

The Physics EDI Initiative

May 2022 Update

The Princeton University Department of Physics is committed to supporting diversity and inclusivity within our own community and to creating an environment where everyone, regardless of their identity, feels valued, safe, and empowered to be successful. Following a town hall event on June 10, 2020, the department created the Equity, Diversity, and Inclusion (EDI) Initiative with the purpose of implementing immediate concrete actions and improvements towards attaining these goals. The initiative consists of an Advisory Board, as well as several working groups tasked with creating programs and implementing concrete steps that support and address the needs of marginalized members of the physics community. The EDI activities are fully supported as an integral part of the department, and are complemented by policy changes and steps that will ensure that the contributions of the working groups lead to permanent improvements. This document gives an overview of department policies and EDI activities that have taken place over the past two years.

Organization of the Physics EDI Initiative

The EDI Initiative consists of working groups, each with a designated coordinator. The working groups have evolved since the start of the effort. This year, the groups were tasked with developing concrete initiatives in the following areas:

- Undergraduate matters
- Graduate matters
- Postdoc matters
- Broader outreach
- Communications and Events

The working groups identify new initiatives, organize activities and can make recommendations about improvements in department policies. These working groups resemble the Departmental Action Teams that have been shown to produce effective change in STEM departments.¹ The activities of the working groups are supervised by the EDI Advisory Board, which is represented by at least one member from each group in the department (faculty, staff, postdocs, graduate and undergraduate students). The current EDI faculty coordinator is Prof. Mariangela Lisanti. The American Physical Society, American Association of Physics Teachers, and the American Association for the Advancement of Science each have initiatives that provide guidelines for best practices for EDI work. Members of the Advisory Board, as well as the department at large, are engaged in these efforts, and the work of the EDI Initiative is informed by these recommendations.

¹ Quan, G. *et al.*, “Designing for institutional transformation: Six principles for department-level interventions,” PRPER **15**, 010141 (2019).

The working groups and Advisory Board each have regular meetings, and come together periodically for “All Hands” meetings. When appropriate, the Initiative also schedules Town Halls with the broader departmental community to solicit feedback and recommendations.

The following describes the many successful activities of the EDI Initiative over the last two years, and concludes with a reflection on upcoming goals and challenges that lie ahead.

Department-Wide Initiatives

- With the help of the Provost’s Office, we developed and ran a department-wide **survey** in Spring 2021, which was followed by dedicated **focus groups** in Fall 2021. Many of the new initiatives implemented this academic year were informed by the feedback received from this process. We plan to run a survey every two years, with the next one planned for Fall 2022.
- The physics department’s [Code of Conduct](#) was updated in Fall 2021. This work was informed by the Advisory Board’s participation in an [AdvanceGEO](#) workshop on the topic. A new Code of Conduct committee, consisting of faculty and one junior representative, has been established to review reports of potential violations. We have also improved advertising of reporting procedures through signage around Jadwin and semesterly email announcements. We will continue evaluating the effectiveness of these procedures moving forward and adjust where necessary.
- In collaboration with the Astrophysics Department, we have been organizing a well-attended **EDI Seminar Series** that features 2-4 speakers per year. Talks to date have detailed current research on improving representation of URMs in physics, as well as examples of successful programs at other institutions.
- Department-wide **workshops** on fostering inclusion were organized for Spring 2022 and held separately for the undergraduates, graduates, postdocs, staff, and faculty. The [workshops](#) were led by members of the Provost’s Office. All departmental members were strongly encouraged to attend, but attendance was an issue at all levels. Moving forward, we plan to offer at least one such workshop (on rotating topics) per semester and will revisit methods of improving participation.
- The department offered a **mental health workshop** in Fall 2021, which was led by a representative from Counseling and Psychological Services. Moving forward, we plan to offer this workshop once per academic year.
- We have created a new outreach program called “**Zoom a Princeton Physicist**” (ZaPP). In the past year, departmental members have reached out to 13 high school classes/clubs in New Jersey to discuss what life is like as a physicist.
- We have collaborated with the STEM-to-Civics Charter School (**STEMCivics**), a public high school in Ewing, NJ. This year, physics department members hosted four students from STEMCivics through a meet-n-greet, which led to three of these students applying to Princeton’s summer Laboratory Learning Program.

