

# Equity, Diversity, and Inclusion Strategic Plan

Department of Physics  
UC San Diego, Spring 2021

## Abstract

This report is in response to the call from the Division of Physical Sciences (DPS) asking that each department create an Equity, Diversity, and Inclusion (EDI) strategic plan. As requested, this document provides data to address EDI issues in the UCSD physics department (these data are summarized in the body of the report, with more detail given in appendices), describes recent progress and ongoing activities to address EDI concerns, and suggests additional steps which should be considered. The plan specifically addresses the suggestions made by the APS Committee on the Status of Women (CSWP) visiting committee in 2018, summarizing the progress made in addressing the concerns raised and identifying additional steps to be considered. A summary of potential next steps, including suggestions for the newly formed departmental climate committee, are given at the end of the report. As envisioned by the DPS request, this report is meant to be a living document that the physics department can continue to use to document EDI data on an ongoing basis, guide future activities, and document continuing progress.

## I. Introduction

The commitment of the University of California system to supporting diversity and equal opportunity in its education, services, and administration, as well as research and creative activity, is codified in [Regents Policy 440](#). This policy commits the university system to making sure that the University of California is “open to qualified students from all groups”, and defines diversity to include differences in “race, ethnicity, gender, age, religion, language, abilities/disabilities, sexual orientation, gender identity, socioeconomic status, and geographic region, and more.” It further affirms that “diversity should also be integral to the University’s achievement of excellence.” The UC San Diego [Principles of Community](#) states that our campus values cultural diversity, “adapts responsibly to cultural differences among the faculty, staff, students, and community” and acknowledges that “our society carries historical and divisive biases based on race, ethnicity, sex, gender identity, age, disability, sexual orientation, religion, and political beliefs.” Finally, the UCSD Division of Physical Sciences (DPS) diversity [website](#) states that “Inclusive excellence is a visible core value in the Division of Physical Sciences, where we have been undertaking efforts on multiple levels to increase access and support for people from underrepresented groups, including women, underrepresented

minorities, LGBTQ, first-generation college, differently abled people, and people from underprivileged backgrounds.”

It is sometimes supposed that considerations of equity, diversity, and inclusion have no place in physics. Perhaps most famously, during oral argument in the 2015 Supreme Court case on affirmative action, [Fisher v. Texas](#), Chief Justice John Roberts asked “[What unique perspective does a minority student bring to a physics class?](#)”, with the clear implication that physics (and by extension all STEM subjects) are ruled by objective criteria in which affirmative action (at issue in that case) in particular and equity, diversity, and inclusion issues more generally, need play no role. We concur, however, with the [statement from the Committee on Diversity in Physics of the American Association of Physics Teachers](#) (AAPT) which argues that racism and sexism exist in physics and physics education, that the homogeneity of representation in physics is the byproduct of racism and sexism, and that making physics more inclusive and supportive of women and people of color is required both for doing excellent physics and fulfilling our role as a physics department in the UC system. As the AAPT emphasized, “Diverse perspectives benefit physics by informing not just research and teaching practices, but also the ways that researchers, teachers, and students interact with, collaborate with, and support each other.”

The killings of George Floyd, Breonna Taylor, Ahmaud Arbery, Sean Reed, and Tony McDade (many at the hands of the police) during the spring of 2020<sup>1</sup> have served to highlight the long history of systemic racism in our country. In light of these hateful events, it is especially important that our institution (see [Chancellor’s statement](#)), including our physics department, works to ensure that students, faculty, and staff from all backgrounds are welcome and able to succeed at UC San Diego. It is our hope that the strategic plan summarized in this document will lead to concrete steps in this direction.

In this document, we consider the current status of equity, diversity, and inclusion (EDI) efforts in the UCSD Physics Department, including a summary of recent activities and a description of future plans. This document is in response to a [call from the UCSD Division of Physical Sciences](#) requesting that all divisional departments create an EDI Strategic Plan and is meant to serve as a living document to assist the department and the division in continuing efforts to improve the climate for all students, faculty, and staff, and to increase the access and support for people from underrepresented groups.<sup>2</sup>

As input to this report, we have considered the external reviews of the physics department from the APS Committee on the Status of Women (CSWP, 2018) and the most recent Undergraduate (2018) and Graduate (2020) Program Reviews. The recommendations of the APS/CSWP site visit committee, in particular, are extensive and are addressed specifically below. We note here

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<sup>1</sup> The rate at which black and hispanic americans are shot and killed by police far exceeds the rate for white americans. See

<sup>2</sup> We note that this document does not include a comprehensive review of departmental outreach activities. In the future, in coordination with the Departmental Outreach Committee, these could be added as well to give a more complete picture.

that all of these reviews suggested that the department engage more broadly in the issues of equity, diversity, and inclusion. In their summary letter of July 2018, for example, the UCSD Undergraduate Council noted:

“The Council recommends appointing an undergraduate committee (of both male and female faculty) to examine the issue of diversity within the Department. This committee could be charged with planning and implementing diversity initiatives to attract and retain female undergraduate majors.”

Similarly, the External Graduate Program Review Committee (ERC) noted that some aspects of departmental climate appear to be positive, but further stated that

“However, there are still significant problems, especially regarding the climate for women and under-represented minorities. The composition of the graduate student body is glaringly unbalanced by gender: 28 female vs. 145 male. Among first-year students, 2 out of 25 identify as female. The ERC were also informed that there have been occasional remarks made by a few faculty disparaging women and URM (e.g., that female scientists do not work as hard as male scientists do). Such statements are completely unacceptable, and point to a lack of engagement by departmental leadership on these issues.”

The ERC went on to suggest the formation of a “Climate Committee” to devise and implement solutions to climate problems - a committee the department has formed this year and which is addressed in this report.

In an appendix to this report, we also include a list of recommendations on addressing equity, diversity, and inclusion received by the department from concerned Graduate Students.

The EDI strategic plan reported here was drafted by the Physics Department EDI Committee during the Summer of 2020. After an initial draft was completed, input was sought from Departmental Administration (Chair, Associate Chairs, MSO) relevant Committee chairs (Grad and Undergrad CEP, Outreach, Space, Admissions, PHYS 1, 2, and 4, and the Climate Committee), Student Affairs staff, and the DPS Associate Dean for EDI prior to completion and submission to the Chair for transmission to the Division.

In [section II](#), we report on the Departmental EDI Statement approved during the Winter 2020 quarter. Subsequently, in [section III](#) we provide data addressing the current status of the department with respect to diversity. In [section IV](#) we summarize the recommendations of the APS CSWP committee, the steps the department has already taken towards those recommendations, and discuss some of the suggested next steps for the coming years. [Section V](#) reports the results of our initial EDI departmental survey and suggestions on coordination with the departmental Outreach committee. [Section VI](#) gives our recommendations for additional steps the department can take to improve the climate for all students, faculty, and staff.

## II. Departmental EDI Statement

Recommendation 1 of the report following the 2018 American Physical Society joint CSWP (Committee on the Status of Women in Physics) and COM (Committee on the Status of Minorities in Physics) climate site visit was: “The Department Chair should sponsor a departmental discussion on core institutional values including respect, fairness, quality, diversity, and inclusion, moderated by the Department’s diversity committee.” In response, the EDI committee drafted a Departmental EDI Statement. The initial draft statement was discussed by the faculty at the end of the fall quarter of 2019 and, after a poll on two potential versions, this statement was adopted:

*The UC San Diego Physics Department believes that the progress of science and the University’s educational goals are enriched when faculty, staff, and students from diverse personal, social, and academic backgrounds are able to fully participate in the life of the Department. To this end, and consistent with the campus Principles of Community, our Department is committed to treating all current and prospective students, faculty, and staff equitably, with kindness, dignity, and respect, and to creating and maintaining an environment which is welcoming and supportive of all.*

Adopted, January 2020

The statement will serve as an anchor for the Physics EDI and Outreach webpages, and is being used to inform continued work by departmental committees.

### III. Departmental Diversity Data

One important aspect of a continuing departmental EDI program is to collect and track data which quantifies the diversity of departmental programs with respect to campus and national norms, and to follow these data over time. An initial collection of departmental diversity data is described below (details can be found in the appendices). As this report is updated and revised, additional data and analyses can be added.

#### Faculty Diversity

- A “snapshot” from spring 2020 of the number and distribution of women tenure-stream faculty in the UCSD department show that its composition (16%) is similar to physics departments nationally (19%)<sup>3</sup> and to other departments in the UCSD Division of Physical Sciences (Math = 11%, Chemistry = 22%),<sup>4</sup> but less than the campus as a whole (29%).<sup>5</sup> Only 7.7% of Professor rank faculty are women, while 33% of Assistant Professors are women. It is notable that the department increased the number of women faculty by 4 from 2014 to 2019 (growing from 6 to 10) *while hiring 7 women during that period*. By comparison, the number of men in the department grew by 11 while hiring 16 men during the same period. Therefore, in light of the relatively small proportion of women faculty in the department, in addition to continuing to hire women as searches allow, the retention of women faculty should be a priority.<sup>6</sup>
- Overall, the proportion and representation of faculty from under-represented groups<sup>7</sup> in the UCSD physics department (11%) is considerably higher than for physics departments nationally (4.8%)<sup>8</sup> and the departments in the UCSD Division of Physical Sciences (5.7%), and also higher than the representation on campus as a whole (8.3%).<sup>9</sup> Again, there is a lower fraction of underrepresented faculty at the Professor rank (8%)

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<sup>3</sup> Data from 2018 drawn from “Women Among Physics and Astronomy Faculty: Results from the 2018 Academic Workforce Survey” AIP Statistical Research Center, December 2019  
<https://www.aip.org/statistics/reports/women-among-physics-and-astronomy-faculty>

<sup>4</sup> Data from 2016 drawn from the UCSD Division of Physical Sciences Task Force on the Status of Academic Women in the Division of Physical Sciences  
[https://physicalsciences.ucsd.edu/\\_files/FinalTFPresentationPostMay2Meeting.pdf](https://physicalsciences.ucsd.edu/_files/FinalTFPresentationPostMay2Meeting.pdf)

<sup>5</sup> Data from 2019 drawn from the UCSD Accountability Academic Personnel Diversity Dashboard:  
<https://diversity.ucsd.edu/accountability/academic-personnel.html>

<sup>6</sup> The data collected do not allow for an analysis of departures, and the numbers overall include retirements. Given the climate issues raised in the APS CSWP site visit and the DPS Climate Survey, a review and analysis of the departures and a program to enhance retention of faculty should be considered.

<sup>7</sup> We use the National Science Foundation definition for underrepresented groups in STEM to include African Americans, Chicana/Latina Americans, Pacific Islanders, and Indigenous people.

<sup>8</sup> Data for 2016 drawn from “Number of African-American and Hispanic Physics Faculty Members by Highest Degree Offered by Department, 2004 to 2016” AIP Statistical Research Center, December 2019  
<https://www.aip.org/statistics/data-graphics/number-african-american-and-hispanic-physics-faculty-members-highest-degree>

<sup>9</sup> Data from 2019 drawn from the UCSD Accountability Academic Personnel Diversity Dashboard:  
<https://diversity.ucsd.edu/accountability/academic-personnel.html>

then the Assistant Professor rank (22%). While the representation of Chicanx/Latinx physics faculty in particular exceeds that of many departments on campus, there are currently no (and to our knowledge never have been) faculty in physics who self-identify as Indigenous/Alaska Native, Black/African-American, or Pacific Islander.

### Graduate Student Admissions

- From 2010-2019, the applicant pool for the Physics graduate program has had slightly less representation of women (17%) than national PhD programs (20-22%).<sup>10</sup> The admit rate for women (20%) is on par with men, but the acceptance rate is lower (20% versus 27%), resulting in less gender diverse graduate class (16%) than comparable PhD programs. The fraction of women applicants, admits, and accepts varies considerably between groups.
- Applications from underrepresented groups (8.7%) is at a considerably higher rate than national Physics PhD production ( $\approx 4\%$ ), but the lower admit rate (14%) and acceptance rate (15%) compared to other groups results in a yield that has comparable representation to Physics departments across the nation (although that representation remains a factor of 7 below the general US population). There is less variance in applicants, admits, and accepts among underrepresented groups between research areas.
- We note that historically many (if not most) women and underrepresented students are selected in a “second pass”, often following considerable advocacy and negotiation.

