Statement #6: Best Practices for Justice, Equity, Diversity, and Inclusion

This statement, informed by the references provided below, aims to address the needs of mathematics departments with regards to establishing and maintaining an environment supportive of diversity and the implementation of equitable and inclusive practices. The MAA recognizes that Black, Indigenous, and Latinx/Hispanic people, women, and individuals who have disabilities have been historically excluded from mathematics in the United States and as such are vastly underrepresented in the field. In addition, racism broadly and negatively affects people of color both domestic and international, and bigotry negatively impacts LGBTQIA+ individuals. In this statement, we will use the terms “underrepresented” and “underserved” to refer to faculty and students from the aforementioned groups, while acknowledging that this status is a direct result of years of systematic exclusion. We recognize that our understanding of who has been underserved will continue to evolve. We further acknowledge that while some of the challenges of underrepresentation in mathematics departments are similar among the various groups, each group also faces unique challenges, and there is a complex intersectionality among people’s identities.

Part I: Recruiting and Retaining Faculty from Underrepresented Groups

Statement 1 from the MAA Committee on Faculty and Departments, published in 2017, addresses best practices in recruiting, retaining, developing, and evaluating faculty in college and university mathematical sciences departments. The MAA recognizes that certain groups are historically underrepresented in the mathematical sciences at the faculty level and it is the responsibility of every department to intentionally pursue diversity by actively engaging in practices that can lead to diversification of the profession. In this statement, we aim to give further guidance specific to the recruitment of mathematics faculty from underrepresented groups and support to those from underserved groups.

Recruitment

In terms of recruitment, the following best practices were drawn from a variety of sources.

A) Before the search begins, departments should:
   i) Evaluate the department’s composition — what are its strengths and challenges? Conversations about the department’s diversity and how it is perceived by students and others internal and external to the department can lead to a common understanding and can help avoid tokenism.
   ii) Train the search committee on implicit bias in relation to search and hiring practices and/or have a “equity advocate” as a committee member. This should be done before the vacancy announcement has been written to support members in crafting an inclusive job description.

iii) Clarify search committee rubrics, policies, and procedures before advertisements are placed and applications come in.
iv) Create a search committee composed of members who are open to using best practices guidelines for recruiting faculty from underrepresented groups to inform the search.
v) Search as broadly as possible in order to attract a large and diverse applicant pool. For example, instead of searching for a stable homotopy theorist, consider opening the search up to topologists; instead of searching for a topologist, open the search up to a "theoretical" mathematician; instead of searching for a theoretical mathematician, open the search up to the best teacher who can support a diverse student body.
vi) Expand the search criteria to include experience mentoring underrepresented students and/or ability to contribute to diversity, equity, and inclusion (DEI) efforts on campus.
vii) Intentionally seek candidates who have a track record of mentoring underrepresented students.

B) For the search, departments should:
i) Advertise widely, using information from the AMS on PhDs earned to target institutions where underrepresented graduates have obtained degrees. Places to consider advertising include the National Association of Mathematicians (NAM), the Association for Women in Mathematics (AWM), and the Center for Minorities in the Mathematical Sciences (CMMS). Seek out applicants from institutions known for graduating underrepresented PhDs, including HBCUs.
ii) Highlight institutional values and activities regarding DEI in job advertisements, along with any initiatives designed for faculty support (such as family-friendly policies).
iii) Obtain institutional funding for members of the search committee to travel to conferences and other recruiting events, including those that attract applicants from underrepresented groups.
iv) Develop strategies based on inclusion rather than exclusion. For example, rather than whittling down a list of applicants by excluding those with limited teaching experience, instead look to include those applicants with demonstrated effectiveness at supporting students whether through teaching, mentoring, or some other means.
v) Keep data on applications, especially regarding underrepresented applicants, and then review it to see if it matches the department's goals for applications, interviews, and hiring.
vi) Incorporate some flexibility in whom candidates meet with when they come to campus. There will be a set predetermined list (e.g., Provost, Chair, department members), but ask candidates who else they might want to talk to (e.g., other women; Black, Indigenous, or People of Color (BIPOC); or LGBTQ+ folks) during the interview process.

Retention

It is not enough to simply hire a faculty member from a historically underrepresented group. The department and institution must work collaboratively to ensure that the faculty member is supported throughout their career. Again, the following best practices were drawn from a variety of sources, available below.