- We have created an EDI Initiative [webpage](#) and helped to draft the **Statement of Solidarity and Commitment to Action**, which was posted on the department's webpage in Summer 2020. We actively promote EDI events on **social media** and include a summary of our activities in the end-of-year **departmental newsletter**.
- We have implemented **EDI Awards** to recognize the efforts of students, staff, researchers and faculty who have been exceptionally dedicated to improving diversity and equity in the department. As we typically receive more nominations than awards that can be offered, we post all the nomination letters by the main departmental offices in Jadwin so that we can still publicly celebrate everyone's contributions.
- We have updated the **iconography** in Jadwin to better spotlight the contributions of URM's in physics, with a particular focus on reimagining the spaces most frequently used by the undergraduates.
- Postdoctoral and faculty **job applications** now suggest that applicants comment on their "specific plans and goals for advancing equity and inclusion if hired."
- We have created a virtual "**Comment Box**" on the department website for anonymous feedback from students, faculty, or staff. The Comment Box is regularly monitored by the EDI Advisory Board.
- A new position has been created for an **Outreach, Events, and Communications Manager**, who will help coordinate and run EDI initiatives in the physics department. Our goal is to hire someone into this role for the start of the 2022-2023 academic year.

Undergraduate Initiatives

- In conjunction with TiCuP (formerly, UWIP) and PSPS, we have implemented a new [Princeton Physics Mentorship \(PPM\)](#) program. As part of this program, undergraduate mentees and graduate mentors are matched based on their interests and funding is provided for shared meals. This program has been very successful, with 106 (82) participants in Fall 2021 (Spring 2022). In evaluating the program for next year, we would like to better understand the drop in participation that occurred in the spring semester.
- For the last two academic years, we have run an **Undergraduate Tutoring Program**, which supports a network of senior-level undergraduate students to serve as peer tutors. This program fills an important gap, covering both freshman-level and more advanced courses where tutoring support is not available from the University's McGraw Center. This program has been hugely popular and is typically limited by the number of tutors that can be recruited.
- We have revamped the department's **Summer Research Program**, with the aim of facilitating connections between students and faculty. While in the past students were tasked with reaching out to faculty members on their own to find summer research opportunities, this new program allows students to apply online to be paired with faculty members with open positions. In Summer 2021, the

program was oversubscribed, with 54 applications received for 35 available positions. We were unfortunately not able to continue the program for Summer 2022 (see challenges section below).

- We have organized an **Undergraduate Talk Series** where graduate students and postdocs give informal research presentations to undergraduates. This series started last summer as part of the department's summer research program and has continued through the academic year.
- We have developed a standardized department-wide **mid-semester feedback form** that is sent out to all students enrolled in undergraduate physics courses. The results of the form are collated centrally and reported back to course instructors. This procedure provides a mechanism for course instructors to respond to student feedback before the end of the semester, and for the department to identify and follow-up with AIs whose performance is substandard.
- A **standardized syllabus addendum** has been created that summarizes undergraduate student resources as well as the departmental code of conduct. This addendum will now be automatically posted to all course websites each semester. Moreover, we have a departmental faculty representative speak to every 100/200 level class at the start of the semester to highlight the material on this addendum.
- In Spring 2022, the department hired a student who chairs the Mental Health Initiative and was trained in active listening to serve as a "**physics peer listener**". In this role, the student served as a peer-to-peer resource for undergraduate physics students seeking out guidance.
- The department has restructured the **course curriculum for 100/200 level courses** to provide multiple on-ramps to the major for students with varying backgrounds in physics. These changes will be implemented for the 2022-2023 academic year.

Graduate Initiatives

- We have developed and run the very successful **Ambassadors Program**. As part of this program, Princeton graduate students host webinars on the graduate application process with undergraduate students at universities across the country (with a focus on minority-serving institutions).
- We have developed and run the **P4 Program**, a two-day workshop that is aimed at promising URM sophomores in physics from institutions across the country. The workshop introduces students to current research areas, describes what life as a graduate student entails, and also provides advice on the graduate application process. As part of this year's virtual P4 program, the number of students indicating that they would apply to graduate school increased by 70% from the start to the end of the workshop based on entry/exit surveys. We gave a presentation on the P4 program at this year's APS April Meeting. We would like to host this program in-person next year, but this will require external funding.
- Based on the survey and focus group results, we recommended that all graduate students in years 3+ be required to meet yearly with their **pre-thesis committee**. This would provide an opportunity for

students to build relationships with their committee, solicit feedback on their research, and discuss other concerns. This requirement will be implemented starting in the 2022-2023 academic year.