### *Graduate Progression to Candidacy by Gender*

The qualification procedure in effect until 2018 had clear gender biases in terms of outcomes. Between 2010-2017, 17% of men versus 5.3% of women passed on their “first shot”, a higher fraction of men (53%) than women (40%) passed on their first qualification attempt, while a higher fraction of women (32%) than men (22%) passed on their second attempt. There were also higher fractions of women graduate students leaving the program either with (16%) or without (5.3%) a terminal Master’s degree as compared to men (10% and 3.7%). Overall, 21% of incoming women graduate students did not progress to a PhD as compared to 14% of men. We also note a significant decrease in the percentage of students who passed the qualifying exam (75% to 53%) and increase in the percentage of students who failed to progress to a PhD (7% to 25%) between 2010-2013 and 2014-2017, with women again having worse outcomes on both measures (43% and 29%).

Since the new qualifying procedure has come into force, the rate of progress for men and women has dramatically converged. For students in the 2018 and 2019 entering classes who chose to follow the current course qualification requirements, roughly equal fractions of male (41%) and female (43%) students completed their qualification in the first year, and at this stage no students have failed. We are hopeful that the transition away from high-stakes examination for qualification will maintain this balance in gender outcomes, but should continue to be

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<sup>10</sup> Data through 2019 drawn from “First-Year Graduate Students in Physics and Astronomy: Characteristics and Background: Results from the 2014–15 and 2015–16 Graduate Student Surveys and the annual Enrollment and Degrees Surveys”, AIP Statistical Research Center, November 2019 <https://www.aip.org/statistics/reports/first-year-graduate-students-physics-and-astronomy-characteristics-and-background>

monitored. It is also essential to evaluate degree progression outcomes for other underrepresented groups under the current qualification schemes, and post-qualification progress to degree.

### Graduate Student Population and Awards by Gender

In Spring 2020

- 162 Graduate Students, 25 Female (15%)
- 7 Graduate Award Nominations, 1 Female (14%)
- 3 Graduate Awards, 0 Female (0%)

Representation by gender in graduate awards in 2020 was, with limited statistics, comparable to overall representation in the graduate student population. Additionally, in the [last two years](#) women constituted roughly *half* of all graduate student award nominations.

### Undergraduate Retention and Graduation

- The fraction of women 1<sup>st</sup>-year physics students at UCSD is comparable to the numbers nationwide, while the fraction of URM and 1<sup>st</sup>-generation students is slightly higher than those nationwide. Furthermore, the retention and graduation rates for 1<sup>st</sup> year entering students are comparable across gender, and by URM and 1<sup>st</sup> generation status – and the 5-year graduation rate is approaching 80%.
- The situation for transfer students is substantially different however: the fraction of women students is similar to that for 1<sup>st</sup>-year students, but the fraction of URM and 1<sup>st</sup>-generation students is substantially higher. The transfer graduation-rate (in physics) is substantially lower, however, and remains only between 50%-60% (4-year – after transfer matriculation at UCSD – rate).

### *Undergraduate Majors, PHYS 199, and Departmental Awards by Gender in Winter 2020*

- 335 Total Majors, 60 Female (17%)
- 36 Students in PHYS 199, 5 Female (14%)
- 12 Departmental Award Nominations, 3 Female (25%)
- 11 Departmental Awards, 2 Female (18%)

Representation by gender in PHYS 199, award nominations, and awards in 2020 is comparable to overall representation in the undergraduate major. Historical data is available on Departmental Awards and over the last two years (2017-18 & 2018-19), for example, roughly a third of departmental nominations and awards were made to women.

## IV. Departmental Inclusion Information

The American Physical Society (APS) conducted a site visit on April 9-10, 2018 to assess the climate for women and minorities in the Department. They noted some positive trends and attributes of the Department, including recent hiring and a commitment to improving inclusivity among some faculty and leadership in the Division, as well as the vibrant ‘women in physics’ groups among undergraduates and graduates. Their recommendations for the Department

moving forward are compiled into a table in [Appendix 7](#). Selected key points are summarized here.

The APS site visit report included several recommendations that have already been fully implemented by the department. These accomplished items include publishing explicit committee charges for all departmental committees, the creation of separate committees for Diversity and Outreach, establishing clear guidelines and implementing bias training for search committees, and reforming the qualifying exam process and regularizing the first year graduate course curriculum. In regard to excellence searches, there is now a well-defined process outlined by the Dean's office for when such searches resume in the coming years.

In addition, a number of actions recommended by the site visit committee have been initiated and are currently underway. These partially-completed items include regularizing the schedule and procedures for faculty meetings, initiating departmental discussions on core institutional values surrounding issues of climate, equity, and diversity, ensuring diverse representation on key departmental committees, and providing dedicated space and support of activities for women in physics groups. Other recommendations that are currently in the process of being met include implementing bias training and written procedures for admission committee members, and providing support for bridging academic gaps in incoming graduate students. As part of an effort to address the recommendation to more proactively provide students with resources related to research opportunities, a novel element has recently been introduced into the undergraduate curriculum that involves students reaching out to departmental faculty of their choosing to discuss that faculty member's published research.

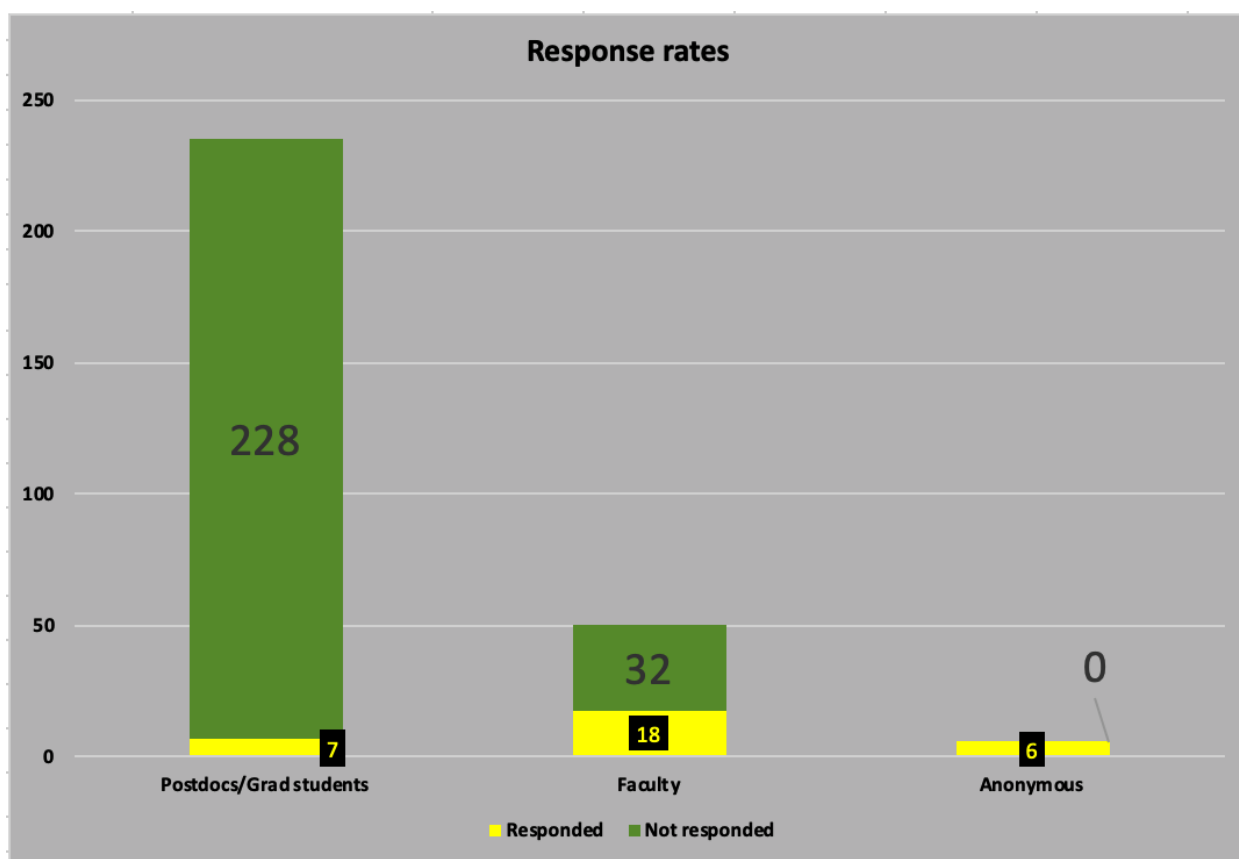
Looking forward, the following committee recommendations still need to be addressed. The department chair should increase transparency in departmental decision making processes, and re-initiate regular listening sessions with women in all departmental roles. In addition, the department should address the future role of the Physics GRE in admission decisions.



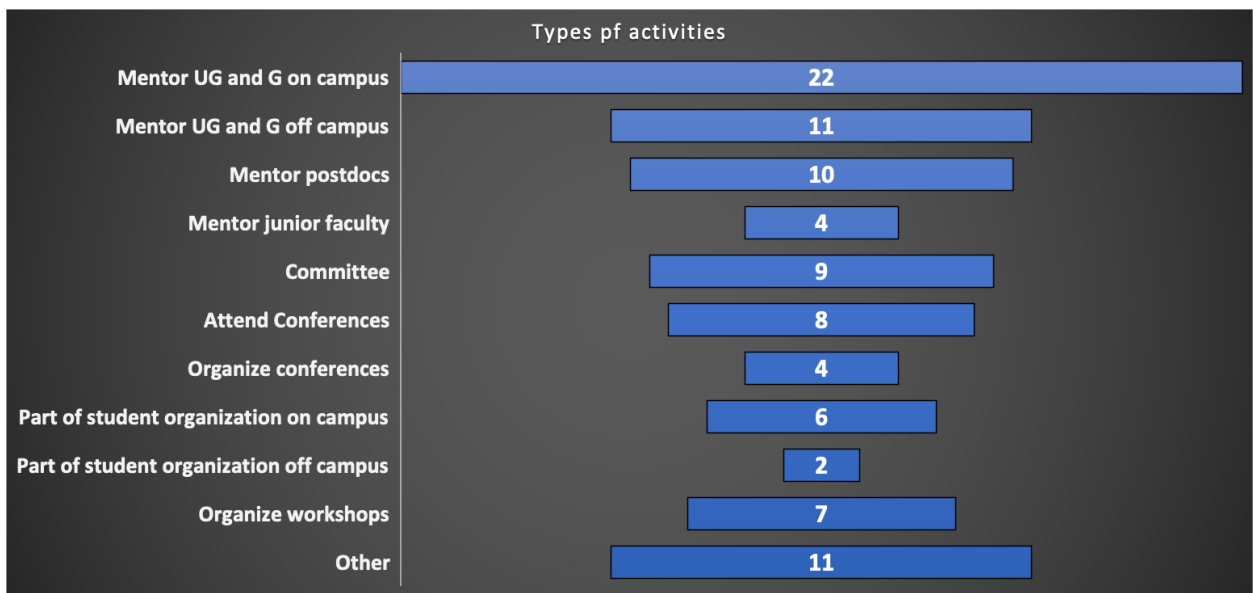
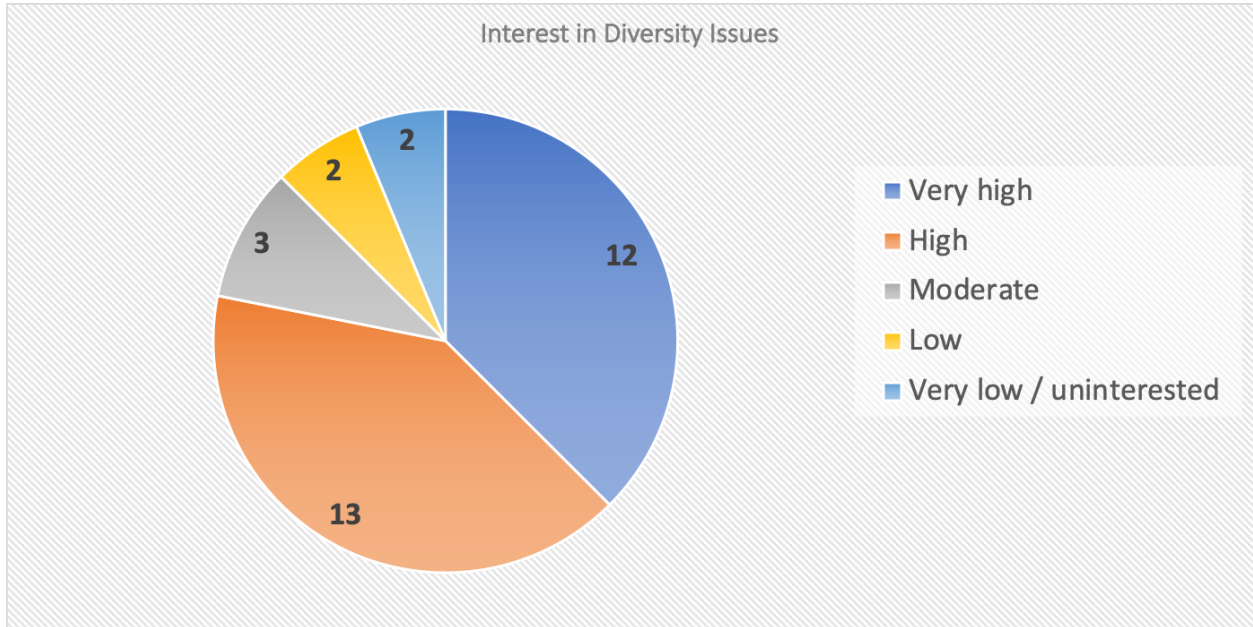
## V. Departmental Interests in EDI