A) Develop policies that are supportive of underrepresented faculty such as:
i) Family-friendly policies in the department and institution that value a work-life balance.
ii) Reduced dependency on student evaluations, as there is evidence that they are biased against underrepresented groups [1, 2].
iii) Tenure, promotion, and annual review measures that support DEI scholarly and service activities and recognize the substantial bias in evaluations of women and BIPOC faculty members. Activities might include:

a) Participating in professional development focusing on DEI
b) Using effective teaching methods that promote DEI
c) Engaging in scholarship that focuses on DEI in mathematics and/or mathematics for DEI
d) Organizing or participating in outreach focusing on DEI
e) Formal and informal mentoring of underrepresented students

iv) Develop a robust mentoring program both in the department and at the institution. Underrepresented faculty will benefit from engaging with mathematics colleagues and fellow underrepresented faculty mentors to help them navigate the institution. While there might be one or two official mentors, be clear that supporting departmental faculty – especially faculty from underrepresented groups — is the responsibility of the entire department, not just the mentors and/or chair.
v) Develop norms for behavior and decision-making processes at department meetings that contribute to a supportive environment, and articulate these in writing.
    a) Behavior norms might include arriving on time, not talking over people, recognizing each person's contributions, being truly present and not doing other work during meetings.
    b) Decisions might be entirely in the hands of the chair, arrived at by vote (by all members, just tenured members, or another method), or tabled until consensus is reached. Whatever the method, the details should be known by all in the department.
vi) Celebrate accomplishments in teaching, scholarship, and service informally by mentioning them at a meeting, or stopping by someone's office for a chat.
vii) Provide all faculty with periodic cultural awareness and sensitivity training. Host workshops, seminars, or colloquia on DEI.
viii) Be aware that underrepresented faculty are often called upon to do more committee work, service work, and mentoring than other faculty members, which can detract from the scholarly activity necessary for promotion.
    a) More senior faculty (e.g. the department chair) can help new underrepresented faculty set appropriate boundaries to guard their time — perhaps by providing clear guidelines about the level of service that is expected and providing a buffer between the administration and the faculty member if the administration or other colleagues are asking too much [3].
    b) Some underrepresented faculty find that institutional service helps form much needed community for retention, survival, or creative research. Implement programs which allow interested faculty to earn course release or stipends for such work.
    c) Within a department, the work of justice, equity, diversity, and inclusion belongs to all department members, not just to underrepresented faculty.

Part II: Supporting Students from Underrepresented Groups

MAA-CFD Statement 3 and Statement 5, both published in 2020, address general issues of student recruitment and support, while this statement more specifically addresses departmental policies and practices regarding the recruitment, retention, and academic success of traditionally underrepresented students. For historically underrepresented minorities, departments should focus on preparation, access and motivation, financial aid advocacy, academic support, and social integration [4]. In the following, we provide recommendations for departments to revisit their recruitment, placement, teaching, and curricular practices to address any potential gaps in creating an inclusive environment for underrepresented students.

