 2018)

The guiding principles and questions component breaks down each of the five criteria by which NSF reviewers are instructed to review the broader impacts of a proposal. It also includes principles and questions to consider when developing a plan to address the criteria.

GUIDING PRINCIPLES AND QUESTIONS

Types of Broader Impacts: According to the current NSF Merit Review Criteria published in the Proposal and Award Policies and Procedures Guide (PAPPG 20) (See [Section II.C.2.d.](#)), NSF values the advancement of scientific knowledge and activities that contribute to the achievement of societally relevant outcomes. Such outcomes include, but are not limited to:

- Full participation of women, persons with disabilities, and underrepresented minorities in STEM
- Improved STEM education and educator development at any level
- Increased public scientific literacy and public engagement with science and technology
- Improved well-being of individuals in society
- Development of a diverse, globally competitive STEM workforce
- Increased partnerships between academia, industry, and others
- Improved national security
- Increased economic competitiveness of the United States
- Use of science and technology to inform public policy
- Enhanced infrastructure for research and education

The scope of the grant affects the degree to which one might address these goals. The list above is not exhaustive, and it is not generally necessary to address multiple goals in a proposal, as long as the broader impact goal is likely to have a desired societal outcome and is well planned. Accordingly, the PAPPG suggests the following five elements should be considered in the review process for broader impact activities (See [Section III.A.2.](#)). This resource includes recommended Guiding Principles and Guiding Questions for proposers and reviewers to consider when evaluating these elements.

