Physics Values Committee Report to the Visiting Committee
September 27, 2021

Summary of key points

1. In Summer 2020, the Physics Values Committee (PVC) underwent a major restructuring. The central objective of the PVC is now to advise the Department on structural and systemic issues pertaining to the Physics Community Values, rather than on ensuring individual community members uphold the values. (Pages 2-4)
2. We have identified nine broad classes of issues. (Page 5)
3. The class of issues in which the Visiting Committee (VC) has the greatest potential to make a long-lasting, wide-reaching, and deeply impactful change at this moment is in the recruitment and support of URM postdocs and faculty. **We make the following strong recommendation to the visiting committee, among others** (Pages 6-9)
    a. **That future Department reports to the VC include a section focused on Diversity, Equity, and Inclusion.** At minimum it should include: (1) Physics major and graduate student demographics, presented side-by-side with MIT-wide enrollment data. Staff demographics, including managers. Postdoc/faculty demographics side-by-side with nationwide PhD recipient demographics. (2) Changes to policies, procedures, and practices to improve equity.

    Additionally, we suggest that the visiting committee consider and explore in collaboration with the department and MIT leadership higher impact ways to improve the number of URM faculty and postdocs. Some ideas that have been floated within the PVC URM subgroup, which will be discussed and voted in general PVC meeting, include:
    b. **Formation of a URM postdoctoral prize fellowship** at the Department or School of Science level whose goals are to recruit the top URM scientists to MIT for their postdoctoral work.
    c. **A cluster hire** with the goal to increase URM and Black faculty members.
4. We include a major set of recommendations we issued, about staff issues. **We make three strong recommendations specifically to the Visiting Committee:** (Pages 10-11)
    a. **That the VC holds a session with staff in future visits.**
    b. **That the department encourages the department to hold annual reviews for all staff members.**
    c. **That the department re-evaluate staff compensation and position when their duties change significantly.** The rapidly evolving COVID-19 pandemic placed a huge burden on staff. Additionally, as new departmental needs specifically related to advising, DEI requiring staff input materialize, staff are often asked to take on additional roles.
5. **We strongly encourage the visiting committee to recommend the department hiring a DEI officer specifically for the physics department** (Page 11)
6. We briefly highlight the PVC's areas of focus for Fall 2021. (Page 11)

I. History and overview of the PVC

2014-2016: Recommendations from the Visiting Committee

In 2014, the Physics Department's VC noted that very few undergraduate and graduate students took advantage of the opportunity to have their opinions heard by this neutral third party. So in 2016, Department leadership had pre-meetings with student leadership to explain what a VC does, the benefit it can have for students, and how to talk to the committee to propound student needs. A number of active students took it upon themselves to hold further meetings to sharpen their concerns, and the VC reported significant problems with the culture of our undergraduate and graduate student bodies. Students reported widespread negativity, including regular disparaging remarks related to everything from gender, to the degree of difficulty in courses students were taking, to even the subfield of physics in which students worked. It was clear the department needed to make very visible and broad-based changes.

2017-2018: Creation of the Physics Values Statement (PVS)

Physics Department leadership immediately began a series of meetings with physics student leadership – such as the Physics Graduate Student Council (PGSC), the women in physics organizations (UWIP and GWIP), and physREFS – to discuss these problems and potential solutions. As these efforts gained momentum, many other students and staff joined in, and the Department held a community-wide town hall on January 25, 2017 to more broadly discuss our culture.

There were a number of specific issues that department leadership was able to begin addressing as soon as they came to light. For example, after hearing that students felt theoretical physics was emphasized too heavily over experiment in the curriculum, Professors Richard Milner and Christoph Paus launched a freshman-sophomore experimental course in spring 2018. Frank Wilczek, the sole theorist out of the seven Nobel Laureates who have been on the MIT physics faculty, taught an experimental course around color vision in Spring 2017 and IAP 2019. Staff members Cathy Modica, Emma Dunn, Libby Read from GECD, and Ellen Stahl from the Alumni Association began a series of career nights for alumni to talk about their diverse paths after a physics major.

