

Harvard John A. Paulson School of Engineering and Applied Sciences



Report of the SEAS Diversity Task Force

JUNE 2017

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INTRODUCTION

Members of the SEAS Diversity Task Force



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The Mission of SEAS

“Through teaching and collaborative research, SEAS discovers, designs and creates novel technologies and approaches to societal challenges—in service to the world, the nation, and our community. We bridge disciplines, both within engineering and the applied sciences and beyond, to prepare broadly trained leaders, to advance foundational science, and to achieve translational impact.”

Task Force Charge

In fall 2016, President Faust convened a University-wide Task Force on Inclusion and Belonging. Its charge reads, in part, “A community that draws on the widest possible pool of talent, one that fully embraces individuals from varied backgrounds, cultures, races, identities, life experiences, perspectives, beliefs, and values, is a more just community. It is also an environment in which learning, creativity, and discovery can flourish. Harvard aspires to be such a place. Diversity, inclusion, and belonging are not incidental concerns; they are fundamental to Harvard’s mission and identity.” In spring 2017, Dean Doyle convened the SEAS Diversity Task Force, whose charge is to examine our current diversity ethos and suggest how we may improve it, as well as serve as a conduit to the University’s Task Force. The SEAS Diversity Task Force convened several times throughout the spring of 2017 to discuss diversity, inclusion, and belonging within the SEAS community.

The data and other information provided in this report show that SEAS has both significant challenges and opportunities in the area of diversity across all areas of our community. To echo President Faust in her charge to the University committee, we believe that a truly diverse and broadly-represented community enables and fosters a sense of inclusion and belonging. In this report, we discuss the steps and initiatives we currently have in place to increase both female and underrepresented minority representation in the undergraduate and graduate student populations, faculty and researcher groups, and in our staff. We also present our recommendations for immediate and long-term enhancements, initiatives, and programs designed to improve not only diversity but also to instill and nurture inclusion and belonging in the SEAS community. As we look forward to our move Allston in 2020, and with the momentum of the University’s initiative, now is the time to devote our resources, energy, and dedication to this important topic.

FINDINGS

Programs at Peer Institutions

The SEAS Task Force found several programs at peer and other institutions, as well as within Harvard, that can serve as models for a diversity and inclusion plan at SEAS. Many peer institutions employ strategies such as: targeted recruitment of prospective graduate students via conferences, junior faculty mentoring, partnering with a central university diversity office, supporting student affinity groups and undergraduate professional societies, and using undergraduate summer research programs for recruitment. Many of these institutions have dedicated and visible staff that implement and support these initiatives. Several institutions and organizations have developed robust programs that include rigorous evaluation; these initiatives, listed below, are recommended for further study as SEAS develops its strategic plan for diversity and inclusion:

- Meyerhoff Scholars Program (undergraduate) at University of Maryland – Baltimore County
- Harvard T.H. Chan School of Public Health strategic plan for diversity and inclusion
- Fisk-Vanderbilt Master’s-to-PhD Bridge Program
- MIT Interphase EDGE program for MIT students
- MIT CONVERGE weekend program for grad applicants
- American Physical Society Bridge to PhD program (several universities)

Several peer engineering schools have dedicated offices that focus on diversity programs. These offices employ various staffing and structural models:

- **Stanford Engineering Diversity Programs** (includes pre-college, undergraduate, graduate, and post-doctoral): <https://engineering.stanford.edu/students/engineering-diversity-programs>.
- **MIT** organizes diversity initiatives across several offices
 - Office of Engineering Outreach Programs (K12 only): <http://oeop.mit.edu/>
 - Office of Minority Education (undergraduate): <http://ome.mit.edu/>
 - Office of the Dean for Graduate Education (undergraduate research, CONVERGE, VERGE, mentoring): <http://odge.mit.edu/undergraduate/>
- **Cornell Diversity Programs in Engineering** (K-12, undergraduate, graduate, postdoc, includes partnerships with industry, foundations): www.engineering.cornell.edu/engdiversity/

Most of these resources and initiatives focus on diversity and inclusion for students, researchers, and faculty, and do not address diversity and inclusion at the staff level. As a starting point for addressing diversity at the staff level, the research by Harvard sociologist Frank Dobbin on evidence-based approaches to diversity management is recommended: <https://scholar.harvard.edu/dobbin/home>.