### Departmental EDI Survey

In March 2020, the EDI and Outreach conducted a survey across the Physics department to assess the level of interest in Diversity and Outreach issues and activities. We received 31 responses out of 291 department personnel: 18 faculty, 6 anonymous, 7 students/postdocs. The very low turnout (11%) may have been due to miscommunication of the survey link, particularly to the graduate students. The results we obtained are summarized below.



Below we summarize the interest levels across the respondents.



In essence, the survey revealed a strong enthusiasm to address EDI issues from a subset of the graduate students, postdocs, and faculty. We should capitalize on the interest that exists by organizing and announcing new activities, documenting these efforts consistently over time, and continuing to solicit further departmental participation in equity, diversity and inclusion efforts. This survey should also be repeated to capture a larger proportion of the department, and a better process put in place for emailing surveys to various department groups (e.g., have graduate student emails sent from PGC or EDI graduate representatives).

## Coordination with the Outreach Committee

To improve representation within our student body, specifically within the undergraduate student applicant pool, we will encourage outreach efforts with the Outreach Committee that will target high school students and areas of the San Diego community that are targets of opportunities for recruiting underrepresented students. Examples of these activities include:

- Visiting primary and secondary schools in communities of lower socioeconomic conditions, which are likely to be communities of color, and organizing science-fair-like events which may inspire students to consider careers in physics. Importantly, the faculty/students who visit these places will ideally (but not necessarily) be people of similar ethnic background so students can identify with them.
- Organize events on campus for female high school students, showcasing our diverse faculty and student pool as best as possible.
- Organize events with other minoritized groups; e.g., indigenous populations, transamerican groups, etc.

## VI. Policy and Programmatic Recommendations

The committee discussed a wide range of ideas and initiatives to advance Equity, Diversity, and Inclusion in the UC San Diego Physics Department. A complete list is included in [Appendix VII](#). After consultation with the Chair and MSO, the committee was asked to provide a list of high-priority items/issues that should be addressed as soon as possible, which we provide below.

- **Departmental Process and Procedures:** Policies and procedures in the Physics Department are generally unwritten and communication about departmental issues is inconsistent. The lack of clear policies and communication has the effect of disenfranchising junior faculty members, staff, and students, and preventing the participation of a diverse cohort of members. Concrete steps to address departmental transparency are needed, and we make the following recommendations.
  - **Departmental Meetings:** Regular departmental faculty meetings are an essential forum for communication and have been lacking this year ('20-'21) in our department. With the anticipated return to campus and in-person meetings this fall, it is essential that regular department meetings resume and that they be structured to enhance transparency. The department should establish an agreed upon schedule for general departmental meetings, including clearly communicating meeting agendas and related information sufficiently far in advance for appropriate consideration of important issues. In addition,

departmental committees should be given the opportunity to report at a faculty meeting at least quarterly.

- **Departmental Bylaws:** Establish a comprehensive set of written bylaws governing processes and procedures which facilitate transparent departmental operations and provide for equitable input from all members. The process of formulating bylaws need not be onerous if we learn from existing and functional models on our campus and at peer institutions, and adapt them to our needs.
- **Departmental Inclusion:** Complement general faculty meetings with regularly scheduled meetings for junior faculty, women faculty, and students, with appropriate administrators and senior faculty, and institute mechanisms to address any concerns raised at these meetings.
- **Graduate Program:** Our department can make a significant contribution to EDI issues in the fields of physics and astronomy by taking steps to increase the diversity of representation of our graduate program. We make the following recommendations.
  - **Graduate Admissions:** Our current graduate admissions processes do not incorporate the best -practices advocated nationwide, such as the development of an admissions rubric which enables a rigorous, consistent, and balanced evaluation of all facets of application files. We recommend that the department critically evaluate graduate admissions processes in light of lessons learned from participation in the C-CIDE project, evaluating admissions outcomes, particularly for women and minorities, and make a multi-year commitment (by, for example, appointing an admissions chair to a multi-year term) to implement changes to ensure equitable consideration of all applicants. In particular, we recommend that the incoming Graduate Admission Committee create a rubric following recommendations from C-CIDE<sup>11</sup> and removing the requirement of the GRE and Physics Subject GRE<sup>12</sup> , which have been shown to limit access to underrepresented groups and fail to predict doctoral completion<sup>13</sup>.
  - **Recruiting a Diverse Cohort of Graduate Students:** In addition to modifying departmental admissions procedures to equitably evaluate applicants, it is essential to increase the number of applicants from underrepresented groups. We recommend the department explore additional steps, such as creating REU

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<sup>11</sup><https://collab.ucsd.edu/pages/viewpage.action?pagelId=97850348&preview=/97850348/105056333/Rubrics%20Module.pdf>

<sup>12</sup><https://collab.ucsd.edu/display/GDCP/Requesting+a+Permanent+Change+of+GRE+Requirements+-+Letter+Template>

<sup>13</sup> <https://advances.sciencemag.org/content/5/1/eaat7550>

experiences and taking the steps needed to become a partner institution in the [APS Bridge Program](#).

- **Supporting and Retaining Graduate Students:** To assure our graduate students, particularly those from underrepresented communities, thrive in the PhD program, it is crucial that the department regularly assess graduate student sentiment and act to address concerns in a collaborative manner. Such work could be part of the charge of the Climate Committee, and we encourage regular meetings between graduate students and the Department Chair. A comprehensive assessment of the reasons students leave the department pre-PhD or decline offers of admission should be undertaken to identify and address persistent and/or systemic issues.
- **Undergraduate Program:** The department has made significant changes to the undergraduate curriculum aimed at enhancing student success, and now it is important to study how we can improve our ability to support undergraduate physics majors from underrepresented groups - especially for transfer students. Opportunities in this area include:
  - **Participating in the creation of a dedicated DPS Summer Upper-Division Bridge Program:** The division is considering creating a dedicated summer bridge program for students majoring in physics, mathematics, and chemistry. We encourage the program to include physics components such as participation in research, math skills used in physics classes, etc. Departmental collaboration with the Bridge Program would be an important complement to enhance the success of the changes made to the PHYS 4 sequence for incoming physics majors.
  - **Offering PHYS 4A/B during the summer:** Pandemic isolation restrictions and the opportunity to teach remotely has enabled the department to offer PHYS 4A/B during summer '20 and '21 - making it possible for more transfer students to take this sequence in preparation for the upper division courses. The department should explore and consider other similar steps which can be taken to help our transfer students succeed.
  - **Undergraduate Research Engagement and Preparation:** Many faculty currently provide opportunities for undergraduate research, which is crucial for the future success of students - especially for students from underrepresented backgrounds. The department should explore ways to enhance participation in TRELS or create other opportunities to expand the number of positions available for undergraduate research. Similarly, when students approach the upper division level, the department should develop curricular components that allow students to delve into the research conducted at UCSD such as assigning reading of

scientific papers published in our department. The department should strongly encourage faculty members to dedicate some effort to guide the students in this process (or hand off the mentorship to supervised graduate students or postdocs).

- **Seminars, Colloquia, and Visiting Scholars:** The department invests substantially in support for colloquia and disciplinary seminars. Programs such as the Margaret Burbidge Visiting Professorship bring high-profile women scholars to campus, providing important role-models for our students and postdocs (in addition to providing active collaborators for our faculty). Exploring opportunities to further enhance the number of long- and short-term visitors from diverse backgrounds in physics department seminars and colloquia would be a visible means for the department to support diversity and inclusion in physics.

# Appendix 1

## 2019-2020 Guidelines for DPS Departmental EDI Strategic Plans DPS EDI Committee November, 2019

**Outline:** All departments in the UC San Diego Division of Physical Sciences will be creating Equity, Diversity, and Inclusion (EDI) strategic plans during the 2019-2020 academic year<sup>14</sup>. This document summarizes the guidelines for the content of these plans, and our suggestions for continued development of EDI plans in the future.

### Diversity vs. Inclusion vs. Equity:

- Diversity refers to the specific numerical representation of the number of students, faculty, and staff in the department from underrepresented groups, is measured using institutional records analyzed according to officially recognized categories, and is evaluated in comparison to CA state averages (to set an ultimate goal) and to the relevant available “pool” of candidates. *A diverse department includes students, faculty, and staff with a range of different personal characteristics (including, but not restricted to, gender and gender identity, race, ethnicity, and ability), ideally reflecting the diversity inherent in the state of California.*
- Inclusion refers to the nature of the climate (e.g. interpersonal and institutional interactions, classroom environment, institutional policies) faced by students, faculty, and staff from underrepresented groups in the department, is measured through qualitative methods (e.g. surveys and interviews, including student evaluations of instruction) which report their lived experience, and is evaluated with respect to the norms of the UC San Diego “Principles of Community.” *An inclusive department acknowledges and values the richness and diversity of its students, faculty, and staff, and actively creates an environment which supports them to professionally succeed.*
- Equity refers to the treatment of students, faculty, and staff in the department both on an interpersonal and institutional level, as well as through official policies, and is measured through an evaluation of the steps taken to provide support for students, faculty, or staff from underrepresented groups and to mitigate the effects of implicit bias and stereotype threat. *A department which operates equitably treats all students, faculty, and staff with kindness, fairness, and respect, and ensures that its environment and policies are unbiased and do not explicitly or implicitly promulgate stereotypes which undermine persons from underrepresented groups.*

**Goals:** Enable departments to critically analyze their current EDI efforts, understand their current “stage of development” as a [multicultural organization](#), and commit to specific actions over the next three years to improve. The EDI strategic plans are meant to be “living

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<sup>14</sup> This deadline was delayed to the beginning of the 2020 academic year due to the COVID-19 pandemic.

documents” which will be updated on a yearly basis, and serve to help coordinate EDI activities across the division.

**Timeline:** Draft strategic plans completed by departments by the end of winter 2020, review and feedback by EDI committee in early spring 2020, and finalized EDI plans by the end of spring 2020. We envision this document will be updated on a yearly basis, with more substantial review and revision during the 2022-2023 academic year.