But the Department's most notable action was to follow a recommendation of the VC and produce a code of conduct. During the 2016-2017 academic year, a group of about a dozen physics students, staff, and department leadership held nine meetings, facilitated by Libby Mahaffy from HR, to produce a draft code. During the 2017-2018 academic year, we decided to change the name of our code of conduct to the Physics Values Statement. The group split apart into two subcommittees – one focused on finalizing the code and creating posters for display, and the other tasked with developing and running training for community members about how to uphold the values. Our committee met ten times that year and hung finalized posters around department common areas over summer 2018.

2018-2020: Transition to a formal standing committee of the department

In the 2018-2019 school year, the Physics Department made the Physics Values Committee (PVC) a formal standing committee of the department which, among other things, means faculty get credit for serving on the committee. During this time, the PVC's work was split into four general tasks:

1. Managing a semi-annual Town Hall or Open Meeting to hear concerns, discuss topics of broad interest, as well as update the community on the PVC's progress
2. Developing and refining trainings to teach members of all cohorts in the Department to uphold the PVS as individuals,
3. Compiling a set of resources for physics community members to bring forth or find help solving problems, and
4. Developing mechanisms for the PVC to remain accountable to the community.

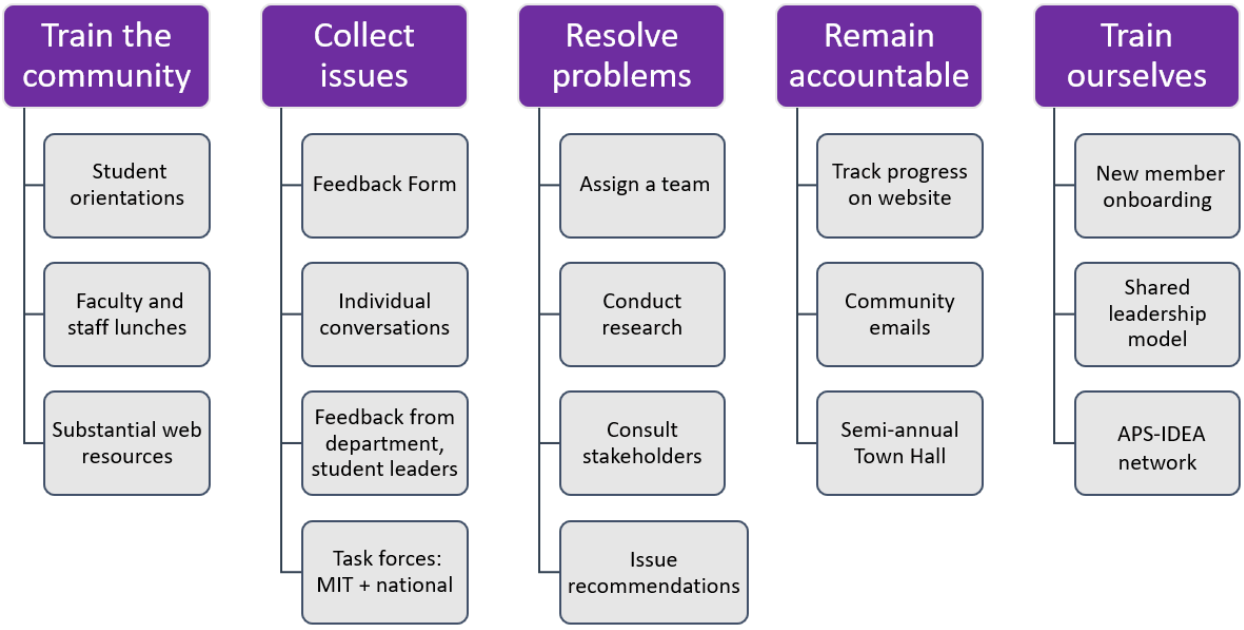
The first task mainly fell within the purview of full committee meetings; the latter tasks were completed by two separate teams: a Training Subcommittee, as well as a Resources & Accountability (R&A) Subcommittee. Over the course of the 2018-2019 and 2019-2020 academic years, the Training Subcommittee held seven Physics Values Workshops at student orientations, faculty lunches, and an evening event for students and postdocs. R&A developed a charter to outline all of the tasks it hoped to achieve, and then commenced on its work.