A) Recruiting Students from Underrepresented Groups: Departments are encouraged to approach recruitment offices at their institutions to explicitly discuss any existing gaps in recruiting mathematics (or mathematics-related) majors who have been historically excluded from the field. As many recruitment offices focus on obtaining a larger number of students, it might be a department's responsibility to shed light on recruiting more underrepresented students.
B) Placement Practices: We recommend departments examine the ways in which existing placement practices and tools disadvantage underrepresented students [5]. After identifying any existing marginalizing placement practices, departments should address the issues by adopting tested and evidence-based practices that support the success of underrepresented students [6]. This might include placing students in co-requisite support courses rather than relying on traditional notions of prerequisite coursework.
C) Advising and Mentoring
    i) Departments are encouraged to review advising materials and processes to address implicit biases in how underrepresented students are advised academically. For instance, they may be advised to choose "easy" electives during course selection. They may not be frequently made aware of internship and REU opportunities, encouraged to take on mentored research, or recommended to consider graduate study. Departments should also encourage academic advisors to attend workshops on implicit bias and its impact on underrepresented students' success.
    ii) As advising plays a huge role in underrepresented students' success, we additionally recommend the formation of a special network of advisors from departments and **First Year Success Centers** to focus their efforts on securing successful mentoring and advising for underrepresented students.
    iii) Mentoring initiatives can be a powerful tool for student support. Mentoring of students can be done by both faculty and peers, perhaps pairing first-year students with upper level majors.
D) Building a Supportive Environment
    i) Learning to Advocate for Underrepresented Students: Departments are encouraged to have regular departmental teaching circles, seminars, and/or book clubs. These are reflective opportunities for faculty to address any particular needs that might come up when advocating for marginalized students [7].
    ii) Increasing Visibility of Underrepresented Mathematicians: Departments should make an effort to recruit mathematicians from marginalized groups to speak at departmental colloquia or other events. Websites like **Lathisms**, **Mathematically Gifted and Black**, **Indigenous Mathematicians**, **Spectra**, and the **Association for Women in Mathematics** could serve as a starting point for identifying speakers or connecting students to further resources and support.
    iii) Establish a Welcoming Community within the Department: In addition to peer and faculty mentoring for students, a sense of community can be established through departmental meet-and-greets for majors and minors, student clubs or organizations, book clubs, game nights, collaborative problem-solving, student-faculty research projects, and group volunteering.
    iv) Connecting Underrepresented Students to Internal and External Support: Faculty should familiarize themselves with other opportunities for supporting marginalized students. Most campuses have inclusion-based centers, sometimes called social justice centers, that faculty can help students connect with. Externally, departments might purchase departmental memberships to professional organizations (e.g. Association for Women in Mathematics; National Association of Mathematicians; Society for Advancement of Chicanos and Native

Americans in Science) to facilitate networking, mentorships, REUs, scholarships, conferences, and post-baccalaureate educational opportunities for marginalized students.

E) Evaluation: Departments should establish program review measures (e.g. MAA-CFD Statement 5; MAA Committee on Program Review) for recruiting, tracking, mentoring, and advising of students, including those from underrepresented groups. Data gathered should inform departmental decision-making.

Part III: Equitable and Inclusive Teaching and Curriculum

MAA-CFD Statement 4, published in 2020, introduces general best practices for mathematics curriculum and teaching. The following provides more detail about the curriculum and pedagogy that supports underrepresented students. Departments in the mathematical sciences should determine the content and implementation of their program to ensure equitable and inclusive pedagogy. This requires that all students have access to high-quality mathematics curriculum, effective teaching and learning, high expectations, and the support and resources needed to maximize their learning potential [8]. Following are guidelines for cultivating equitable and inclusive education environments.

Teaching

A) Consider adopting research-based instructional practices that have been shown to foster success for underrepresented students.
   i) Inclusive [9], active learning (AL) [10], and anti-deficit pedagogical practices [11] allow underrepresented students' voices to be heard.
   ii) AL techniques create supportive learning environments that lead to higher achievement for members of groups that are traditionally underrepresented in mathematics [10, 12, 13], provided that careful attention is paid to group dynamics.
   iii) Social justice pedagogy [14] and responsive, culturally relevant pedagogy recognizes how students learn, what they are passionate about, and what they are interested in.

B) Set, communicate, and maintain classroom norms that allow all voices to be heard and respected. Additionally, the following are recommended:
   i) Establish transparent rules.
   ii) Establish fair grading using rubrics (e.g., include exceeds, meets, and does not meet expectations).
   iii) Provide timely feedback and assessment consistently and regularly.

C) Invest time and resources to:
   i) Educate faculty on effective AL techniques.
   ii) Educate faculty on implicit bias and best practices to ensure educators address their own assumptions about different behaviors so judgment does not occur in the classroom and departmental workspaces.
   iii) Support faculty participating in social and racial justice workshops and conferences.
   iv) Reward faculty for collaborating with institutional centers for innovative teaching and learning and centers for equity, diversity, and inclusion.
   v) Strategize, develop, and implement policies, models and programming that address racial discrimination and systemic racism (for example, the **MSRI Workshop on Mathematics and Racial Justice 2021**).

Curriculum

A) Be aware of common curricular practices that might drive student attrition from STEM majors, such as the traditional model of prerequisite developmental mathematics courses described in Part IIB. The Dana Center provides a **toolkit** [6] for effectively implementing corequisite support courses.
B) Train individuals on DEI best practices and form a team of four to five (including, at minimum, one external mathematician, one woman, and one BIPOC) to perform an **equity curriculum audit**. Guidelines should be established that incorporate data from social justice studies and knowledge of inclusive curriculum.

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