**Suggested Minimum Requirements for Winter 2020 plan:**

- Introduction, including departmental statement of commitment to EDI issues and a description of how departmental EDI commitment is publicized and used in departmental functions.
- Description of departmental administrators and/or committees responsible for creating, reviewing, and invigorating departmental EDI activities.
- Basic demographic information on women/URM faculty (broken down by rank), graduate and undergraduate students by year, both current numbers and a 2014 baseline.
- Responses to actions/information requested in DPS “Task Force Implementation Plan”.
- Preliminary analysis of departmental “stage of development” as a [multicultural organization](#).
- Identification of three high-priority EDI initiatives (preferably spanning multiple areas of faculty, graduate, or undergraduate students/curricula) the department will undertake by the end of the 2020-2021 academic year.
- Plans for providing a progress report/update to the EDI Strategic Plan during Spring 2021.

**Components of an EDI Strategic Plan – Long Term vision:**

The content described above is meant to provide a starting point. In the longer term, we suggest departmental EDI plans should evolve to cover the topics below.

1. Departmental EDI Statement
  - a. What is the departmental EDI statement?
  - b. How is this statement is deployed (e.g. website, grad recruiting materials, etc.) in departmental functions?
  
2. Departmental Diversity data – current, 2015 baseline (if possible)  
UC San Diego officially defines underrepresented minorities (URMs) as those who self-identify as Black, Hispanic/Latinx, or Native American/Alaska Native.
  - a. Proportion of Women/URM Faculty at each rank (Asst, Assoc, Prof)
  - b. Proportion of Women/URM postdocs and research staff, by job category.
  - c. Proportion of Women/URM graduate students, both pre- and post-candidacy
  - d. Proportion of Women/URM undergraduate students (definition?)
  
3. Departmental Inclusion data



- a. Overall DPS baseline on inclusion is given by the divisional climate survey, and the EDI plan should include an analysis of the conclusions drawn by the department from this survey.
  - b. If the department has additional information addressing the inclusiveness of their departmental culture and instructional spaces, this information should be summarized and analyzed as well.
4. Departmental Equity Information
  - a. List all departmental programs or activities that support URM students, postdocs, research staff, and faculty.
  - b. Have these efforts been evaluated? If so, a brief description of the efficacy of these efforts should be included here?
5. Departmental EDI Self-Study
  - a. Based on the diversity, inclusion, and equity information summarized in sections 2-4, briefly summarize departmental EDI successes.
  - b. Summarize the proactive steps (including departmental partnership with divisional, campus, or national initiatives) being taken by the department to create professional and instructional environments which ensure that all are treated kindness, fairness, and respect, and which mitigate the effects of implicit bias and stereotype threat, including:
    - i. Activities to diversify the undergraduate student populations and provide URM students with mentoring and support.
    - ii. Activities to diversity the graduate student population and to provide students from underrepresented groups with mentoring and support.
    - iii. Activities to create inclusive classrooms and curricula,
    - iv. Activities to diversity the faculty and research staff.
    - v. Activities to create an inclusive departmental climate.
  - c. Based on an analysis of items a & b, categorize current departmental development in addressing EDI goals using the [Multicultural Organizational Development Framework](#).
6. Departmental Strategic Plans.
  - a. Informed by the information gathered, summarize future departmental EDI plans.
  - b. Specifically describe plans to address the issues in item 5b, that is plans to diversity students and faculty, and to improve departmental climate
  - c. How will the department progress to the next stages in the [Multicultural Organizational Development Framework](#) over the next five years?

## Appendix 2

### UCSD Physics Department Faculty Diversity Analysis April 2020

Summary: Data on the diversity of representation of faculty in the UCSD Physics Department are summarized and analyzed with respect to national and campus-wide trends.

Gender:

Analysis: Table 1 shows that the overall representation of women among UCSD physics faculty (all ranks, not including administrative faculty) grew from 12% in 2014 to 16% in 2019, at the same time that the number of faculty grew from 49 to 64. Overall, this proportion is comparable to national figures where we see (Table 2) that women constitute 16% of faculty at Doctoral granting institutions in the US. In terms of hiring, 7 of the 23 new faculty hired by the UCSD physics department during that period were women, or approximately 30% - a number which is very similar to the national average in which women constituted 27% of newly-hired physics faculty in 2018. The distribution of women faculty by rank in the UCSD physics department is currently 4 tenured faculty (9% of Associate Professors or Professors), and 6 untenured faculty (33% of Assistant Professors). These proportions by rank are a bit lower than the proportion of senior women faculty nationally (12% - 21%) and a bit higher for the proportion of junior faculty (25%) as shown in Table 2, though these data are not broken out by department type). Finally, the fraction of women faculty in the UCSD physics department (16% in 2019) is comparable to the fraction of women in the Division of Physical Sciences overall (30 out of 176, or about 17%, in 2018) and the Jacobs School of Engineering (34 out of 237, or 14%), but substantially lower than the fraction of women faculty in the Division of Biological Sciences (38 out of 104, or 37%) or on the UCSD General Campus as a whole (297 out of 998, or 30% in 2018).<sup>15</sup>

Comments: A “snapshot” of the number and distribution of women in the UCSD department shows that it is similar to physics departments nationally and the UCSD Division of Physical Sciences as a whole. It is notable, however, that the department increased the number of women faculty by 4 from 2014 to 2019 (growing from 6 to 10) *while hiring seven women during that period*. (By comparison, the number of men in the department grew by 11 while hiring 16 men.) Therefore, in addition to continuing to hire women as searches allow, to keep pace with national norms retention of women faculty should be a priority.<sup>16</sup>

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<sup>15</sup> UCSD campus data from the “Academic Personnel Diversity Dashboard” of the UCSD Office for Equity, Diversity, and Inclusion website. <https://diversity.ucsd.edu/accountability/academic-personnel.html>

<sup>16</sup> The data collected do not allow for an analysis of departures, and the numbers overall include retirements. Given the climate issues raised in the APS CSWP site visit and the DPS Climate Survey, a review and analysis of the departures and a program to enhance retention of faculty should be considered.



## Minority Status:

Analysis: Table 1 shows that the fraction of Under-Represented Minority faculty (self-identified, includes American Indian/Alaska Native (AI/AN), Black/African American (AA), and Chicano/Latino faculty(CL)) in the UCSD physics department stayed roughly constant, going from 10% in 2014 to 11% in 2019 while the overall number of faculty increased from 49 to 64. This proportion is substantially higher than national figures where, as shown in Figure 2, only African-American faculty constituted only 1.5% and Hispanic faculty only 3.3% of faculty in doctoral degree-granting physics departments nationwide. URM faculty accounted for 3 of the 23 newly-hired faculty in the department during that period, or about 13%. These figures are also substantially higher than the expected pool of candidates – in particular, from Figure 3 we deduce that African-Americans accounted for only 0.8% and Hispanic-Americans for only 2% of PhDs awarded by US institutions. It is notable that the distribution of URM faculty by rank in the UCSD physics department is approximately equally split between tenured and untenured faculty (3 tenured, 4 untenured). The total fraction of URM faculty in physics is also higher than in the Division of Physical Sciences (0.8% AI/AN, 0.8% AA, and 4.2% CL, for a total of 5.8%) and the Jacobs School of Engineering (0.3% AI/AN, 1.3% AA, and 5.8% CL for a total of 7.4%), and comparable to the proportion for General Campus as a whole (0.3% AI/AN, 3.0% AA, and 6.9% CL, for a total of 10.2%).

Comments: Overall, the proportion and representation of faculty from under-represented groups in the UCSD physics department is higher than for physics departments nationally and in physical science departments on campus, and comparable to the representation on general campus as a whole. While overall representation is strong, there are no faculty in physics who self-identify as American Indian/Alaska Native or Black/African-American.

Table 1: Physics Faculty and Faculty Hiring, 2014-2019 (UCSD Department):

	2014	2015	2016	2017	2018	2019	% Change
<b>FACULTY MEASURES POPULATION (LDR &amp; TEACHING RANKS) (not incl. Admin Faculty)</b>							
Total Faculty (All Ranks)	49	51	55	57	62	64	30.6%
Total Professor rank	31	35	35	38	39	39	25.8%
Total Associate and LSOE rank	11	7	6	3	5	7	-36.4%
Total Assistant and LPSOE rank	7	9	14	16	18	18	157.1%
Women - All Ranks	6	7	8	9	8	10	66.7%
Women - Professor rank	1	1	2	3	3	3	200.0%
Women - Associate & LSOE rank	2	2	1	1	1	1	-50.0%
Women - Assistant & LPSOE rank	3	4	5	5	4	6	100.0%
URM - All Ranks	5	5	5	6	6	7	40.0%
URM - Professor rank	3	3	3	3	3	3	0.0%
URM - Associate & LSOE rank	0	0	0	0	0	0	-
URM - Assistant & LPSOE rank	2	2	2	3	3	4	100.0%
% Women (All ranks)	12%	14%	15%	16%	13%	16%	27.6%
% Women (Professor rank)	3%	3%	6%	8%	8%	8%	138.5%
% Women (Assoc. Prof rank)	18%	29%	17%	33%	20%	14%	-21.4%
% Women (Asst. Prof rank)	43%	44%	36%	31%	22%	33%	-22.2%
% URM (All ranks)	10%	10%	9%	11%	10%	11%	7.2%
% URM (Professor rank)	10%	9%	9%	8%	8%	8%	-20.5%
% URM (Assoc. Prof rank)	0%	0%	0%	0%	0%	0%	-
% URM (Asst. Prof rank)	29%	22%	14%	19%	17%	22%	-22.2%
<b>FACULTY MEASURES NEW FACULTY HIRES (LDR &amp; TEACHING RANKS) (not incl. Admin Faculty)</b>							
	7/2014 - 6/2015	7/2015 - 6/2016	7/2016 - 6/2017	7/2017 - 6/2018	7/2018 - 6/2019	7/2019 - 6/2020	TOTALS
Total New Faculty (All Ranks)	3	4	3	6	5	2	23
Women - All Ranks	2	2	0	1	2	0	7
URM - All Ranks	1	0	0	1	0	1	3
% Women hired (All ranks)	67%	50%	0%	17%	40%	0%	30%
% URM hired (All ranks)	33%	0%	0%	17%	0%	50%	13%

Table 2: Percent of Physics Faculty Members Who are Women (AIP, 2019)

Percent of Physics Faculty Members Who Are Women, 2006 - 2018

Academic Rank	Academic Year			
	2006	2010	2014	2018
Full Professor	6%	8%	10%	12%
Associate Professor	14%	15%	18%	21%
Assistant Professor	17%	22%	23%	25%
Instructor/Adjunct	19%	21%	23%	27%
Other Ranks	12%	18%	20%	19%
<b>Highest Physics Degree Offered</b>				
PhD	10%	12%	14%	16%
Master's	14%	15%	18%	20%
Bachelor's	15%	17%	20%	22%
<b>Overall</b>	<b>12%</b>	<b>14%</b>	<b>16%</b>	<b>19%</b>

Table 3: Percent Newly-Hired Physics Faculty Members who are Women (AIP, 2019)

Percent of Newly-Hired Physics Faculty Members who are Women, 2014 - 2018

Academic Status	Academic Year		
	2014	2016	2018
Tenured*	9%	30%	27%
Tenure-Track	28%	22%	26%
Temporary Full-Time	33%	29%	24%
Non-Tenure-Track, Permanent	28%	32%	32%
Part-Time	29%	28%	32%
<b>Overall</b>	<b>28%</b>	<b>26%</b>	<b>27%</b>

\*Due to the small population of new tenured faculty, changes in the proportions of women hired represent small changes in the actual number of women hired.