In Fall 2019, R&A decided to build a PVC website to host the information it was compiling. On the resources front, the website contains lists of helpful information, offices, and opportunities that all members of the community can access, ranging from reporting mechanisms, to health and wellness resources, to ways to get involved in improving our community. On the accountability front, the website includes all committee members' names and contact information, a private Feedback Form for community members to submit anonymous comments to the PVC, as well as details about past progress and current goals. After a break in operations due to the covid pandemic, the PVC officially launched its website on July 1, 2020.

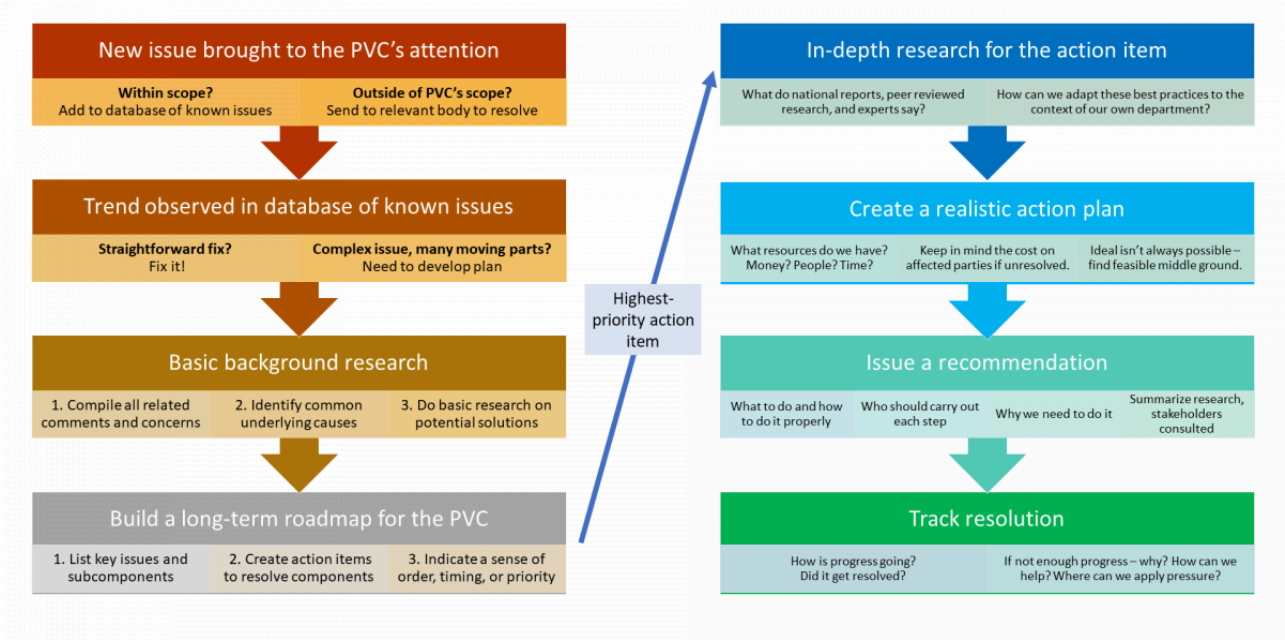
2020-present: Shift in focus to systemic issues:

The PVC initially focused on the actions of individual community members as they related to our values as a Department. In January 2020, as the R&A subcommittee neared fulfillment of its charge, the PVC created a new Recommendations and Actions Subcommittee to examine how the PVC could begin to address systemic and structural issues related to the PVS. In light of the Strike for Black Lives events held in our Divisions on June 10, 2020, we decided to place systemic issues within our Department at the forefront of the PVC's work and to address issues related to all constituencies, not just students; and we restructured the committee and its operations to best achieve this goal. In Summer 2020, the PVC also joined the American Physical Society's Inclusion, Diversity, and Equity Alliance (APS-IDEA).

