ANDREW K. SAYDJARI

Postdoctoral Researcher | Harvard Center for Astrophysics
andrew-saydjari.github.io | andrew.saydjari@cfa.harvard.edu | he/him/his

DIVERSITY, EQUITY, & INCLUSION PHILOSOPHY

To succeed in the scientific endeavor, we must **engage**, **empower**, and **retain** those long-excluded from the professional astronomy community. I acknowledge the past explicit and implicit exclusion of marginalized individuals and I am committed to enabling equitable access to research and resources. Further, I am committed to continually educating myself in matters of equity and inclusion and to use my privilege and power to uplift and empower.

As a rural student in central Wisconsin, I experienced first-hand overcoming a barrier to academia presented by limited opportunities. My non-traditional interdisciplinary background and second-generation Syrian ethnic background have also taught me how othering and exclusionary academia can be. However, I recognize that the barriers present (based on race, class, gender, disability, and more) are broader than my own experiences and see the acute burden of those multiply marginalized on intersectional axes. I bring my experiences, empathy, and commitments with me as I advance DEI initiatives addressing 3 key imperatives:

1. **ENGAGE:** Inspire, excite, and demonstrate to communities near and far that science is theirs. This requires targeted outreach to minoritized communities and opportunity-conscious hiring/recruitment. Building representation at the highest levels is especially key to developing the relationships and environments important in retention.
2. **EMPOWER:** Provide training for key research skills targeting minoritized students and grow mentorship networks that pass along the "hidden curriculum" [1]. Maximize self-control of students' research programs, so they can adapt as necessary. Provide leadership opportunities with the power to make change, without burdening young scientists with solving the systemic problems already draining their energy.
3. **RETAIN:** Proactively monitor and quickly respond to issues of exclusion, harassment, and bias systemic in academia to retain diversity and prevent further marginalization [2]. Surveys and data collection are an important part of identifying issues within a community, and if past change was effective. However, to focus only on aggregate data is to miss the experience of the individual. Understanding and supporting the unique needs of an individual requires building trust through consistent action, flexibility, and building personal relationships.

As an early-career scientist, I have focused my efforts on specific actions and leadership roles where I feel empowered to cultivate community. I view this advocacy as inextricably intertwined with my identity as a researcher and mentor, because I know from experience how difficult research progress is in the face of harassment. These targeted efforts are designed to, and have succeeded in, improving the community in which my students and I live and work. I fiercely protect the time I allocate for building 1-on-1 relationships with students to support them as individuals, which I view as the most effective and rewarding DEI action and the core of realizing a more diverse, equitable, and inclusive academy.

PAST & PRESENT EFFORTS

I have and will continue to engage in DEI initiatives as a core part of my role in an academic department. A summary of previous and current efforts I am involved in are below.

Graduate Student (Harvard University, 2018-present)

Institutional & Structural Change:

In Spring 2023, I was nominated and elected by my graduate student peers as 1 of 2 graduate student representatives to the Harvard Astronomy hiring committee during a tenure-track faculty search (the first in nearly a decade). In this role, I helped design and run candidate interviews, where I suggested and amplified questions addressing candidates DEI work and attempted to limit bias by implementing a uniform scaffolded format. I worked to gather persuasive statistics (>80% participation) representing the graduate student position to faculty and the summary report I co-wrote was well-received by both faculty and students. During this search I advocated strongly for a teaching practicum component to the interview process and gathered significant (>75%) student support for this addition. I also strongly advocated gender and race-based representation in the department be considered while making offers.

In my role as a founding member of the Institute for Artificial Intelligence and Fundamental Interactions (IAIFI) Computing Committee (2022-present), I blocked the implementation of gate-keeping mechanisms that would have limited computational access for undergraduates and students at the margins of our collaboration. Instead, I pursued creative solutions using subtle features in SLURM as well as generating documentation and establishing communication channels within the collaboration to resolve issues.