Figure 1: Percent Physics Bachelors and PhDs Earned by Women (AIP, 2019)

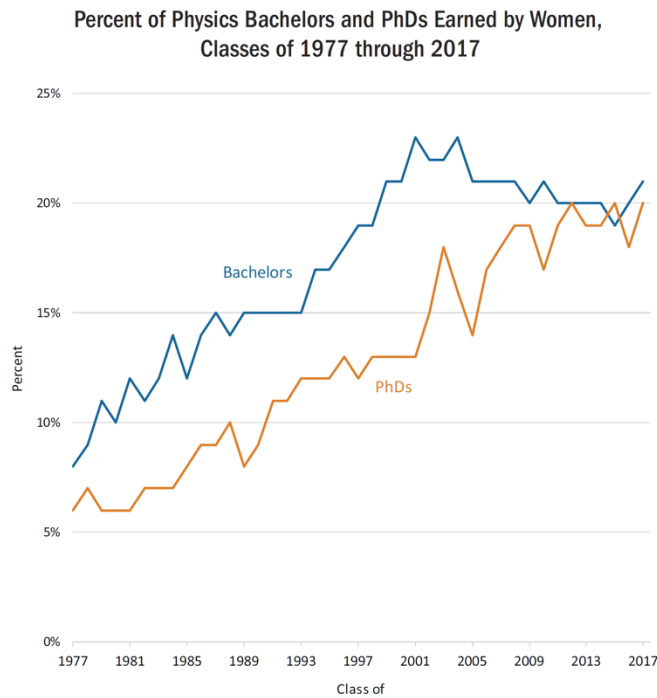
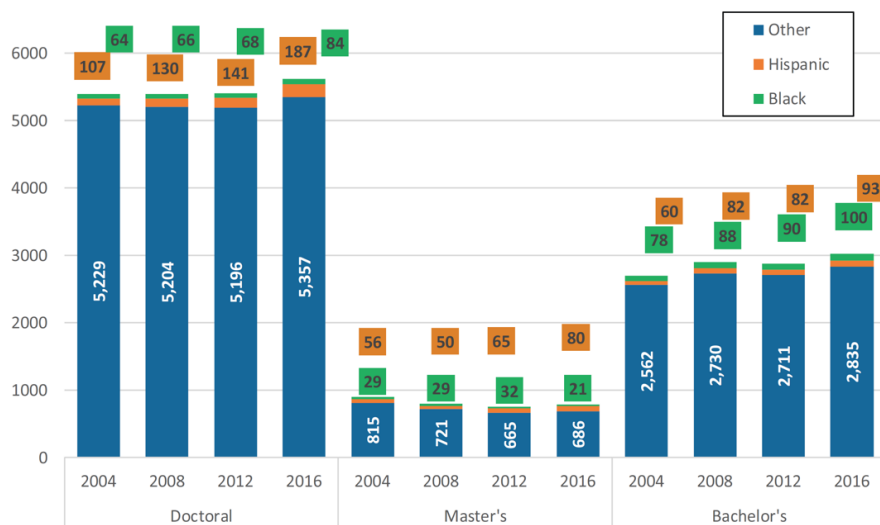


Figure 2: Number of African-American and Hispanic Faculty Members by Highest Degree Offered by Department (AIP)

Number of African-American and Hispanic Physics Faculty Members by Highest Degree Offered by Department, 2004 to 2016

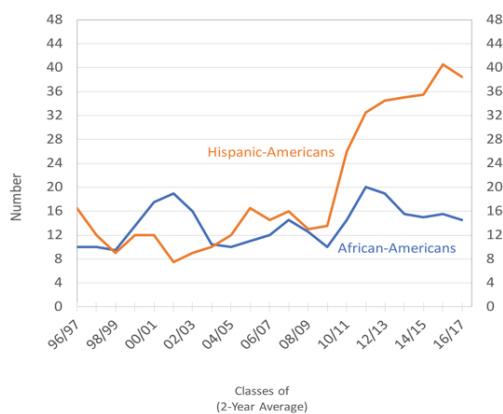


AIP Statistics

[aip.org/statistics](http://aip.org/statistics)

Figure 3: Number of Physics Doctorates Earned by African-Americans and Hispanic-Americans from 1996 – 2017 (AIP 2018). Note that approximately there were approximately 1850 PhDs in Physics awarded by US institutions in 2017 (AIP).

Number of Physics Doctorates Earned by African-Americans and Hispanic-Americans, Classes 1996 through 2017.



AIP Statistics

[aip.org/statistics](http://aip.org/statistics)

# Appendix 3

## UCSD Physics Department Graduate Admissions Diversity Analysis April 2020

Summary: Data on the diversity of representation in the UCSD Physics Department graduate admissions process are summarized and analyzed with respect to national trends.

Applications:

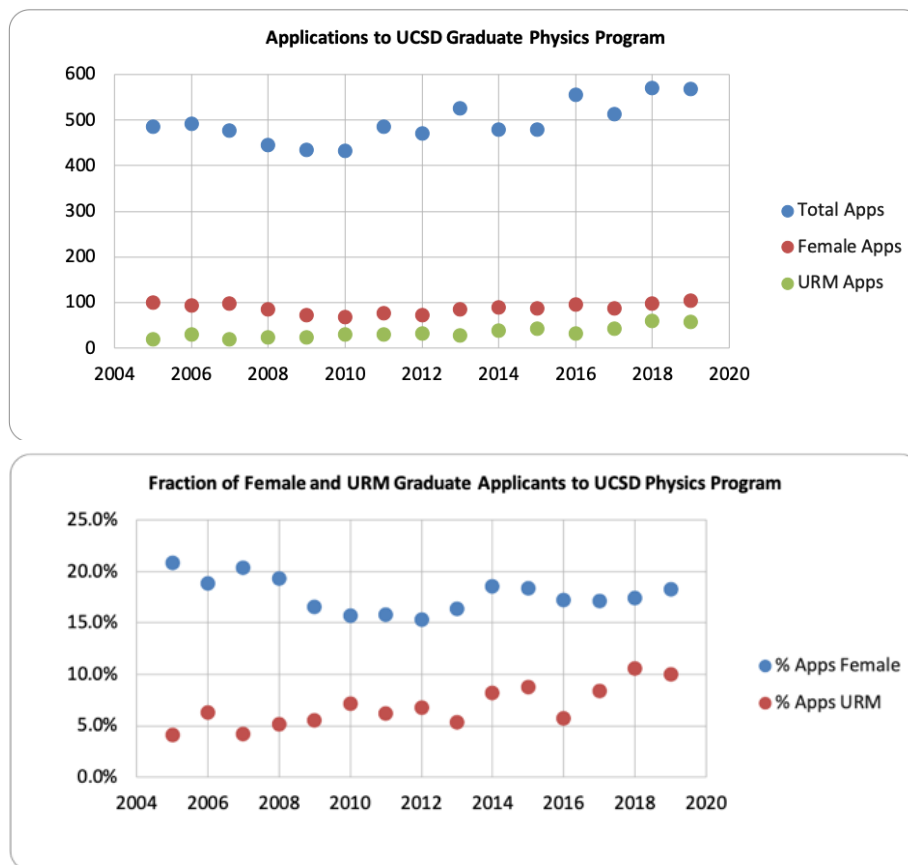


Figure 1: Number of applications to UCSD Graduate Physics program, 2003-2019, as well as number of applications from women and URM students (left). Fraction of applications from women and URM students, 2005-2019 (right).

As shown in Figure 1, the number of applications to the UCSD graduate physics program has grown modestly from around 500 in 2005 to almost 600 in 2019. During that period the fraction of women applicants started and ended at around 20%, though it has fluctuated to as low as 15% over this period. The overall number of URM applicants rose during that period from



roughly 5% to 10%, largely reflecting an increase in the number of Chicano/Latino students (CHECK).

Analysis: The fraction of women applicants to the UCSD graduate physics program is consistently lower than the fraction of women earning Bachelor's degrees in physics, which peaked at 22-23% in the early 2000's and remains at 20% through at least 2017. The fraction of URM applicants likewise trails the fraction of URM physics Bachelor's degree recipients, which rose from 9% in the early 2000's to almost 14% in 2017.

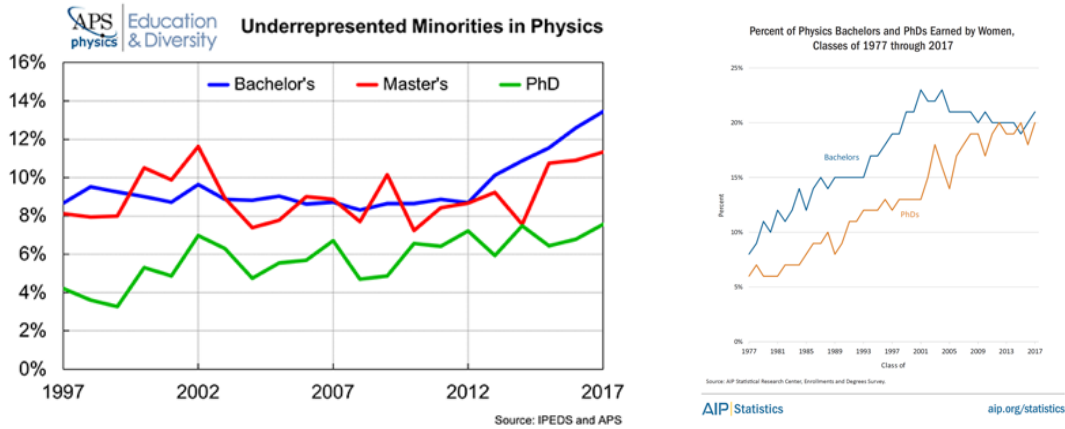
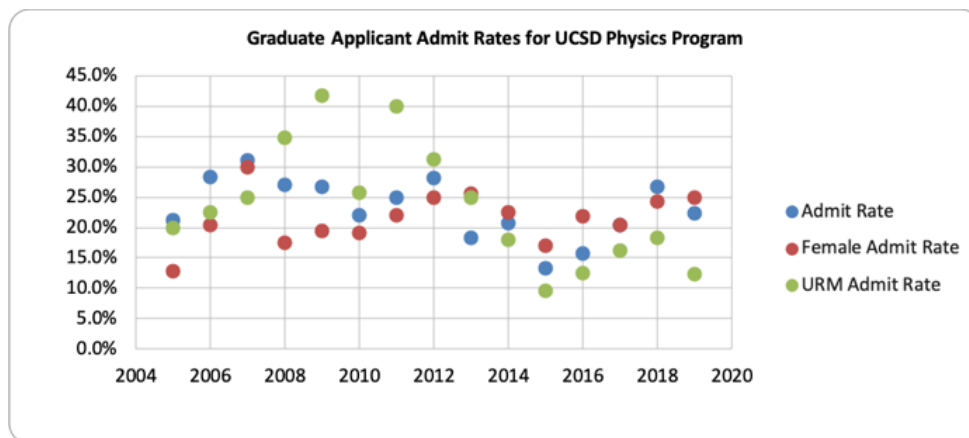


Figure 2: Fraction of degrees earned by URM students (left) and women (right) (AIP). Admissions Process:



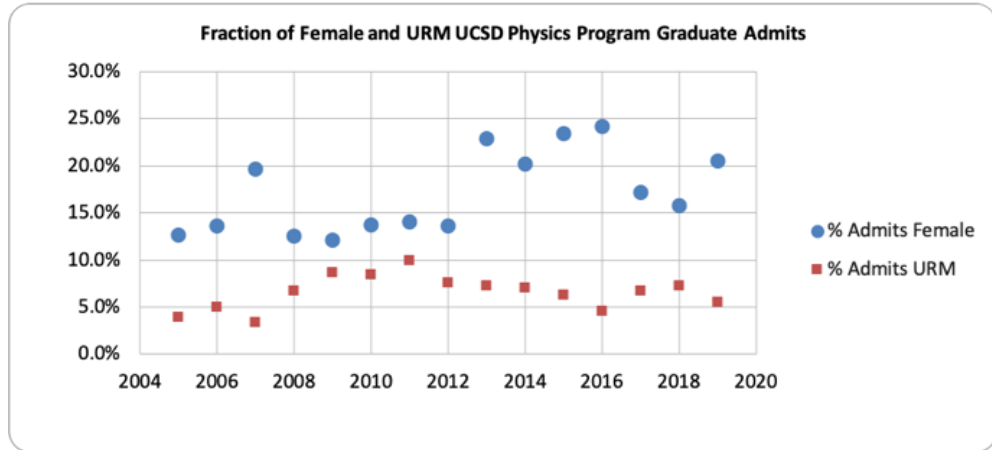
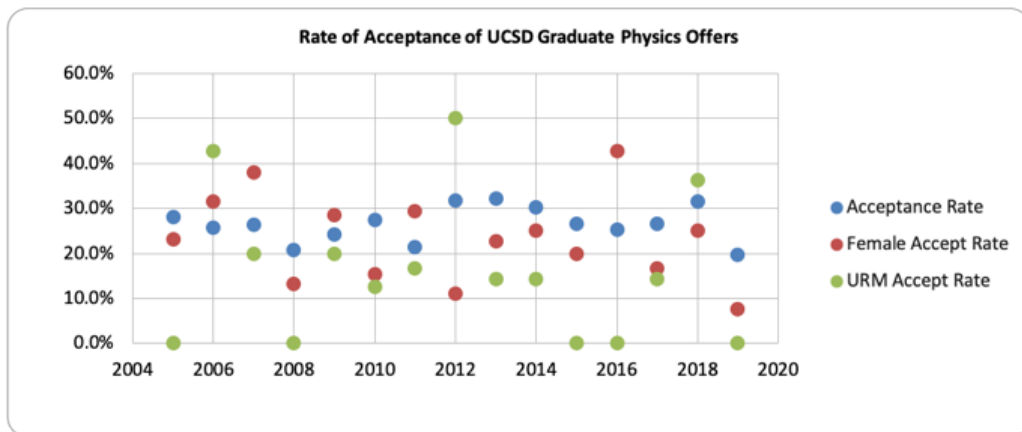


Figure 3: Fraction of applicants admitted (“admit rate”) overall, as well as for women and URM students (left). Fraction of women and URM admitted students (“% admits”, right).