Summary of PVC duties:



PVC issue resolution process:



II. Major classes of known issues

When the PVC underwent a restructuring in Summer 2020, we went through all of the documents in our committee's shared Google folder and made a spreadsheet of comments, concerns, and suggestions that had been brought to the attention of the PVC since its inception. These issues were brought to our attention during committee meetings, at community Town Halls, and in smaller conversations with the community. While many of the issues were small or individual in scope, due to the large number of distinct items brought to our attention — approximately 150 — we were able to spot a number of broader underlying trends:

(1) Increase representation and provide better support for URM and women physicists at all career stages.

(2) Staff are integral to carrying out many functions of the Department, yet their needs and workloads are often overlooked when planning and adding new initiatives. Need to also ensure staff have a voice in the Department, feel part of the community, and have their own workplace climate and culture issues addressed.

(3) Improve climate, culture, and interpersonal interactions to better align with our Physics Community Values. Because the Department is broken up into multiple disconnected divisions and offices, ensure each unit of the Department has structures in place to address local climate and culture issues. Ensure physical spaces are inclusive.

(4) Improve teaching, advising, and mentoring practices to set people up for success in their personal career goals while mitigating unnecessary stress. Increase clarity and give better guidance about norms and expectations for achieving success *specifically in research/academia* at all career stages, from undergraduates to junior faculty.

(5) Improve the working environment for department members with children and for staff/faculty with long commutes.

(6) Build community specifically among postdocs, who are far more transient than any other constituency and report feeling the most disconnected from the department

(7) Improve communication in the Department, both vertically and horizontally. That is, disseminating new information and providing transparency about how administrative decisions are made, as well as increasing interaction between different research divisions, administrative offices, and teaching units in the Department.

(8) Decrease specific financial stresses on students and postdocs

(9) Create a diversity, equity, and inclusion mission statement or statement of goals as a complement to the Physics Values Statement. Review two potential new Physics Community Values: service and communication.

III. Recruitment and support of URM postdocs and faculty

As part of our ongoing work to make departmental culture more diverse, equitable, inclusive, the PVC tasked a subgroup to compile recommendations regarding the recruitment, hiring, retention, and support of under-represented minority (URM) postdocs and faculty within the MIT physics department. These recommendations drew upon the department's Strike for Black Lives discussions in June 2020, information from our participation in APS-IDEA, research we have conducted into best practices, as well as examination of what is currently feasible and will be most impactful within our own specific department.

Against the backdrop of ongoing conversations about race within the United States and within academia specifically, it is clear that our department is far from achieving equal representation. Although representation of URMs within the overall population is around 30%, it is only 20% within undergraduate physics majors at MIT, and 14% within the incoming graduate class. URM faculty number less than 6% of MIT physics faculty, and we currently have zero Black faculty. This is a multifaceted problem: there is no one straightforward fix that will suffice to improve representation in physics. It will require significant and sustained effort across all career stages, and a comprehensive look at our Department policies, procedures, and practices.

Two student groups, SPS and PGSC, have already issued comprehensive plans regarding URM student recruitment and support. The PVC thus focused primarily on postdocs and faculty. We already issued a set of recommendations to Department leadership outlining lower effort, moderate impact changes we believe are easiest to implement on a short timescale (pages 6-9). We now issue a second set of recommendations to the Visiting Committee focused on a small number of high cost, high effort items that will make a far larger and long lasting impact on attracting the vast and clearly barely tapped pool of talented URM scientists to MIT, supporting their physics careers, and building the nation's pipeline (pages 9-10).

