

# Diversity Plan

## Department of Physics

### June 1, 2020

### Vision

The Physics Department is committed to attracting a diverse faculty, staff, and student body that reflects the composition of the nation. An inclusive environment and a diversity of backgrounds, viewpoints, know-how, knowledge, and life experiences are key to cultivating an arena for intellectual excellence and generating new scientific ideas and connections between them. These goals are integrated into the Department’s [Statement of Values](#) and [Code of Conduct](#).

### Mission

Our mission is to increase the diversity of our students, faculty, and staff and to sustain an inclusive environment that is free of discrimination based on any personal factors unrelated to qualifications or performance, including “(without limitation) race or color, citizenship, national origin or ethnicity, ancestry, religion or creed, political affiliation or belief, age, sex or sexual orientation, gender identity or expression, physical or mental disability, marital status, pregnancy status, parental status, height, weight, military service, veteran status, caretaker status, or family medical or genetic information” (W&M’s non-discrimination policy). The composition of the Department and the national physics community do not currently reflect the composition of the nation (in the “personal factors” listed above), so our mission is to develop institutional practices that will encourage greater diversity within our Department.

### Diversity in the Department

- **Gender:** The Department’s composition largely mirrors that found across other US physics departments and is nowhere near parity (see Table 1).
- **Race and Ethnicity:** The Department is somewhat less diverse than other US physics departments and significantly less so than the nation as a whole (see Table 1).
- **Sexual Orientation:** In our survey of undergraduate students, a significantly larger percentage of our physics majors identified as non-heterosexual than non-majors.
- **Socio-Economic Background:** In our surveys of undergraduate and graduate students, we found that our physics majors are on average from higher income families than our PhD students.

**Table 1:** Composition of the Physics Department and the nation. The numbers in blue represent nationwide statistics (e.g. the most recent data available from the [American Institute of Physics](#) or the [US Census](#)), while those in black are for W&M.

	Majors** Class of 2019	PhD Students	Physics Faculty***	Nation (census.gov 2018)
<b>Female*</b>	36% (21 %)	25% (20 %)	14% (16 %)	51 %
<b>Male</b>	64% (79 %)	75% (80 %)	86% (84 %)	49 %
<b>White</b>	79% (74 %)	57% (87 %)	89% (76 %)	61 %
<b>African-American</b>	0% (3 %)	0% (2 %)	0% (3 %)	13 %
<b>Hispanic/Latino</b>	14% (7 %)	12% (4 %)	0% (4 %)	18 %
<b>Asian ancestry</b>	14% (7 %)	31% (6 %)	11% (15 %)	6 %

\*and non-binary, where known. \*\*some students self-identify as both white/Hispanic, or white/Asian.

\*\*\*tenure or tenure track faculty.

## Diversity Plan

The Physics Department will work towards providing an inclusive environment and improving its diversity through specific action items for its faculty and staff, PhD students, and undergraduate students.

### 1) Faculty & Staff

Responsible faculty: Chair, Chair of Appointments Committee.

#### Faculty:

- **Job ads:** As recommended by the APS topical forum, we will adopt wording in job ads that mirrors best practices in support of diverse recruiting.

**Gender:** We will take the following actions to increase the fraction of female faculty in the Department:

- **Opportunistic hires:** We will pursue possible target of opportunity hires, consistent with our departmental Long Range Plan and available A&S resources.
- **Implicit bias test:** We will require that faculty search committee members take a test for identifying implicit bias, *e.g.*, the Harvard Gender-Science Implicit Association Test (IAT).

