AAS Graduate Diversity and Inclusion Task Force

AIP Leadership Gathering
March 28, 2019
AAS Diversity and Inclusion Taskforce Membership

• Alex Rudolph, Cal Poly Pomona, co-Chair
• Gibor Basri, UC Berkeley, co-Chair
• Marcel Agüeros, Columbia, AAS Board liaison
• Keivan Stassun, Vanderbilt, SGMA representative
• Kim Coble, San Francisco State Univ., CSMA representative
• Angela Speck, Univ. of Missouri, CSWA representative
• Jackie Monkiewicz, Arizona State Univ., WGAD representative
• Ed Bertschinger, MIT
• Megan Donahue, Michigan State Univ., President, AAS, ex-officio
• Julie Posselt, USC, Senior advisor

https://tinyurl.com/AASDiversityTFReport
Some context for this effort...

See also the report from the National Academies of Sciences:
https://www.nap.edu/catalog/25038/graduate-stem-education-for-the-21st-century
Situating this work: Across time, within astronomy

1996 AAS Examination of Graduate Education in Astronomy
- Argued “reduction of the population of graduate students or graduate departments is not wise” & recognized difficulty of talent identification
- “Birth control” via admissions would compromise “stated goal of enhancing diversity”

2010 Decadal Survey
- “Little progress has been made increasing the number of minorities”
- Recommended creating partnerships between research universities & MSI’s

2015 Inclusive Astronomy & Nashville Recommendations
- Topic areas: Removing barriers to access; Creating inclusive climates; Improving inclusion and access to power, policy, leadership; Establishing a community of inclusive practice

2016 AAS GRE statement
- The first of its kind by a disciplinary society

Black, Latinx, Indigenous, & other URM-classified students comprise:

3% of astronomy PhDs from ‘02-12

30% of the general population.

Source: NSF, 2015
Goals of the Task Force

1) Strengthen consensus on evidence-based best practices for recruitment, admissions, and retention of a diverse graduate student population

2) Development of a statement of these best practices for adoption by the AAS Board of Trustees

3) Build on Inclusive Astronomy 2015 process by documenting existing implementations of best practices

4) Development of recommendations for ongoing data collection to monitor progress of diversity and inclusivity in astronomy
Outcomes of the Task Force

1) Delivery of a final report to the AAS Board, which they voted to endorse at this past weekend’s board meeting
   • Recommendations to departments on three main areas
     i. Recruiting and admissions
     ii. Retention and mentoring
     iii. Data collection and metrics of success
   • Recommendations to the AAS for ways it can lead the effort to promote diversity and inclusion nationally and support departments that commit to such efforts

2) Issuance of a statement by the AAS Board endorsing the Task Force’s recommendations and urging departments to adopt them

3) AAS/AIP will collect national demographic and climate data and create a platform on the AAS website to track these data as well as provide a space for departments that adopt the recommendations to report their progress
How will we know if it’s working?

Our working theory of change

We need to

1. Measure baseline & ongoing status,
2. Invest in processes that support the change, and
3. Recognize the places where change is occurring in a sufficiently public forum that agents of change are incentivized to act.

- **Recommendations to participating departments** are to adopt practices that will encourage improvement in diversity and inclusion.

- **Recommendations to the AAS** align with measurement, investment, and recognition on a national scale.
Admissions
Goals: Admissions

A. Demographics of students admitted to PhD programs should reflect those of availability pool
B. Admissions processes should broaden definitions of excellence and merit
C. Applying to a graduate program should be transparent, informed process
Recommendations: Admissions

*Programs will follow through on Nashville Recommendations by:*

1. Partnering with and recruiting from programs that produce large numbers of graduates from underrepresented groups
2. Implementing evidence-based, holistic approaches to admissions
3. Ensuring that program-level policies and practices are supported and amplified at institutional level
Retention
Goals: Retention

Establish and carry out strategic plans with measurable outcomes in the following areas derived from the “Nashville Recommendations”: 

A. End harassment and bullying in and around astronomical workplaces
B. Provide an accessible environment, including but not limited to full ADA compliance
C. Provide a healthy, welcoming, family-friendly environment
D. Provide effective mentoring through evidence-based practices and expanded networking opportunities
E. Adopt teaching and learning practices that support all students, especially those with marginalized identities
Recommendations: Retention

*Strategic planning and implementation steps:*

1) Engage in genuine, open, and sometimes difficult conversations
2) Conduct assessments to identify areas of need or opportunities
3) Create short- and long-term actionable department plans
4) Incentivize and support professional development
5) Take actions based on plan and monitor progress toward outcomes
6) Encourage ongoing improvements toward inclusiveness by iterating through the process represented in steps 1-5
Data Collection and Metrics of Success
Goals: Data and Metrics