A. Low effort, moderate impact recommendations

We group the short-term recommendations into four categories, (1) broader advertising of postdoc and faculty positions, (2) ensuring a higher quality and quantity of URM visits to our department, (3) increasing URM support resources for postdocs and faculty, and (4) tracking URM hiring statistics more clearly to promote accountability and insight. We have intentionally left the specifics of money and time commitments up to the department's discretion.

Broader Advertising of Postdoc and Faculty Positions

- Curate a broad set of venues to advertise positions. Broadly advertising a position serves to both reach a wide applicant pool and also indicates a commitment to improving equity. In addition to conventional resources such as Physics Today, the department should identify venues that target URM applicants. At the postdoc level, the department should identify ways to get divisions or individual PIs to more broadly advertise positions, as the level of advertisement for postdoc positions varies significantly from subfield to subfield.
- Regularly host booths at URM-centered conferences. Having a steady and established presence at URM-centered workshops and conferences will extend our department's

reach into these communities as well as indicate our commitment to improving equity. Some examples of conferences the department target include but are not limited to the National Society of Black Physicists (NSBP), National Society of Hispanic Physicists (NSHP), and Society for the Advancement of Chicanos and Native Americans in Science (SACNAS). The department should offer concrete resources (i.e. funding) to send faculty or postdocs to these meetings to network and recruit URM candidates, as suggested below (see intellectual exchange with URM serving institutions below). The department can also leverage existing resources on campus, specifically in the OGE, to understand how to best approach URM recruitment at conferences. https://oge.mit.edu/graddiversity/recruitment/

- Leverage resources such as the current/former MLK Scholars and faculty at MSIs. Building bridges between our department and institutions/research groups which have promising URM candidates is an important step to growing our URM applicant pool. Using these resources early in the search process through direct connections will help to identify candidates and encourage their interest to our department. One example are the current and former MLK scholars that have had direct experience at MIT https://mlkscholars.mit.edu/scholars/all .

Ensuring Higher Quality and Quantity of URM Visits to Our Department

- Create incentives within the department to encourage more URM colloquium and seminar early-career speakers. Colloquia are not only a primary way we network with the greater scientific community, but also represent a significant way that the department amplifies the voice of certain scientists and their work. The department can use colloquiums to both diversify the range of scientists we invite to our campus and actively build relationships that can be leveraged for hiring postdocs or faculty. The department should offer funding for each division to bring in at least one URM speaker per semester to give a scientific talk. Additionally, the department should strongly encourage division heads to ensure as much diversity in their colloquium or seminar speakers as possible, incorporating women and URM scientists over the course of each semester.
- Establish clear, department wide guidelines for ensuring that all visitors, especially URM visitors have productive visits. Concretely, the department should create a 1-2 page document provided to all faculty members that serves as a base for a successful short- or long-term visit. Long-term visitors, such as MLK visiting scholars, should be fully incorporated into the MIT physics community. They should also have significant interaction and relationships with people outside their direct sponsor at MIT. Short-term visitors should be exposed to a representative cross-section of the MIT physics community, including students and postdocs. The department should consider leveraging existing resources on campus that provide guidance on conducting successful visits.
- Encourage intellectual exchange with URM serving institutions. Fostering connections is a crucial step towards bringing more URM faculty and postdocs to MIT. To enable these connections, the department should encourage faculty to attend URM centered

conferences, as well as visit and give talks at minority serving institutions (MSIs) by establishing a fund subsidising such visits. Furthermore, the department should consider efforts by faculty to reach out to URM serving institutions in hiring and promotion cases.