- We have developed **Individual Development Plan (IDP)** forms that all graduate students will be required to discuss with their advisor (or other departmental mentor) and to submit as part of the re-enrollment process each year. The IDPs will provide students with an opportunity to assess their research progress, skill development, and career goals on a yearly basis. This new procedure will be implemented next academic year.
- Each year, we organize student and faculty representation at physics **affinity conferences**, including the NSBP and SACNAS conferences, the Ivy+ Puerto Rico Recruiting Fair, and other relevant meetings.
- We helped to rewrite the [graduate admissions page](#) on the departmental website to make the requirements and procedures clearer for interested applicants.
- In the 2020-2021 academic year, we included a graduate student representative on the **Graduate Admissions Committee**. We were not able to recruit an interested student this year; providing payment for the (significant) time commitment may help with recruitment in future years.
- We ran a **Graduate Curriculum Survey** in Spring 2021, and the feedback received resulted in some changes to the graduate course offerings for next academic year.
- We have run several **social events** for graduate students to help build a sense of community.

Postdoc Initiatives

- In collaboration with other physics-adjacent departments and institutes across campus, we have established a new **Future Faculty in the Physical Sciences (FFPS) Fellowship**. The FFPS fellows are selected for their excellence in research as well as their promise---either through their own unique background or through demonstrated commitment---to improving the representation of under-represented groups in the physical sciences. The interdisciplinary nature of the fellowship provides additional avenues for recruiting exciting candidates to Princeton.
- In Spring 2022, we organized a **Faculty Job Panel** for postdocs in the department to learn more about the application and recruitment process. We anticipate this being a yearly event.
- We have developed **Individual Development Plan (IDP)** forms for postdocs. Postdocs will now be required to meet with their advisor before their yearly reappointment to discuss their IDPs.
- We are developing **Postdoc Welcome Packets** that will be given to new postdocs when they arrive, which will provide helpful advice for integrating in the department.

Goals and Challenges

- The revamped Summer Research Program was highly successful in Summer 2021, but we were not able to continue it this year. In planning for the program, we faced challenges with low faculty participation and a rapidly changing landscape of University rules concerning undergraduate summer research. We will want to revisit this in the 2022-2023 academic year and hopefully restart the program.
- We plan to revisit the advising structure for undergraduate students in the department, which currently focuses primarily on course selection. We would like to develop a framework that makes students more comfortable reporting potential Code of Conduct violations, discussing problems with microaggressions in classes, and providing constructive feedback on junior paper/senior thesis advising.
- Burn-out has become a significant challenge as the EDI Initiative completes its second year. Many of the most successful initiatives undertaken have fallen on the leadership, dedication, and effort of a small number of undergraduate and graduate students. Some will be graduating and others are ready to rotate off. Moreover, we need to be sensitive to the fact that women/URM students have been over-represented in departmental service work, especially with regards to EDI activities. Moving forward, we will need to find creative ways to support students who are willing to dedicate their time to EDI-related activities.
- Several of the initiatives implemented require considerable administrative overhead. Of particular note are the Princeton Physics Mentoring program, the Undergraduate Tutoring Program, the Undergraduate Summer Research program, and the P4 workshop. To date, this workload has been shouldered primarily by student and staff volunteers in the working groups, but this is not sustainable long-term. We hope to address this challenge with the creation of the Outreach, Events, and Communications Manager position.
- In the next two to four years, a number of staff will retire. While this presents an opportunity to review efficiencies within our organizational structure, it will also present significant challenges due to the responsibilities they manage and institutional knowledge that we may lose. Our hope is to continue cross-training where possible and to document certain procedures as we prepare for transitions.
- We will work to improve mentorship of junior faculty in the department, such as by assigning a formal faculty mentor to each and organizing informal faculty social events.
- Noting that cluster hiring has been shown to be an effective tool in diversifying representation,² we will discuss ways of streamlining interdisciplinary hires across departments, including Astrophysics,

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<https://www.insidehighered.com/news/2015/05/01/new-report-says-cluster-hiring-can-lead-increased-faculty-diversity>

Geosciences, and the Lewis-Sigler Institute. This will also include consideration of how to more equitably divide a joint faculty member's responsibilities across two departments.

- We hope to leverage our television screens on each floor to acknowledge the contributions for one's efforts with an event or large project. Also, encouraging others to thank a staff member who coordinated their seminar/event.