Diversity, Equity and Inclusion in Space Sciences – A Sustainable Picture

Paula Stone Williams, a transgender woman

NASA SMD’s strategic plan

Science Mission Directorate Core Values

LEADERSHIP EXCELLENCE INTEGRITY TEAMWORK SAFETY INCLUSION

“SMD is committed to fostering an inclusive environment of belonging where diversity of thought, backgrounds and perspectives are welcomed and celebrated. SMD recognizes that success is only achieved through full participation of inclusive and diverse teams, belonging and contributing as organizations and individuals. We are dedicated to creating a multi-pronged approach that brings systemic and lasting change in this area by fostering inclusion, diversity, equity and accessibility across all elements of our work through dedicated activities and sustained engagement.”

Formal Institutional Change

Leadership

Discussions around ‘inclusion in science’ are challenging and often shrouded. Need high level policy advisory groups and funding agencies to engage in the discussion far there to be traction. Science leadership and policy making activities (e.g., committee membership and input to committees) often come from too narrow a group of scientists. Narrow groups often underestimate barriers to inclusion that anyone good ideas. Policies and procedures need to be regularly monitored and re-assessed for intended effectiveness. We need to address the proper problems and concerns.

Access

Research funding (e.g., grants) is currently not tied to address the proper problems and concerns.

Policies

Committees (e.g., scientific, student, and others) are often shunned.

Incentives

Committees (e.g., scientific, student, and others) are often shunned.

Access is Crucial

☑ Advisory Access - Access to decision making on issues of science direction

☑ Scientific Resource Access - The availability of resources to support scientific research

Access to decision making on the inclusion of underrepresented and disenfranchised groups. “Broadening Participation” must be about workforce and research participation, not just public outreach and education.

Axes of Expertise and Diversity

"I didn’t know what I didn’t know.”

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The Roman Science Interest Group

provides broad-based community input to the Roman project and NASA headquarters. Its primary purpose is to assist NASA in ensuring that the interests of the scientific community are served by the Roman Space Telescope project in planning for and executing Roman development and operations.

Scientific Resource Access and The Evolution of Insider Status

Equity ≠ Equality

The quality of being fair; to provide all with the support they need to reach and exceed goals; the focus is on outcomes.
Funding for Scientific Resource Access

https://astroarchive.noao.edu

https://datalab.noao.edu

https://antares.noirlab.edu

log N per sq. deg.

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Function

Method

Sky exploration

Image discovery tool; Catalog overlay tool

Authentication

Web interface; datalab command; Python authClient, DL interface

Catalog query

Web interface ; datalab command line (CLI); Python queryClient, DL interface; TOPCAT

Image query

Simple Image Access (SIA) service

Query result storage

myDB; Virtual storage space

File transfer

datalab command; Virtual storage space

Analysis

Jupyter notebook server

Dual Anonymous Review

Proposer

Pros: Better focus on the science of the proposal

Cons: Can conflict with other science mission priorities (e.g. broad access)

Mitigation: Focus on implementation and regular assessment, revision

Reviewer

Pros: Anyone with a good idea can apply for merit based time

Cons: Institutions with private (large) telescope access have advantage

Mitigation: Focus on implementation and regular assessment, revision

Open Skies

• Pros: Everyone with a good idea can apply for merit based time

• Cons: Institutions with private (large) telescope access have advantage

• Mitigation: Focus on implementation and regular assessment, revision

Other Institutions (npub < 30)

Questions

We must be deliberate about HOW we embrace and practice Diversity, Equity and Inclusion to advance cultural change in Space Science.

• ACCESS IS CRUCIAL

• POLICIES REVIEWED

• RESEARCH INCLUSION VALUED AS SCIENTIFIC MERIT

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RESEARCH INCLUSION

Valued as part of how we assess scientific merit

• Policies and procedures that support mutually beneficial partnerships

• Opportunities for scientific networking and collaboration building

• Technical infrastructure that enables participation

• Provide science platform/tools training

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