Increasing URM Support Resources

- Conduct regular meetings between existing URM and women faculty and department leadership to discuss possible ways the department can improve specific support for URM and women faculty. These meetings (which may already happen informally) can be a way for department leadership to quickly and easily provide support individually to URM and women faculty should they feel they need it. Additionally, these meetings should be optional for the URM and women faculty members and should not be an extra responsibility or burden, rather a way to easily ask for help and support.
- Improve departmental resources and information for URMs. The department and PVC websites need updates with DEI resources and progress. These sites are especially sparse for faculty and postdocs. Additionally, the department should improve the information given to visitors by following the examples of the Black in Physics Week and PGSC grad student visit handouts. For postdocs specifically, the department should provide more information given that often postdocs lack a centralized source of information about their experience at MIT.
- Ensure that URM postdocs get comprehensive mentorship. Additional mentors increase the sense of belonging in a community and serve to balance a strained primary mentor relationship. The department should start a program automatically matching URM postdocs to a second (potentially non-research) mentor, which the postdoc can opt in to.
- Institutionalize the current good practices to ensure continuity in the long term. Where the department currently has informal practices to support URM and women physics faculty that are not explicitly codified, these policies should be codified to ensure that they extend past the term of office of current department leadership. For example, it was the impression of one faculty member that department leadership is actively monitoring service loads for junior faculty and working to ensure that junior URM and women faculty are not overburdened for the sake of increased diversity on committees. This is valuable and makes for a much more supportive environment, compared to other institutions where similar practices are not in place. As changes are made with regards to policies that increase URM support and retention, they can be added to the list of things that future department leaders should continue.

Tracking URM Hiring Statistics

- Create a centralized and up-to-date database of postdoc hiring statistics across all the divisions within the department. Given that most postdocs within the department are hired at the research lab or division level, the hiring processes and statistics are not broadly known. In order to improve the number of URM postdocs, the department should have a good understanding of how many URM candidates are applying for postdoc positions, how many of them were offered and accepted them, and how many are

currently working within the department. The department could thus understand the long term trends and areas of specific need.

- Make URM hiring statistics at the postdoc and faculty level a central part of the Visiting Committee report. Since the Visiting Committee plays an important part in creating change and accountability within the department, the PVC believes that department leadership should provide a clear subreport to the Visiting Committee on the situation of URM postdocs and faculty within the department and whether it has changed since the last Visiting Committee. This subreport should also discuss departmental efforts and policy to increase the representation of URM postdocs and faculty, as well as an evaluation of the success of these policies.

B. High impact, high effort suggestions

Longstanding, deep-seated issues of diversity, equity, and inclusion within the field of physics and our country as a whole cannot be solved with small actions alone. Impactful change will require a large, sustained investment of resources: a considerable commitment of faculty and staff time, a substantial amount of effort, and significant monetary expenses. These expenditures are worthwhile and indeed necessary: MIT Physics is among the most prestigious physics programs in the entire world, and has a deep influence on our whole field's culture and values. Moreover, we are gatekeepers; consciously or not, we play a crucial role in determining who are our field's practitioners. Respect for others; collaboration, mentorship, and inclusion of all; and the well-being of our field are among the values we hold deeply. We need to ensure we uphold these values in how we build the pipeline coming through MIT Physics. The PVC URM subgroup has discussed the following long-term, high impact possibilities.

(1) The creation of a prestigious Postdoctoral Prize Fellowship program at the Department or School of Science level geared towards fostering diversity, equity, and inclusion, as well as building the pipeline of URM scientists. This program should fund multiple URM postdocs per year at the same level as other competitive fellowships (e.g. Pappalardo), as well as include career support resources, additional mentorship, and a community-building component to foster a strong community of URM scientists at MIT.

(2) A cluster hire to increase URM representation at the faculty level. Work with diversity, equity, and inclusion (DEI) staff at MIT to implement best practices to support and retain new URM faculty: in terms of their physics research, department climate and culture, as well as in light of the DEI service work and unrecognized mentorship of marginalized students that underrepresented faculty often disproportionately carry out.

(3) The creation of a Rising Stars-type program for URM physicists. This serves the dual function of building the nationwide pipeline by providing prospective postdoctoral scholars with important career advising, networking, and support resources. This also builds the MIT pipeline at the postdoctoral and faculty levels by exposing our faculty to talented URM candidates, as well as exposing talented candidates to opportunities available at MIT.