A. Measure the status of diversity and inclusion in programs producing graduate degrees in Astronomy

B. Provide a platform that incentivizes, recognizes, and disseminates steps that these programs take to increase diversity and inclusion in Astronomy

C. Actively participate in the effort to produce, test, and disseminate new promising practices that increase diversity and inclusion in Astronomy
Recommendations: Data and Metrics

1) Participate in the recommended AAS/AIP national demographic and climate survey
2) Regularly collect and analyze data relevant to graduate education

https://tinyurl.com/AASDiversityTFReport
Examples of demographic data

PhD Completion rates in a Physics/Astro program

Astro Undergrads compared to all Undergrads

https://tinyurl.com/AASDiversityTFReport
Recommendations to A/AP Departments: Data and Metrics

1) Participate in the recommended AAS/AIP national demographic and climate survey
2) Regularly collect and analyze data relevant to graduate education
3) Assess the success of steps to improve the educational experience of graduate students using an evidence-based rubric
4) Report results on progress in implementing the recommendations of this Task Force on the platform provided by the AAS, and on departmental websites

https://tinyurl.com/AASDiversityTFReport
Recommendations to AAS: Measurement of Practices & Climate

Contract with AIP to create a web-accessible survey for participating departments, centering on a small set (~10) of standardized climate questions

- Key demographic variables would also be surveyed
- Departments will be asked to encourage participation
- Only aggregated results would be made public
- Departments could negotiate to receive more detailed results (with careful protection of privacy at both ends)

https://tinyurl.com/AASDiversityTFReport
Sample Climate Data:

Examples of possible survey items:

- My colleagues treat me with dignity and respect.
- I am comfortable with the climate in my classes / research group / work environment.
- There is adequate dissemination of information on climate-related resources and policies.
- The Department gives me the support I expect towards the achievement of my professional goals.
- The Department articulates and uses clear expectations and guidelines relevant to my goals.
Recommendations to AAS: Recognition of progress

Maintain a platform to let departments share their practices and metrics. Serves as a resource for prospective graduate students looking for the most inclusive departments. Encourage participation in this effort

- Encourages adoption of practices outlined in “Recommendations to Departments”
- Provides public recognition for participating departments
- Provides information about those departments for prospective graduate student
- Over time, provides a measuring tool of national progress for the field

https://tinyurl.com/AASDiversityTFReport
Recommendations to AAS: Fostering of progress

- Invest in the continued development, sharing, and curation of research- and best-practice based toolkits to implement evidence-based recruitment, admissions, and mentoring practices.
- Encourage participation by the AAS equity committees and working groups in the AAAS SEA Change initiative.

https://tinyurl.com/AASDiversityTFReport
AAS Diversity Task Force final report URL:
https://tinyurl.com/AASDiversityTFReport
Background slides
What would take for the field to take up these recommendations?

Leveraging the forces of institutional isomorphism¹

**Coercive isomorphism**
- People & organizations conform to expectations of high-status resource providers
- Therefore, NSF & AAS policies & expectations on PI’s and faculty can serve both preventative & enforcement functions

**Normative isomorphism**
- Professionalization processes shape what is normal behavior for the next generation
- Therefore, graduate education & leadership development can be an intervention in the future of science

**Mimetic isomorphism**
- People & organizations model their behavior on those with the most power
- Therefore, we can nudge the system by changing the behavior of powerful players within it (i.e., faculty development, policy change in high-status departments)

Working for change from multiple angles¹

TOP-DOWN:
- AAS should continue its tradition of advocacy for evidence-based policies & practices that support diversity
- Collaborate with other disciplinary societies via IGEN
- Highlight departments that are willing to make changes

BOTTOM-UP:
- Think globally, act locally
- Astronomy has a comparative advantage as a discipline with
  - its grassroots movement for equity and inclusion
  - institutionalization & leadership of bridge programs

INSIDE-OUT:
- Not everyone can or should do everything, but we can all revisit the ethics & evidence for our assumptions, especially as they affect standard operating practices for admissions, recruitment, mentoring, & support.

SYSTEMICALLY:
- Recognize interdependencies between access & success and among the practices that support those goals.

Recommendations: Admissions

1. Partnering with and recruiting from programs that produce large numbers of graduates from underrepresented groups
Recommendations: Admissions

1. Partnering with and recruiting from programs that produce large numbers of graduates from underrepresented groups
   
a. Establish relationships
b. Develop programs that grow talent from within
c. Open pathways into graduate programs
d. Address disconnect with our graduate programs
e. Increase visibility of a diversity of astronomers
## Recommendations: Admissions