The Chambliss Astronomy Achievement award for student poster presenters at the American Astronomical Society (AAS) meetings are often beneficial to students' graduate school admissions. As a volunteer judge, I observed that outcomes within the current scoring system were significantly impacted by random judge assignments. To remedy this, I used my statistical expertise to develop a judging calibration method and worked with the AAS Education Division to restore at least equality in this award, a step on the way to achieve equity in graduate school admissions.

Community Building:

I have focused on (re)-establishing community building activities that cultivate connections between students and faculty. Within my research group, I led the restart of Cape Code (IV and V), a focused coding retreat where students and professors spend a week on Cape Cod working together on research problems. This activity has become an important formative experience for new group members in developing a sense of belonging. In 2022-2023, I served on the organizing committee for the Student Faculty Research Forum (StuFF), where I sought out diverse speakers, advocated for inclusive hybrid policies, and implemented protections for students needing to avoid specific faculty members during the discussion portion of the event.

[1] Gable (2021) "The Hidden Curriculum: First Generation Students at Legacy Universities" Princeton Univ. Press.
[2] Jack (2019), "The Privileged Poor: How Elite Colleges are Failing Disadvantaged Students" Harvard Univ. Press.

I advocated for, and successfully obtained, funding from the CFA Director's Office to uniformly fund graduation celebrations for students. The previous policy had graduate students funding celebrations up-front and crowdfunding their reimbursement from participants. This change helped to alleviate a financial stress which disproportionately impacted students with few connections in the department while building community within the department.

DEI in Teaching and Mentorship:

In Fall 2021, I served as the Teaching Fellow for Solid State Physics. I supported inclusive hybrid learning options and strove to cultivate a classroom community where non-binary students and students with a diverse range of preparation (Sophmores-G1s) and exposure to science (non-STEM majors) were comfortable collaborating and expressing themselves. I provided additional assistance and encouragement to students who were encountering difficulties and extension materials for students with an existing grasp of the core material, thus preventing these students from dominating discussions or intimidating others. I also spent time getting to know my students 1-on-1, providing direct connections to internships and research opportunities, and often simply listening to them relaying their experiences of racism in academia and discrimination based on sexual orientation.

Over the summers from 2021-2023, I developed and taught the "Introduction to Python" series for students in the SAO-UMass Latino Initiative Program. My efforts helped close a skill gap to empower students to engage more deeply with their research projects.

I am interested in lowering the barrier to entry for non-traditional students and worked with the Harvard Observing Project to mentor a Harvard Extension School student through a machine-learning image processing research project during the 2020-2021 academic year.

Accessibility and Outreach:

One of the biggest inequities in academia is simply access to networks of researchers, for example colloquium circuits that run through major cities or survey collaborations requiring significant financial contributions from host institutions. One of the reasons I insist every figure in my papers is reproducible via Zenodo repositories (and all code developed publicly on GitHub) is to ensure students from small towns like me or from smaller institutions can engage with my science. I also correspond actively with post-bacs and undergraduates at other institutions to support the use of my code bases and facilitate their access.

Part of engaging students and the public in astronomy is speaking to them about current scientific work in a way that is honest while not overly reductionist. I enjoy practicing this by contributing accessible popular science blog posts (e.g. MathStatsBites). Communication also involves reaching across linguistic barriers, which is why I worked hard to make sure the press release for a survey I led (DECaPS2) had both English and Spanish versions. I gave interviews about the project at small publications targeting primary school students as well as big outlets, to try to reach as many students as possible.

As a graduate student I have participated in several one-off outreach activities seeking to engage the local community such as presenting machine-learning imaging classification in astronomy at the

MIT Cambridge Science Festival. I also helped build sonification devices as part of the LightSound project to help members of the blind and low vision community experience solar eclipses.

Undergraduate Student (Yale University, 2014-2018)

As an undergraduate, I ideated and prototyped a low-cost kit ("LitKit") to convert conventional public-school microscopes into fluorescent microscopes. This educational "start-up," working to distribute kits and educational materials at cost, was designed to give rural students in school districts with fewer resources training and exposure to cutting-edge techniques to better prepare them for research in biology/chemistry. As part of this work, I learned how to develop networks of local educators and most importantly listen to their concerns and needs when designing a solution to a problem in which they have more experience.