



Advancing Opportunities and Thriving Systems in Heliophysics

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Partnerships and Collaborations

***“Working on the 3UCubed Project has been a life changing experience”
-Sonoma State University Hispanic Undergraduate***

NASA’s IMAP Missions Student Collaboration Program*

***“Nothing for us or about us without us”
Autism Self-Advocacy Movement***

NASA’s Neurodiversity Network (Martin et al., 2024)*

“...The cry of the raven is encouraging us to balance our physical, emotional, intellectual, and spiritual selves, and to walk peacefully as we extend our ways to others and in our own Native languages.”

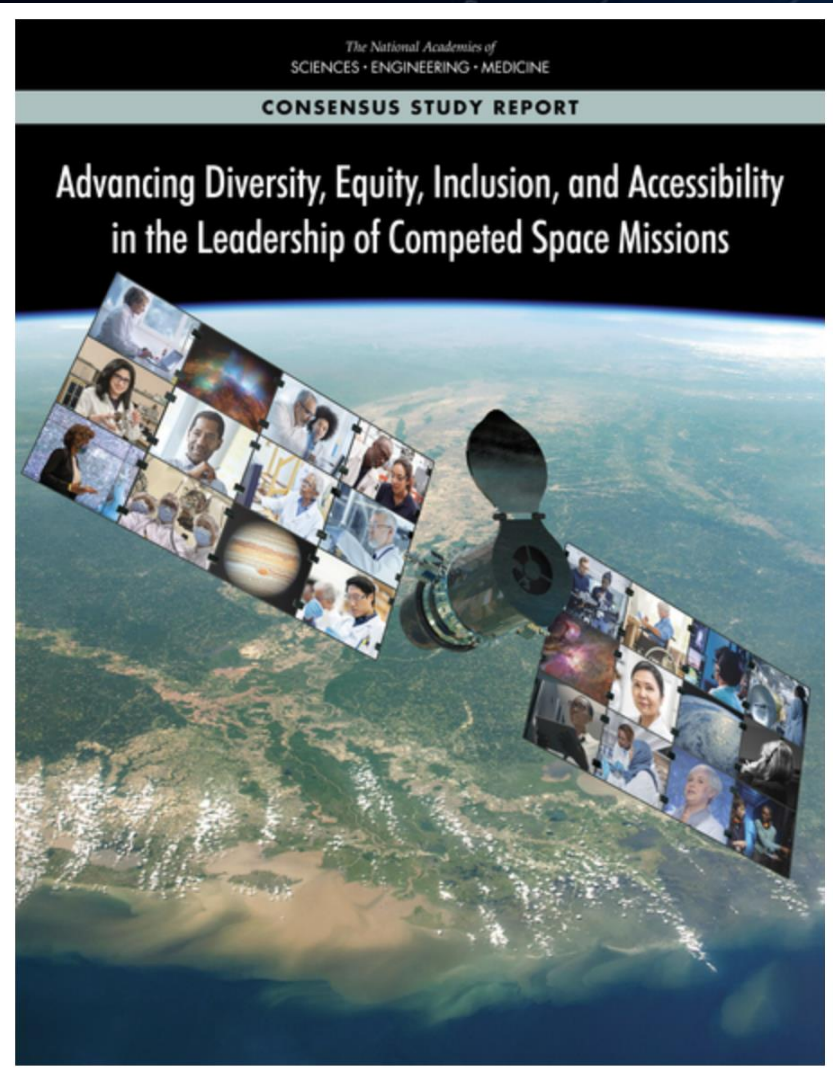
Angayuqaq Oscar Kawagley, Ph.D. (1934-2011)

NSF-Funded Collaborative Research: Cosmic Serpent - Bridging Native and Western Science Learning in Informal Settings (Maryboy et al., 2012)*

*Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author and do not necessarily reflect the views of the National Aeronautics and Space Administration or National Science Foundation



NASEM DEIA 2022 Report



- Recommendations Made Under Themes
 - *T1: PROPOSAL PROCESS AND REVIEW: ENHANCING OPPORTUNITIES, MITIGATING BARRIERS*
 - *T2: DATA SYSTEM: COLLECTION, ANALYSIS, AND REPORTING OF DATA ON PROPOSAL TEAMS, PROPOSER POOLS, AND WORKFORCE*
 - *T3: TRAINING AND MENTORING POTENTIAL PIs*
 - *T4: INVESTMENT IN CAREER PATHWAYS FOR UNDERREPRESENTED GROUPS*



Recognize and Utilize (External) Experts

“NASA should regularly ... require up-to-date reporting on climate within mission teams in ways that go beyond compliance.

For designing and interpreting climate assessments, NASA Science Mission Directorate should engage with content experts (e.g., survey design experts, social science scholars).”

- NASEM 2022 THEME 1 & RECOMMENDATION 6

Example At Sonoma State University (Hispanic Serving Institution)

- Partner with the Math, Engineering, and Science Achievement (MESA) program
- Led by an expert in supporting first generation college students
- Recruit undergraduates for our research and science education efforts
- Provides a model for creating a positive climate for these students.





Fund NASA Workforce Surveys

“To regularly assess the state of the profession, NASA SMD should provide funding for professional organizations **to employ the necessary professional expertise in survey methodology and statistical analysis**

...to inform NASA of the participation of different demographic groups as well as the barriers and opportunities for advancement along entire career pathways in the Earth and space sciences.”

- NASEM 2022 THEME 2 & RECOMMENDATION 9

Example At Sonoma State University

- Partner with professional evaluators to gather feedback and demographics
- Within an iterative feedback process, we can mitigate many challenges
- Allows reporting to NASA about barriers and opportunities



Implement an Intentional Strategy

“The committee found it more important to recommend an intentional strategy through guiding principles to inform NASA’s future investments for bolstering STEM pathways rather than prescribing specific interventions.

The guiding principles include

- (1) promoting the development of identities;**
- (2) establishing flexible and relevant STEM education-to-career pathways;**
- (3) intentionally recruiting from historically underrepresented groups;**
- (4) providing access to diverse mentorship;**
- (5) fostering career-life balance; and**
- (6) promoting systemic change around diversity, equity, and inclusion.”**

- NASEM 2022 THEME 4, pg. 119-120



References

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- Maryboy et al., 2012. Cosmic Serpent: Collaboration with Integrity. <https://informalscience.org/research/cosmic-serpent-collaboration-integrity/>
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