Analysis: The admit rate for women to the UCSD graduate physics program has been comparable to the overall admissions rate for all applicants. It is notable that the admit rate for women has been lower than the overall rate between 2003-2019 for all except for four years (2013-2017), when it differed very little from the overall rate – i.e. all fluctuations have been on the *low side*. With a smaller number of students in the pool, the admit rate for URM students has fluctuated greatly. However, the fraction of accepted URM students peaked in 2011 (at a value of 10%), and has remained below 10% since then despite an increase in the pool of URM applicants since 2016.

Acceptances (“Yield”):



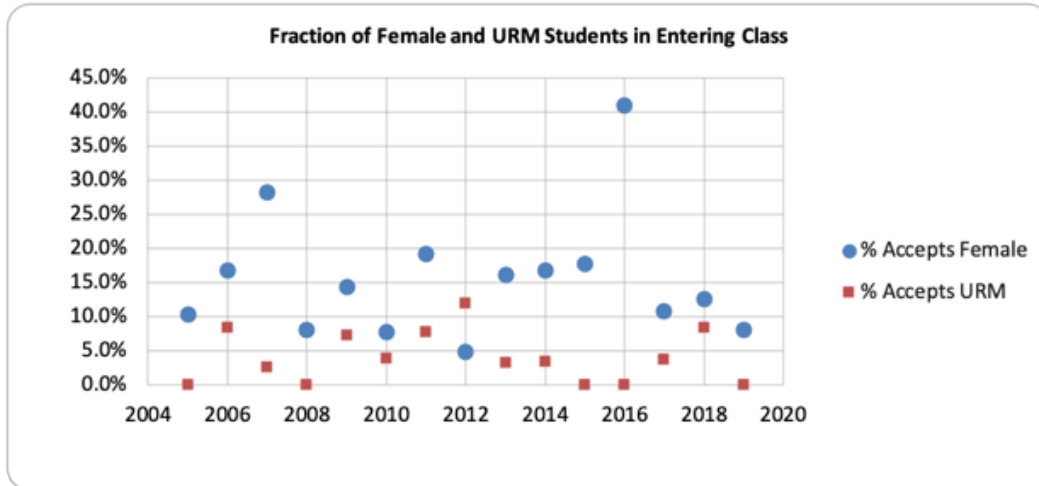


Figure 4: Rate of acceptance of UCSD graduate physics program offers overall, as well as for women and URM students (left). Fraction of women and URM students in incoming graduate class (right).

Analysis: The fraction of acceptances of UCSD physics graduate admissions offers by women is comparable to the overall acceptance rate, but has been lower in seven of the last eight years, and anomalously low in 2019. The fraction of acceptances by URM students has fluctuated substantially, but has been lower than the overall rate for all but three of the last fifteen years – and no URM students matriculated in five of those years.

Comments: The departmental graduate recruiting program has substantially lagged national norms with regard to the representation of women and URM students in all phases, applications, admissions, and yield.

## Appendix 4

UCSD Physics Department  
Undergraduate Education Diversity Analysis  
May 2020

Summary: The data below summarize Physics undergraduate retention and graduation rates for all students, by gender, and by URM and 1<sup>st</sup> generation (in college) status.

### 1st year entering student retention rates (2-yr)

Year	all	men	women	URM*	1st gen
2012	87% (45)	86% (31)	88% (14 = 31%)		88% (15 = 33%)
2013	87% (81)	87% (65)	89% (16 = 20%)	61% (11 = 14%)	94% (32 = 40%)
2014	88% (107)	90% (84)	79% (23 = 21%)	79% (17 = 16%)	85% (34 = 32%)
2015	88% (119)	86% (86)	92% (33 = 28%)	90% (23 = 19%)	89% (25 = 21%)
2016	85% (151)	84% (117)	90% (34 = 23%)	71% (30 = 20%)	83% (43 = 28%)
2017	90% (92)	91% (72)	87% (20 = 22%)	79% (23 = 25%)	86% (30 = 33%)

### 1st year entering student graduation rates (4-yr)

Year	all	men	women	URM*	1st gen
2011	44% (11)	(8)	(3 = 27%)	(1 = 9%)	(1 = 9%)
2012	48% (25)	44% (16)	(9 = 36%)	(4 = 16%)	(7 = 28%)
2013	54% (50)	53% (40)	56% (10 = 20%)	(6 = 12%)	53% (18 = 36%)
2014	58% (71)	56% (52)	66% (19 = 27%)	62% (12 = 17%)	43% (17 = 24%)
2015	60% (81)	57% (57)	67% (24 = 30%)	(6 = 7%)	64% (18 = 22%)

1st year entering student graduation rates (5-yr)

Year	all	men	women	URM	1st gen
2011	68% (17)	87% (13)	(4 = 24%)	(2 = 12%)	(3 = 18%)
2012	73% (38)	67% (24)	88% (14 = 37%)	(8 = 21%)	71% (12 = 32%)
2013	79% (73)	79% (59)	78% (14 = 19%)	(8 = 11%)	82% (28 = 38%)
2014	78% (95)	80% (74)	72% (21 = 22%)	41% (18 = 19%)	75% (30 = 32%)

Transfer student retention rates (2-yr)

Year	all	men	women	URM*	1st gen
2014	90% (18)	93% (14)	(4 = 22%)	(6 = 33%)	
2015	86% (43)	90% (35)	(8 = 19%)	88% (15 = 35%)	74% (14 = 33%)
2016	89% (55)	89% (46)	(9 = 16%)	81% (13 = 24%)	92% (24 = 44%)
2017	92% (24)	94% (17)	(7 = 29%)	(9 = 38%)	100% (11 = 46%)
2018	84% (14)	79% (11)	(3 = 21%)		

Transfer student graduation rates (3-yr)

Year	all	men	women	URM*	1st gen
2013	59% (16)	63% (12)	(4 = 25%)	(4 = 25%)	(6 = 38%)
2014	55% (11)	(8)	(3 = 27%)	(3 = 27%)	(7 = 64%)
2015	52% (26)	59% (23)	(3 = 12%)	(5 = 19%)	(9 = 35%)
2016	42% (26)	44% (23)	(3 = 12%)	(4 = 15%)	46% (12 = 46%)

Transfer graduation rates (4-yr)

Year	all	men	women	URM*	1st gen
2013	59% (19)	79% (15)	(4 = 21%)	(4 = 21%)	(6 = 32%)

2014	55% (14)	73% (11)	(3 = 21%)	(5 = 36%)	(9 = 64%)
2015	52% (36)	77% (30)	(6 = 17%)	82% (14 = 39%)	63% (12 = 33%)

Comments: The fraction of women 1<sup>st</sup>-year physics students at UCSD is comparable to the numbers nationwide, while the fraction of URM and 1<sup>st</sup>-generation students is slightly higher than those nationwide. Furthermore, the retention and graduation rates for 1<sup>st</sup> year entering students are comparable across gender, and by URM and 1<sup>st</sup> generation status – and the 5-year graduation rate is approaching 80%. The situation for transfer students is substantially different however: the fraction of women students is similar to that for 1<sup>st</sup>-year students, but the fraction of URM and 1<sup>st</sup>-generation students is substantially higher. The transfer graduation-rate (in physics) is substantially lower, however, and remains only between 50%-60% (4-year – after transfer matriculation at UCSD – rate).

## Appendix 5

UCSD Physics Department  
Graduate Student Population and Awards by Gender  
Historical Data

<b>2017-2018</b>	<b>Total</b>	<b>Male</b>	<b>Female</b>
Grad enrollment	139	110	27
Enrollment percentage		79%	19%
Nominations	16	8	8
Nomination percentages		50%	50%
Award winners	6	3	3
Award winner percentages		50%	50%

<b>2018-2019</b>	<b>Total</b>	<b>Male</b>	<b>Female</b>
Grad enrollment	165	137	28
Enrollment percentage		83%	17%
Nominations	17	10	7
Nomination percentages		59%	41%
Award winners	5	4	1
Award winner percentages		80%	20%

<b>2019-2020</b>	<b>Total</b>	<b>Male</b>	<b>Female</b>
Grad Enrollment	162	137	25
Enrollment percentages		85%	15%
Nominations	7	6	1
Nomination percentages		86%	14%
Award winners	3	3	0
Award winner percentages		100%	0%

# Appendix 6

## Physics Graduate Student Letter June 2020

Over 50 graduate students signed an internal letter to the department in June 2020 expressing anger and frustration at the lack of response to the tragic murders of George Floyd, David McActee, Breonna Taylor, Tony McDade, Ahmaud Arbery, and countless others. The letter acknowledged the lack of recruitment and retention of Black scholars at all academic levels of the department as a result of systematic bias. The graduate students also recognized their apathetic attitude played a role in allowing systematic bias to endure.

Prior to the letter, the Black Student Union released a thorough [list of demands](#) from the University as a whole. In order to ensure these demands are heard within the Physics department, the graduate students included a specific list of requests based on the BSU statement. The students do not expect the requests to be self-contained, but rather an initial point of discussion designed to assist with the wide variety of necessary changes. Ultimately, the student's central goal is to develop a supportive environment where students, faculty, and staff of all races and identities thrive.

### **SYSTEMATIC CHANGES**

1. Removal of the Physics GRE as a requirement for application and admission.
  - a. Overwhelming evidence<sup>17</sup> indicates the PGRE explicitly perpetuates an unequal barrier to admissions among graduate applicants in underrepresented populations. Additionally, there is research that shows the PGRE is an ineffective measure of ability to complete a PhD.
2. Hiring a Black faculty member on the tenure track by 2025. At the time of writing there are none.
3. Required, [DEI](#) approved, graduate and undergraduate courses focused entirely on inequality in Physics and methods for change. This could take the form of a 1 or 2 unit seminar co-taught by faculty from other departments.
4. Required bi-annual, in person implicit bias training for faculty.
5. Dedicated stipend and/or course credit for underrepresented graduate/undergraduate students who wish to serve on climate committees.
6. Physics department involvement with [PATHS](#).

### **CULTURAL CHANGES**

1. Graduate students are encouraged to question faculty mentality towards equity, diversity, and inclusion prior to joining a lab. Graduate students who find themselves serving a

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<sup>17</sup> See [this](#) work for an empirical discussion, where responses to received comments can be found on [arxiv](#). A compilation of additional resources can be found [here](#)



mentor who supports institutional racism or is apathetic towards change should consider refusing to continue research in that lab. Marginalizing comments can be reported to the system described in TRANSPARENCY and ACCOUNTABILITY CHANGES point 5.