### 2. Implementing evidence-based, holistic approaches to admissions

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Rating: High</th>
<th>Rating: Medium</th>
<th>Rating: Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive self-concept</td>
<td>Expresses confidence they can complete challenging goals, makes positive statements about abilities</td>
<td>Shows confidence and independence but may be unsure about adequacy or skills</td>
<td>Exhibits low self-esteem and low confidence in their abilities</td>
</tr>
<tr>
<td>Realistic self-appraisal</td>
<td>Can clearly and realistically delineate strengths and weaknesses, works on self development</td>
<td>Has trouble identifying strengths and weaknesses but appreciates/seeks both positive and negative feedback</td>
<td>Over or understates abilities, does little to no self-assessment, does not appear to have learned from experiences</td>
</tr>
<tr>
<td>Research experience</td>
<td>Able to articulate both the science of their specific research and how it fits into the bigger scientific picture</td>
<td>Able to describe the specific science in their own research but little to no ability to articulate how it fits into the bigger picture</td>
<td>Only able to articulate a superficial understanding of their own work, and little to no understanding of the bigger picture</td>
</tr>
</tbody>
</table>

*Sample rubric (UMD)*
Recommendations: Admissions

2. Implementing evidence-based, holistic approaches to admissions
   a. Programs should
      i. reduce reliance on standardized tests
      ii. structure information gathered via recommendation letters
      iii. incorporate assessment of socioemotional competencies
   b. Reviewers should approach prospective students as learners
   c. Programs should work to mitigate inequalities
   d. Reviewers should use evaluation rubrics
Recommendations: Admissions

3. Ensuring that program-level policies and practices are supported and amplified at institutional level

Examples:

a. fee waivers
b. demographics of applications, enrollment, and degree attainment
c. application contents and admissions practices
d. GRE policies
e. funding opportunities
Example: Retention

**Area C: Provide effective mentoring through evidence-based practices and expanded networking opportunities**

1. Provide mentoring structures that give students more than one person as a close advisor
2. Provide/require mentoring training for faculty and other parties involved in mentoring, such as postdocs, research scientists, staff, etc.
3. Provide mentee training to help mentees be more proactive in their mentoring relationships
4. Create and support near-peer mentoring structures
5. Provide access to mentors of color and mentors from other marginalized groups
6. Increase networking opportunities for students, including marginalized students
7. Establish a positive culture around non-academic careers
8. Establish a non-judgmental culture around time to degree

Sample Toolkits and Resources:
CIMER training, curricula, and resources to improve mentoring relationships:
www.cimerproject.org
Working Group on Admissions

Working Group Co-Chairs:
Marcel Agüeros (Columbia), Keivan Stassun (Vanderbilt)

Advisor:
Julie Posselt (USC)

Working Group Members:
Peter Frinchaboy (TCU), Jenny Greene (Princeton),
Emily Levesque (UW), Seth Redfield (Wesleyan), Alex Rudolph (CPP)
Working Group on Retention

Working Group Co-Chairs:
   Angela Speck (U Missouri), Kim Coble (SFSU)

Advisor:
   Christine Pfund (U Wisconsin)

Working Group Members:
   Eric Hooper (U Wisc), Mariangelly Diaz-Rodriguez (FSU),
   David Helfand (Columbia), Jackie Monkiewicz (ASU),
   Alex Rudolph (CPP)
Data Collection and Metrics of Success

Working Group Co-Chairs:
   Edmund Bertschinger (MIT), Jacqueline Monkiewicz (ASU)

Advisor:
   Rachel Ivie (AIP)

Working Group Members:
   Gibor Basri (UC Berkeley), Richard Anantua (UC Berkeley),
   Megan Donahue (MSU), Douglas Richstone (U Michigan),
   Meg Urry (Yale), Jarita Holbrook (U of Western Cape)
## Sample Self-Assessment Rubric

<table>
<thead>
<tr>
<th>Departmental climate</th>
<th>Stage 1: Emerging</th>
<th>Stage 2: Developing</th>
<th>Stage 3: Transforming</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Communications</strong></td>
<td>Department website provides information on policies and procedures and points to university-wide resources. Departmental communications use minimal language around equity and inclusion.</td>
<td>Department chair communicates the importance of equity and inclusion in person and in writing shared with all department members. The department website provides details on family-friendly policies, mentorship, inclusive teaching, and responding to harassment and bullying</td>
<td>The department has adopted a values statement and a code of conduct. The department chair advises other departments on how to improve the climate for all people. The department chair periodically hosts colloquia on topics related to diversity, equity, and inclusion in academia.</td>
</tr>
<tr>
<td><strong>Training</strong></td>
<td>Department members participated in mandatory university trainings on lab safety, Title IX, etc.</td>
<td>New faculty receive training on teaching, mentoring, and on university resources to support the success of all people. Faculty search committee members receive training on implicit bias and best practices for inclusive searches</td>
<td>Department chairs receive training on diversity, equity, and inclusion, and on mediation and conflict management. They receive regular coaching. The department hosts trainings for all members on topics such as “being an ally”, responding to microaggressions and harassment, and inclusive teaching practices. The majority of faculty attend these trainings</td>
</tr>
</tbody>
</table>