Current Efforts on Inclusion and Belonging at SEAS

I) Undergraduate Underrepresented Minorities

The Harvard John A. Paulson School of Engineering and Applied Sciences (SEAS) works in conjunction with both the Harvard College Admissions Office and the Advising Programs Office to ensure that all students who indicated interest in any of the SEAS concentration areas are given the proper tools and advice to successfully complete the degree. Unlike other engineering programs, Harvard students do not “apply” to our program. Instead, SEAS utilizes a variety of outreach strategies and large scale advising events to reach a broader scope of students, whether they were fully aware of any interest in engineering and applied sciences, or not. Historically, this broad strategy served as the main method to welcome and better serve undergraduate women and students from historically underrepresented backgrounds. Over the past year, SEAS has engaged in more targeted efforts (listed below) to both recruit and retain a diverse community of students, including efforts to address the gender gap in some SEAS areas.

Partnership between Computer Science and the National Center for Women & IT (NCWIT)

In the spring of 2016, a committee was created to address Diversity in Computer Science (CS) with financial support from the National Center for Women & IT. The CS Diversity Committee was composed of faculty, administrators and students, interested in creating a recruitment and retention plan, largely focused on increasing the number of women in Computer Science. Most of the students on the committee

are or were involved in the Women in Computer Science (WiCS) student organization, specifically as members of the Advocacy Council that works to collect and analyze data on this gender gap on a regular basis. The committee, chaired by Professor Jim Waldo, met monthly. Some efforts that came out of this committee's work were:

- Targeted matching of freshman women with CS interest with CS faculty members
- Circulated resources for CS faculty to learn more about implicit bias and to implement 'blind grading' in their courses
- Funding for students to request coffee chats with faculty in addition to regular office hours
- Funding for additional pay to CS TF's participating in additional P-Set (Problem Set) nights hosted by WiCS as another resource and potential community builder for CS students

Targeted Conference Funding from the Anne Popkins Diversity and Innovation Fund

Thanks to the efforts of Professor Radhika Nagpal to secure grant funding from the Anne Popkins Diversity and Innovation Fund, SEAS has been able to fund student travel to attend the Grace Hopper Conference and Tapia Conference, along with travel for faculty and administrative staff focused on graduate recruiting. SEAS will be able to send interested CS (and Applied Math) students to both conferences for the next four years with the funds from this grant.

- **Grace Hopper:** In the fall of 2016, WiCS sent 40 female students to the Grace Hopper Conference, along with faculty member Harry Lewis. Since 2012, the WiCS leadership has traditionally relied on securing several sources of funding to send a large group of CS women to Grace Hopper, but for the next four years the group can use funding specifically set aside for this purpose. Additional funding will likely be used to send interested SEAS faculty, staff members or graduate students, to also support graduate recruitment efforts.
- **Tapia Conference:** In the fall of 2016, SEAS coordinated efforts to send a group of nine Harvard students, along with Professor Jelani Nelson, and a staff member to the Tapia Conference. The last time a Harvard group attended this conference was in 2015 when it was hosted in Boston. Moving forward, Harvard will continue to send a group of 9-12 students, 1-2 faculty members and 1-2 staff members to this conference for graduate recruitment. Professor James Mickens will keynote the 2017 Tapia Conference and Professor Stephen Chong will attend with a group of select Computer Science and Applied Mathematics undergraduates.

Women in Computer Science (WiCS)

Outside of their work with the CS Diversity Committee in developing strategies to diversify the SEAS student population, WiCS aims to make the Computer Science community more accessible to women through methods such as:

- Contacting pre-frosh women who are admitted through Early Action and Regular Decision admission cycles
- Hosting Live Q sessions at the start of each semester during shopping week to advise on course selections
- Hosting P-Set (Problem Set) nights throughout the academic year as additional support to students
- Staffing various SEAS or CS fairs to advise on the concentration, course sequencing and advertise the friendly community

- Organizing the logistics for Harvard to send 30+ women to the Grace Hopper Conference each year (noted above)
- Annual initiatives such as the Girls Who Code Chapter and WE Code Conference, which are aimed to inspire various generations of women (middle school through college) to pursue CS academia and careers in the field

Establishment of SEAS Affinity Groups

This year we have worked closely with representatives from the Society of Women Engineers (SWE), the Society of Hispanic Professional Engineers (SHPE), and the Harvard Society of Black Scientists and Engineers (HSBSE) to assess the needs of underrepresented students at Harvard and support student efforts to create national chapters at Harvard University. Each group has initiated separate efforts to create nationally affiliated chapters of these organizations, in order to help both recruit and retain students who have been historically underrepresented at Harvard and SEAS.