2. Faculty, graduate students, and post doctoral researchers focus on recruiting and mentoring undergraduates from underrepresented minorities for research projects.
3. Faculty, graduate students, and post doctoral researchers take part in outreach programs focusing on underrepresented communities off campus.
4. All members of the department proactively educate themselves on systematic bias in the community.
  - a. This could be implemented as a once a month/quarter lab meeting or journal club, dedicated to presenting and discussing institutional bias in Physics and STEM. It should be focused on changes individuals can make in order to embody the anti-racist mindset.
  - b. A good place to start is the following, thorough document of [anti-racism resources](#) compiled by Sarafina Nance and Nicole Long in the UC Berkeley Astronomy Department.

#### **TRANSPARENCY and ACCOUNTABILITY CHANGES**

1. Annually assess and discuss department progress independently from the undergraduate, graduate, and faculty prospective using the [TEAM-UP rubric](#)
2. Public demographic data on faculty, graduate student, and post-doctoral researcher applications, admissions, and acceptance to attend.
3. The hiring process for faculty include separate group interviews/meetings with graduate students as well as the Physics faculty committee on equity, diversity, and inclusion in order to assess their importance to incoming faculty. The EDI assessment should be made available to graduate students prior to the hiring decision.
4. Increased transparency in the tenure granting process. Specifically how research, teaching, diversity, and outreach are each weighed in deciding whether or not to grant tenure.
5. A clear, dedicated system within the department for anonymously reporting marginalizing comments by students, faculty, or staff. Graduate students should be involved in devising and implementing the system wherein all department members feel comfortable in reporting these comments.
6. Minutes on faculty meetings be made *easily* accessible and archived for graduate students. Especially meetings involving votes and decisions regarding diversity initiatives or structural changes to the department.
7. Graduate student involvement with the admissions committee prior to application season. Allowing for discussion about how to invite a more diverse pool of applicants and strengthening the appeal of UCSD to underrepresented minorities over other universities post admissions.
8. Maintaining an up-to-date web-page specifically handled by a dedicated graduate student, undergraduate student, or staff.

- a. An independent diversity page that expresses a clear strategic outline on the department plans to combat specific inequalities including but not limited to race, sex, gender, disability, and their intersections.
  - b. An independent outreach page to promote outreach programs dedicated to involving underrepresented minorities in STEM.
9. Organize a department-wide discussion (over Zoom) on the Thirty Meter Telescope project with invited Hawaiian natives by the end of the Summer quarter, 2020.

## Appendix 7

# Policy and Programmatic Recommendations Discussed by the EDI Committee

Based on our review of the APS CSWP visiting committee report, the progress that has been made since their review, and the data summarized above, the Equity, Diversity and Inclusion Committee discussed the following steps to improve the climate for all students, faculty, and staff, and to increase the access and support for people from underrepresented groups.<sup>18</sup> After review with the Department Chair and MSO, the committee was asked to provide a more focused set of high-priority recommendations - these are listed [above](#).

1. Transparency of Departmental Policies and Decision Making
  - a. Take and distribute minutes for faculty and advisory committee meetings to improve transparency and accountability in departmental deliberations. The newly created online portal would be an ideal platform for the distribution of these minutes. **Responsibility: Chair**
  - b. Codify and distribute rules for how faculty meetings are conducted and how departmental decisions are made. Clear procedures will improve departmental climate and the efficiency of faculty meetings, and avoid the chance of misunderstandings and conflict. **Responsibility: Chair**
  - c. [Consider creating a comprehensive set of department bylaws, including \(for example\) the identification and responsibilities of, and selection procedures for departmental Chair and Vice Chairs, the composition, charges, and responsibilities of committees, faculty voting eligibility and procedures, etc. \(The creation of the Astronomy MOU provides an opportunity to consider Departmental processes more broadly.\)](#) **Responsibilities: Chair**

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<sup>18</sup> We note here that although these recommendations are particularly important for improving access to individuals from underrepresented groups, they will be beneficial for all students, faculty, and staff.

2. Departmental Inclusivity
  - a. Create a departmental Equity, Diversity, and Inclusion webpage to disseminate relevant information, including the EDI statement, the names of EDI committee members, and information on whom to contact if a member of the community has concerns. **Responsibility: EDI Committee**
  - b. Distribute EDI statement along with committee charges so EDI considerations can be broadly incorporated into the work of relevant committees. **Responsibility: Chair, MSO, EDI Committee**
  - c. Foster coordination between the EDI and Climate Committees with departmental administration and other committees. **Responsibility: Chair, EDI and Climate Committees**
  - d. Initiate (or resume) regular meetings of the Chair with subgroups in the department, including junior faculty, women faculty, graduate students, and postdocs, to ensure that the views of these constituencies are heard. **Responsibility: Chair and/or Vice Chair for Graduate Studies**
  - e. Ensure diverse representation of faculty (and, as appropriate, graduate students, postdocs, research scientists, and staff) on key departmental committees. **Responsibility: Chair**
3. Graduate Program and Graduate Student Recruiting
  - a. Include appropriate EDI-related considerations in the creation of the autonomous Astronomy graduate program. **Responsibility: Chair and VC Astronomy**
  - b. Evaluate the effects of changes to the qualifying exam process and consider if further refinement (e.g. how do we improve the diagnostic exam and placement process) is required. **Responsibility: Graduate CEP and Qualifying/Diagnostic Committees**
  - c. Evaluate 2020-21 graduate admissions process, and effects (if any) of lack of P-GRE. **Responsibility: Graduate Vice Chairs and Graduate Admissions Committee**
  - d. Participate in C-CIDE ([California Consortium for Inclusive Doctoral Education](#)) project. Create a working group to critically evaluate graduate admissions processes in light of lessons learned from participation in the C-CIDE project, evaluating outcomes, particularly for women and minorities. **Responsibility: Vice Chair for Graduate Studies, Graduate Admissions Committee, EDI Committee**
  - e. Review use of graduate fellowships in the admissions process, and its effectiveness in increasing diversity the graduate student population. **Responsibility: Vice Chair for Graduate Studies, Graduate Admissions Committee, EDI Committee**
  - f. Take steps to increase the diversity of our graduate student population, by:
    - i. Creating a departmental REU ([Research Experience for Undergraduates](#)) program to assist with the recruitment of a diverse graduate student population. **Responsibility: EDI and Outreach Committees**
    - ii. Apply to become part of the [APS bridge program](#). **Responsibility: Graduate Vice Chair, Graduate CEP, and EDI Committee**
4. Undergraduate Program

- a. Foster the implementation of classroom practices that promote inclusion.
  - i. Provide resources (e.g. list of best practices for syllabi, course structure, classroom climate, student interactions, etc.) to faculty on how to create inclusive classrooms in courses for undergraduate students.  
**Responsibility: EDI Committee**
  - ii. Collect and widely distribute (to all faculty and instructors) best practices for inclusive remote instruction during the continuing COVID-19 crisis.  
**Responsibility: Undergraduate and Graduate Vice Chairs and EDI Committee**
  - iii. Review departmental resources and support for OSD accommodations to ensure sufficient space is available to accommodate the needs of our students. **Responsibility: Undergraduate and Graduate Vice Chairs, and EDI and Space Committees**
- b. Diversity in the majors
  - i. Evaluate the impact on equity from procedures for selecting students for the capped undergraduate major. **Responsibility: Undergraduate Vice Chair, UGCEP, and EDI Committee**
- c. Promote student success.
  - i. Review data on retention in PHYS 1, 2, and 4, and consider curricular enhancements to improve the retention of students from all backgrounds. **Responsibility: PHYS 1, 2, and 4 Committees, UGCEP, EDI Committee**
  - ii. Promote opportunities for students to take PHYS 4A/B during the summer after freshman year, to address needs of students coming in with less mathematics preparation. **Responsibility: Undergraduate Vice Chair**
  - iii. Review data on transfer student success and facilitate transfer student preparation to succeed in 100-level physics courses. **Responsibility: Undergraduate Vice Chair, UGCEP**
  - iv. Participate in efforts to create a DPS summer bridge program for incoming students whose high school math preparation was weak.  
**Responsibility: Undergraduate Vice Chair, UGCEP**
- d. Increase participation in undergraduate research and preparation for graduate school for students from all backgrounds.
  - i. Continue to broadly advertise possibilities for funded undergraduate research, including [CAMP and TRELS](#). Encourage physics faculty to become involved in these programs. **Responsibility: Undergraduate Vice Chair, Student Affairs Staff**
  - ii. Create a research opportunities on the website. Create a guide or webpage for faculty interested in supporting undergraduate research in physics including credit-bearing and paid opportunities. , and send e-mails about opportunities to the faculty to help recruit students and make sure they are informed. **Responsibility: Undergraduate Vice Chair, Student Affairs Staff**
  - iii. Continue to create and advertise opportunities for undergraduate students to prepare for graduate studies (e.g. GRE/graduate admissions)

- bootcamps, etc.). These opportunities are particularly important for first-generation students. **Responsibility: Undergraduate Vice Chair, Student Affairs Staff**
- iv. Make the creation of an REU program a departmental priority, as an opportunity to recruit a diverse cohort of excellent transfer students. **Responsibility: Undergraduate Vice Chair, Outreach and EDI Committees**
5. Colloquia & Seminars
    - a. Add charge to the colloquium committee to insure representation of women and underrepresented minorities among colloquium speakers. EDI committee can provide links to APS CSWP and Minority speakers lists - and the resources that are available to support colloquium speakers. **Responsibility: Colloquium and EDI Committees**
      - i. APS women speaker list:  
<https://www.aps.org/programs/women/speakers/index.cfm>
      - ii. APS minority speaker list:  
<https://www.aps.org/programs/minorities/speakers/index.cfm>
      - iii. AAS People of Color (must be AAS member to access):  
<https://aas.org/comms/csma/poc-in-astronomy>
    - b. Suggest that all faculty make an effort to ensure that seminar speakers are also diverse, perhaps in coordination with the colloquium. **Responsibility: Chair and EDI Committee**
  6. Additional Steps:
    - a. Create a curriculum for a freshman and/or senior seminar on under-representation in physics, consider working from the [AAPT curriculum](#). **Responsibility: Interested Faculty**
    - b. Continue and extend work on PHYS 500 to include EDI issues in TA Training. **Responsibility: PHYS 500 faculty, EDI Committee**
    - c. Consider partnering with other departments to create a DPS DEI course. **Responsibility: Undergraduate Vice Chair, EDI Committee, Interested Faculty**
    - d. Collaborate with SACNAS chapter. **Responsibility: EDI Committee, Interested Faculty**
    - e. Consider collaboration at divisional or university level to create new UC-HBCU and UC-HSI initiative proposals **Responsibility: EDI Committee, Interested Faculty**
    - f. Work to create an environment where those interested in working on EDI issues in physics can meet together, consider creating a departmental learning community on these issues. **Responsibility: EDI and Climate committees, Chair and Vice Chairs.**

## Recommendations for Climate Committee

A new UCSD Physics Department Climate Committee has been established and will begin meeting in Fall 2020. We recommend that the inaugural meeting of the Climate committee be held jointly with the Equity, Diversity, and Inclusion Committee. This joint meeting would help establish short-term and long-term goals and action items for the Climate Committee that are consistent with the charge of the committee. These goals and action items include, but not limited to, the following suggestions:

1. Ground the development of the charge and processes of the Climate Committee using appropriate models from other universities and best practices from the social science literature
  - a. Investigate the charges and activities at other Physics and Astronomy departments, for example:
    - i. UC Berkeley Astronomy:  
<https://astro.berkeley.edu/about/diversity-and-climate/>
    - ii. UC Santa Cruz Physics:  
<https://www.physics.ucsc.edu/about/diversity/diversity-committee.html>
    - iii. Princeton Astrophysics:  
<https://web.astro.princeton.edu/about-us/department-climate>
    - iv. Ohio State University Physics:  
<https://physics.osu.edu/climate-and-diversity-committee>
    - v. University of Maryland Physics:  
<https://www.umdphysics.umd.edu/services/climate-committee.html>
    - vi. Note: most of these include faculty, staff, graduate, and undergraduate students
  - b. Best practices
    - i. “Creating a Positive Departmental Climate at Virginia Tech: A Compendium of Successful Strategies”  
[https://advance.vt.edu/content/dam/advance\\_vt\\_edu/resources\\_links/climate\\_compendium/department\\_climate\\_compendium.pdf](https://advance.vt.edu/content/dam/advance_vt_edu/resources_links/climate_compendium/department_climate_compendium.pdf)
    - ii. “Enhancing Departmental Culture: A guide for department chairs:”  
<https://wiseli.wisc.edu/wp-content/uploads/sites/662/2018/10/ClimateBrochure.pdf>
    - iii. “How to Change an Unhealthy Department Culture” (Inside Higher Ed):  
<https://www.insidehighered.com/advice/2019/03/14/recommendations-improving-unhealthy-department-culture-opinion>
    - iv. “Improving Department Climate: Tools and Resources for Departments and Department Chairs”:  
<https://fas.columbia.edu/improving-department-climate-tools-and-resources-departments-and-department-chairs>
2. Create a process to understand the current departmental climate as it is perceived by various stakeholders.