**Race and Ethnicity:** Racial diversity is more difficult to address due to the extreme deficit in the faculty candidate pipeline. We will take the following actions to increase the fraction of faculty from underrepresented minorities in the Department:

- **Outreach:** We will seek support from the Administration, consistent with the A&S Action Plan, to subsidize travel for department members who wish to engage in significant diversity outreach at conferences or other events, *e.g.*, the National Society for Black Physicists. We will also explore ways to better coordinate with our Office of Diversity & Inclusion, for example by taking part in their IGNITE-Future Faculty Development Program, if it is offered next year.
- **Diversity training:** We will encourage members of search committees to take part in diversity training, when provided by the university.
- **Opportunistic hires:** We will pursue possible target of opportunity hires, consistent with our departmental Long Range Plan and available A&S resources.
- **Postdoctoral Fellowship:** The Department proposes to incentivize targeted diversity hires at the postdoctoral level via cost sharing with interested grant-funded research groups, if departmental or College funds are available. Three-year postdoc positions might also include the possibility of promotion to the rank of research assistant professor for an additional two years, if funds are available.

#### Staff:

The diversity profile of our staff is comparable to that of the university. As part of our background work to develop this diversity plan, we collaborated with several other departments and the University Ombuds Office to organize staff focus groups. These focus groups were very useful, and we plan to organize another round of focus groups next academic year. (See Action Plan 2020-21.)

## 2) Graduate Students

Responsible faculty: Chair, Director of the Graduate Program.

**Gender:** Our data shows that women tend to leave our PhD program at higher rates than men. The primary leak point appears to be the qualifying exam, which is part of a pattern also seen nationally with gatekeeping exams, such as the GRE. After passing the qualifier, women navigate their research years and graduate with a PhD at rates similar to their male colleagues.

- **PhD qualifier exam:** We will examine whether changes are needed to our qualifying exam, and/or develop targeted mentoring during that critical stage of our students' careers.
- **Implicit bias test:** In order to ensure a fair admissions process to our PhD program, we will require that Graduate Admission Committee members take a test for identifying implicit bias before candidate applications are reviewed, *e.g.*, the Harvard Gender-Science Implicit Association Test (IAT).
- **Outreach:** We will seek support from the Administration, consistent with the A&S Action Plan, to subsidize department members who wish to engage in significant diversity outreach at conferences or other events, *e.g.*, the Conference for Undergraduate Women in Physics (CUWiP).

**Race and ethnicity:** In order to increase the diversity of the graduate students, the Department will undertake the following initiatives:

- **Entrance fellowship:** The Department commits to using at least one of the current three entrance fellowships for diversity recruitment purposes, even in the case that specific diversity fellowship is not provided by the university. Competition for female and minority candidates is fierce since the number of such applicants is small and most physics departments recognize the lack of diversity that our field faces.
- **Outreach:** We will provide strategic coordination and support for department members who wish to engage in significant diversity outreach at conferences or other events, *e.g.*, the National Society for Black Physicists conferences.
- **Diversity training:** The Department will take part in diversity training organized by the university to promote best practices for our searches.

**Climate of graduate program:** In an effort to sustain and improve the climate of our PhD program, we will take the following steps:

- **Surveys:** The Department will periodically survey its graduate students (every two to three years) to gather data on the state of the Department's graduate climate. The most recent student survey was carried out this past year. (See 2019-20 Actions and Results below.)
- **Graduate Ombuds:** The Department will advertise the Graduate Ombuds as a resource for graduate students in resolving workplace related issues.
- **Graduate student socialization:** The Department will support events to provide opportunities for PhD students to socialize with other students (graduate and undergraduate) and faculty.

### 3) Undergraduate Students

Responsible faculty: Chair, Director of Undergraduate Program.

The Department is interested in recruiting local students from a variety of backgrounds (socio-economic, gender, racial and ethnic minorities). While individual faculty participate in **public outreach** in local schools, the Department also organizes an annual open house, “PhysicsFest,” for the local public and the campus.