IV. Recommendation on Staff Training and Management

The Training and Management subgroup of PVC, which is composed of staff, met to discuss their experiences within the Department of Physics. This discussion, similar to the Quality of Life Survey, exposed feelings of exclusion, the constant pressure to work harder than others, and that overall job satisfaction is relatively low. These sentiments are significant, especially considering the number of staff members that work in the Department. The subgroup members at the meeting were in agreement with the following suggestions:

- Training should be required for all managers, specifically training on workplace bullying, active listening, cultural sensitivity, white privilege, and leadership.
- Training should be offered (parallel structure?) for non-managerial staff, such as cultural sensitivity, white privilege, professional development and speaking with confidence.

As a result of the conversation on training many questions arose, such as: what is HR's responsibility in hosting, conducting, and/or encouraging training? Who will hold the managers accountable for taking training(s) and implementing new practices? How will this impact job responsibilities and staff evaluations? Should we have two separate monthly staff meetings, one related to staff issues, and the other related to departmental matters, or would this be considered a duplication, as the SoS already hosts staff lunches?

Additionally, the following was acknowledged:

- Many of the staff within the Department have secondary degrees, and are taking on additional responsibilities, without recognition or reclassification of their position;
- Many of the staff within the Department are predominately white men and women;
- Staff do not feel comfortable raising concerns through channels at MIT (see QOL survey, only 67% feel comfortable raising concerns through channels at MIT and 54% feel like MIT would take reports of unethical conduct seriously); and
- Lastly, there is only one woman of color in a managerial role.

This highlights the quality of staff, but also recognizes the stark differences in privilege, access, and recognition within the Department, and the desire to continue to foster allyship within the unit.

On our own, we are able to grow and share individually, and support one another when sought out. However our concerns stem from a lack of consistent and equitable managerial support, as a unit. Topics discussed were:

- As a unit, how do we grow together?
- How can we be brave enough to vocalize acts of bigotry?
- How can we praise colleagues without insinuating favoritism?

- How do we hold our AO and HR responsible for ensuring that staff morale increases?
- What is the process when our job responsibilities increase without compensation?

In conclusion, we would like to ask Department Leadership to encourage training for managers, provide access to all staff to pursue training and/or professional development, in hopes that this improves the climate and culture for the staff in the Department of Physics. In addition to the training suggested, our other recommendations include:

- Creating the Physics Department Faculty and Staff handbook to outline responsibilities and best practices for managers;
- Training and evaluation from a non-MIT source;
- Staff recognition on Physics' website; and
- Annual staff reviews.

V. Hiring of a Physics Department DEI Officer

The MIT Physics department has unique cultural and climate issues that in the past have led to inferior environments for students with marginalized identities. Although the PVC has done much to counter such cultural and climate issues, **a committee of volunteers is not sufficient to put in the necessary time and effort into structurally changing our department**. The inclusion of a diversity officer at the department level is one way to counter such phenomena. We have seen many universities and departments within MIT take this approach and improve attrition rates among marginalized students, and the physics department must follow suit. We hope that this position would report to ICEO as well as the Assistant Dean for DEI within the School of Science to ensure departmental accountability toward internal goals at the Institute and School of Science levels. By cultivating personal relationships with students and understanding the nuances of our department, diversity officers will develop a local climate of inclusivity that will broadly foster diversity and equity.

VI. PVC Areas of Focus in Fall 2021

For the Fall 2021 semester, the PVC plans three activities: (1) continuing to carry out regular tasks such as holding trainings for new students, (2) following up with Department Leadership on previously issued recommendations, as well as (3) working in subgroups on three topics:

- Learning about and resolving common issues faced by junior faculty
- Creating a set of graduate advising guidelines (per a charge Peter Fisher issued to PVC)
- Improving recruitment of URM and womxn undergraduate physics majors.