- a. The Climate Committee should be broadly representative of the community - including faculty, postdocs, research scientists, staff and students
  - b. The Climate Committee should review existing data on diversity and representation in the department (seeded by data collected here), and monitor climate through ongoing survey data.
  - c. The Climate Committee should regularly meet with representatives of various segments of the Physics population, including:
    - i. Graduate Students: Physics Grad Council (PGC) through committee representatives elected by the PGC
    - ii. Undergraduate Students: University Women in Physics (UWIP) / Society of Physics Students (SPS), Physics Education staff (possibly through committee representatives elected by these organizations)
    - iii. Postdoctoral Scholars: [need to identify appropriate representative, possibly committee representatives]
    - iv. Faculty: Faculty equity advisor
    - v. Research / Project / Staff Scientists: [need to identify appropriate representative]
    - vi. Physics Staff: [need to identify appropriate representative]
3. Facilitate and support meetings of women faculty, junior faculty, graduate students, and postdocs to allow the development of community among these groups.
    - a. Coordinate with these groups to identify specific needs; e.g., mentoring support, resources, etc.
    - b. Coordinate regular meetings with department leadership (Chair, VC Grad, VC Undergrad, VC Astronomy), as well as with the Climate Committee.
  4. Develop a protocol for receiving and responding to reports of issues or incidents that adversely affect departmental climate, and produce a climate reporting form and establish a method of submission and follow-up.
    - a. Potential models:
      - i. American Astronomical Society Ethics Violation Reporting: <https://secure.ethicspoint.com/domain/media/en/gui/53297/index.html>
      - ii. MIT Dept. of Physics: <https://web.mit.edu/physics/policies/dept/harassment.html>
      - iii. Duke Dept. of Physics: <https://phy.duke.edu/physics-department-statement-conduct>
      - iv. See also climate committee links above for examples
    - b. The processes created should properly coordinate with Title IX and University policies and protocols relevant to nondiscrimination, harassment, and sexual violence.
    - c. Consider the creation of a “code of conduct”, such as that [created by the APS](#).

## Appendix 8

### Actions on Recommendations from APS Site Visit Report

**Table A8.1 : APS Recommendations with Substantial Progress or Fully Completed**

Full Recommendation	Status Update Aug 2020	Suggested next steps	Responsible Parties
5. All departmental committees should have an explicit charge that is written and published.	Committee charges now exist. Committees are asked to review their charges every year.	As changes to departmental policies and procedures are made, ensure committee charges stay current. This is particularly important for key committees, such as the Advisory committee.	Chair
6. The Diversity and Outreach Committee should be split into two independent committees.	EDI Committee created	none	EDI
8. Regularly gather and disseminate statistics on the demographics of the Department including undergraduate and graduate students, postdocs, and faculty.	This data is part of EDI strategic plan.	Establish a sustainable way of collecting & disseminating data, building on the data included in the EDI strategic plan. Utilize campus sources of data whenever possible.	Chair, EDI, Departmental Administration



<p>9. Department administration should provide consistent mentorship for all faculty and clear guidelines for the merit and promotion process.</p>	<p>A policy to create junior faculty mentoring plans was adopted in AY18-19 and implementation began last year. Mentees will be drafting a report of their mentoring activities that will be reviewed and signed by both mentee and mentor at the end of each year.</p>	<p>The Chair should review mentoring plans, take an active role in mentoring, and consider what further actions are appropriate.</p> <p>Survey junior faculty to ensure that their mentoring needs are being met.</p>	<p>Chair</p>
<p>11. Revise the process of Excellence Searches, including the communication of their purpose to the Department as a whole and the charter provided to the search committee, to avoid creating the impression of a two-tier system of faculty hiring.</p>	<p>DPS guidelines exist and are very specific.</p>	<p>Review procedures before excellence searches become available (none planned for the foreseeable future).</p>	<p>Chair, search committees</p>
<p>12. The Department should establish clear guidelines for search committees including the need for a standard rubric for candidate evaluation to be used by all committee members, training for the committee on implicit bias, and questions for all candidates regarding their commitment to diversity and inclusion.</p>	<p>Search committees are going to trainings. Individual committees create rubrics which must be approved by DPS Dean's Office prior to the search moving forward.</p>	<p>Continue to share and develop rubrics among search committees.</p>	<p>None</p>

15. Proactively provide students with resources related to research opportunities, internships, scholarships, professional and leadership development.	New DPS Student Success Center will be a hub for addressing these issues. Student affairs staff routinely advertise undergraduate research opportunities broadly to all majors. All sophomore physics majors have a faculty mentor assigned. UCSD-produced published research analysis has been added as part of some undergraduate course work.	Partner with Student Success Center to ensure that research and career opportunities are widely disseminated to all undergraduate and graduate students. Add relevant links to resources on physics website. Increase advertisement of existing resources in undergraduate classes.	UGCEP, Physics student affairs office, UG mentoring
21. Reform the qualifying exam process to include at a minimum agreed- upon and published syllabi for the core courses and hold faculty accountable for teaching the required material.	Qualifying exam removed, 1st year grad course syllabi determined, diagnostic exam implemented.	Iterate on exam model and evaluate predictive nature of this (GCEP)	GCEP, Graduate advising, Qualifying committee

**Table A8.2 : APS Recommendations with Efforts that are Currently Underway**

Full Recommendation	Status Update Aug 2020	Suggested next steps	Responsible Parties
1. The Department Chair should sponsor a departmental discussion on core institutional values including respect, fairness, quality, diversity, and inclusion, moderated by the Department's diversity committee. This report	EDI statement finalized and accepted. No discussion of core institutional values has taken place.	Publish EDI statement; complete EDI strategic plan and disseminate for feedback in department; Chair holds yearly/quarterly discussion of core institutional values as a full department town hall	Chair, Climate & EDI Committees, full Dept.

can be the starting point for this discussion.			
2. Regularize faculty meetings and use them as opportunities for enhancing communication within the Department.	Dept now has faculty meetings the first Tuesday of every month.	Clarify procedures for how faculty meetings are conducted; post minutes.	Chair
4. Ensure appropriately diverse representation on key departmental committees.	Chair takes diversity and inclusion into account in committee assignments, but there are constraints due to limited numbers of women and URM faculty available to serve. Committee assignments are reviewed by DPS Dean and Associate Dean for Equity, Diversity, and Inclusion, related to EDI issues.	Continue to monitor and track committee assignments to ensure continuing progress.	Chair, EDI Committee
13. Provide a dedicated study and meeting space for women students in physics.	UWIP has priority to use a specific room, though it is not completely dedicated for their use.	Ensure UWIP needs are and continue to be met.	EDI, UWIP Faculty Advisor, Space Comm
14. The Department should review current curricula and instructional approaches and consider changes in pedagogy and curricula to foster enhanced student success in physics.	Teaching faculty and PER interest lunches have been held, pedagogy seminars advertised. PHYS 500 (TA training course) incorporates diversity and inclusion training; support document for online learning created.	Integrate and engage TLC more in instructor development. Continue to review all courses from the perspectives of student success and diversity and inclusion.	EDI, CEP committees, PHYS 1/2/4 committees.

<p>16. Provide departmental support for activities aimed at women in physics including CUWiP, student women in physics groups, featuring women seminar speakers, and others to ensure appropriate mentoring and availability of role models for students.</p>	<p>Funding is now transparent and currently robust, and access of UWIP to space concerns has improved.</p>	<p>Coordinate departmental support with the Student Success Center to leverage those resources. Colloquium committee should obtain feedback from GWIP, UWIP on colloquium speakers.</p>	<p>EDI, UWIP Faculty advisor, GWIP Faculty advisor, Colloquium Committee, Chair</p>
<p>17. Require [graduate] admissions committee members to attend campus training on bias in admissions, and engage in a discussion moderated by the Department's diversity committee on strategies to remove bias while building graduate student cohorts that meet the broader needs of the Department.</p>	<p>Department enrolled in C-CIDE project in 2020.</p>	<p>Coordinate C-CIDE activities with Graduate Admissions committee and ensure continuity of admissions procedures. Implement mandatory Implicit Bias training and follow-up discussion (e.g., with LEAD Fellows)</p>	<p>Admissions, GCEP, EDI</p>
<p>18. Establish written procedures for making admissions decisions, and begin each cycle of admissions review with discussions of these procedures.</p>	<p>Graduate admissions procedures are reviewed by the DPS Dean each year.</p>	<p>Admissions procedures are incomplete and inconsistent across groups. Develop holistic review process, appropriate rubric, and consistent procedures following C-CIDE recommendations.</p>	<p>Admissions, GCEP, EDI, DPS EDI</p>

<p>20. Sponsor a discussion on how to bring [graduate] students up to the Department's academic standards if they do not have sufficient background (e.g., missing or weak undergraduate core courses).</p>	<p>Department has developed a diagnostic and placement process to help students address any deficiency in their preparation.</p>	<p>Department should evaluate the efficacy of the diagnostic and placement process, and its impact on diversity. Identify opportunities for improvement, especially those that would allow for recruiting and retaining a more diverse cohort of students.</p>	<p>GCEP, Grad advising, EDI</p>
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**Table A8.3 : APS Recommendations Awaiting Implementation**

Full Recommendation	Status Update Aug 2020	Suggested next steps	Responsible Parties
<p>3. Department Chair should promote open and transparent decision making processes and ensure that diverse viewpoints are represented in major decisions.</p>	<p>Department rules have been voted on, and appear on the faculty portal.</p>	<p>Enhance transparency of departmental procedures by clarifying processes governed by custom vs rules, considering the creation of a consolidated set of bylaws, and regularizing how committees report to the faculty as a whole and how committee recommendations are implemented. Advisory committee appointed by the Chair is tasked with communicating with groups, but this doesn't always happen.</p>	<p>Chair, Advisory committee, all other committees</p>

<p>7. Department Chair should sponsor listening sessions with women in the Department (faculty, staff, postdocs and students) once per quarter to gain a better understanding of the environment.</p>	<p>Meetings were held in AY 18-19 with women faculty, but not since then.</p>	<p>Re-establish regular meetings, perhaps two times per year as recommended in AY 18-19 by women faculty.</p>	<p>Chair</p>
<p>10. Department administration should proactively identify faculty for acceleration in their merits and promotions process and mentor them on compilation of their dossiers.</p>	<p>Physics committee on academic personnel has been constituted, and is responsible for helping the Chair identify candidates who should be considered for acceleration.</p>	<p>Enhance transparency of the membership and charge of the committee on academic personnel.</p>	<p>Chair, Academic Personnel Committee</p>
<p>19. Consider eliminating or reducing the importance of the Physics GRE in admissions decisions.</p>	<p>Historically, GCEP felt PGRE scores are an important factor to consider in admissions, but recommended no cutoffs be employed. No GRE scores will be available in AY 20-21.</p>	<p>In practice, it appears different groups used PGRE scores in different ways. Recommend the development of consistent holistic procedures following C-CIDE recommendations.</p>	<p>Admissions, GCEP, EDI, DPS EDI</p>