**Race and ethnicity:** The Department plans the following initiatives to increase the diversity of the undergraduate students enrolled in physics courses and the Physics major:

- **External recruitment:** The Department will be glad to partner in a larger recruitment effort by the university to diversify its undergraduate population, especially those interested in physics. The departments in A&S are not formally involved in the undergraduate admissions and recruitment efforts by the university. We believe that a recruitment effort targeted at local (Hampton Roads and Virginia) underrepresented minorities could significantly diversify the pool of applicants interested in physics. However, such an effort will require an institutional effort by the university (School of Education, Office of Admission, and the Office of Diversity and Inclusion) to partner with local high schools. We remain open to collaborating on such efforts.
- **Campus recruitment:** We will make our current informal relationship with WMSURE more visible and permanent in an effort to recruit underrepresented minorities already at W&M into our Physics major.
- **W&M Noyce Scholars Program:** The Department will collaborate with the School of Education to send interested students for teacher training through the Noyce Scholars program. Teachers trained through this program teach in high-needs schools after graduation and can help recruit future physics students to W&M.

**Climate of undergraduate program:** In an effort to sustain and improve the climate of our undergraduate program, we will take the following steps:

- **Mentoring:** The Department commits to supporting peer mentoring of undergraduate students (majors and non-majors). This mentoring can take the form of undergraduate-undergraduate mentoring (a mentoring club has been started by physics majors) and undergraduate-graduate mentoring (in partnership with the Physics Graduate Student Association).
- **Surveys:** The Department will continue to periodically survey its undergraduate students (majors and non-majors), every two to three years, to gather data on the state of the Department’s undergraduate climate. (See 2019-20 Actions and Results below.)
- **Physics-related clubs and facilities:** We will work with peer-mentoring groups within the Department, as well as with on-campus partners like WMSURE and the Office of Diversity and Inclusion to make sure students know that physics clubs and related facilities (Society of Physics Students, Rocketry Club, Astronomy Club, Robotics Club, Makerspace Center) are open to everyone, not just physics majors.

## 2019-20 Actions and Results

The Department had planned to work on several new projects aimed at improving our diversity, such as a summer research program for underrepresented students, and the development of a targeted graduate recruitment program. But these were deferred because of the external review, and later disruptions caused by the pandemic. We will carry those projects forward and work on them next year.

However, we did successfully carry out our bi-annual climate survey of the students. The Diversity Advisory Committee (DAC) surveyed physics students (non-majors, majors, and graduate students) and they plan to expand the survey next year to include faculty and staff. Overall, the survey results showed that most students find being in the department to be a positive experience. Most of them find the department welcoming, and they feel supported in their work. But there are a few items we believe deserve attention, such as students reporting high levels of stress even before the pandemic hit, and a desire to see more diversity among the faculty. The disruptions of the spring delayed our plans to share these survey results with the wider department, but we plan to do that early next fall.

## 2020-21 Action Plan

In the 2020-21 academic year, the Department plans to undertake the following actions for improving diversity and the departmental climate:

### 1. **IGNITE-Future Faculty Program:**

This new university program is run by our Office of Diversity & Inclusion. It aims to bring young scholars from underrepresented groups to campus, with the long-term aim of recruiting new faculty in research areas aligned with university priorities. We commit to reaching out to the OD&I next year to see if it will be possible to bring physics post-docs or ABD students to campus as part of the program.

### 2. **Student involvement in faculty hiring:**

Our department has not traditionally involved students in any formal way in the faculty hiring process. We know that there are good reasons to consider doing so as a means to promote faculty diversity. Given that hiring is frozen for now, this is a good time to commit to starting a faculty discussion about this possible change in department practice.

### 3. **Summer research program**

The Department will plan the launch of the undergraduate summer research program for underrepresented minorities. (Carried over from 2019-20.)

### 4. **Targeted recruitment of graduate students**

The Department will look to recruit future graduate students with targeted talks at the Society of Physics Students (SPS) chapters of local colleges and universities, *e.g.*, institutions with large underrepresented minorities. (Carried over from 2019-20.)

### 5. **Expanded departmental climate surveys**

We will share the results of this year's student surveys with the department. There were several actions recommended by the DAC in light of this year's surveys, and an important focus of next year's work for the committee will be to implement those recommendations. In addition, we will expand the survey to include faculty, and work with the University Ombuds Office to organize focus groups for staff.

### 6. **Colloquium Speakers**

As recommended by the recent External Review, the DAC will host several experts for departmental colloquia who can speak to best practices in promoting diversity and inclusion in physics.