- **Society of Women Engineers (SWE):** SWE has undergone three leadership changes since initiating an interest group in 2015 and also had a change in faculty advisors this past year. One of the main barriers for groups to become a national chapter has been the requirement to have at least 10 registered members with the national SWE each year. Of the current board, only four students are current paying members. They will need to secure 10 registered members to move from an interest group to part of the national organization. Some examples of programming hosted by this group include:
 - October: "Intro to Autodesk Fusion" workshop
 - November: SWE study break
 - January: End-of-the-year social with HURC
- **Society of Hispanic Professional Engineers (SHPE):** SHPE started efforts as an interest group in the fall of 2016 after making a request to send two SHPE members, Daisy Evariz (2020) and Cesar Maeda (2017), to attend the National SHPE Conference from November 2-4, 2016. Both students were able to network and raise the visibility of SEAS with recruiters who are specifically looking to recruit URM students for their internship and full-time positions. Since the conference, both students developed a corporate database to email for potential sponsorships and recruiting events, and initiated programming at SEAS to get interested members involved. SHPE has submitted an application to become an official chapter through SEAS in February 2017, which was approved in May 2017. Some examples of programming hosted by this group include:
 - February: Introductory Meeting, Sophomore Convocation Tabling, Social Outing, Engineering Skills Workshops and Resume Building Workshops
 - March: Networking Workshops, Company Presentations and a Harvard alumni talk
 - April: MIT Career Fair, Engineering Skills Workshop, Networking Event and Company Presentation, Co-sponsored Bridge Building Event at Visitas, Visitas Open House Tabling, End of Year Celebration
- **National Society of Black Engineers (NSBE):** HSBSE initiated a member survey in the summer of 2016 to determine if there was any interest in a NSBE chapter. In the spring of 2017, Sayo Eweje (2019) and Michael Opara (2019) attended the Regional NSBE Conference from March 29 – April 1. During the conference, they were able to attend sessions to learn more about the NSBE hierarchy, and were able to make connections with chapter presidents from Columbia and MIT. They also met the New England Zone Chair, who later advised them on their

proposal for the Harvard NSBE chapter. The Harvard NSBE board submitted a collegiate chapter application in April 2017, which was approved in May 2017. Some examples of programming hosted by this group include:

- P-Set (Problem Set) nights every two weeks on Mondays
- Mentoring Program that pairs underclassmen with upperclassmen and all interested members with professionals in their field
- November: Summer opportunities fair
- February: Sophomore Convocation Tabling
- March: Pre-med to Med Panel, NSBE member recruitment event
- April: Grad School Panel, Science event with 8th graders, Co-sponsored Bridge Building Event at Visitas, Visitas Open House Tabling

II) Graduate Underrepresented Minorities

SEAS works in conjunction with the Graduate School of Arts & Sciences, and their Office of Diversity and Minority Affairs, to continue to expand the pool of talented students applying to graduate school, including graduate programs at SEAS. Unlike the undergraduate admissions process, the individual Harvard areas manage the graduate admissions process, which allows our staff and faculty to implement strategies around the recruitment, support and retention of students from historically underrepresented backgrounds.

Recruitment

- **Research Experience for Undergraduates (REU) Program:** This paid summer internship experience (including housing) exposes a broader spectrum of undergraduates to bioengineering, materials research, nanoscience, computer science, computational science, and engineering. Funded by various NSF grants and Harvard Institutes, the REU program provides its interns with a coordinated, educational and dynamic research community to inspire and encourage them to continue on to graduate school. REU has successfully recruited 40 students to Harvard since 2003 – 12 minorities and 27 women. The program has also grown from 30 students in 2004 to between 85 and 100 students in recent years, and is generally comprised of 50% women and 30% students from underrepresented groups. This program also focuses on recruitment of military veterans.
- **Recruitment at Conferences:** Beginning in 2010, SEAS has sent representatives, either independently or as a part of the Harvard Integrated Life Science Group organized through GSAS, to attend the following annual conferences: *Association for Computing Machinery (ACM) Richard Tapia Celebration of Diversity in Computing*; *Society Advancing Chicanos and Native Americans in Science (SACNAS) National Conference*; *Annual Biomedical Research Conference for Minority Students (ABRCRMS)*; *American Indian Science and Engineering Society (AISES)*; *Emerging Researchers National Conference in STEM*. In collaboration with the Department of Physics, Professor Vinothan Manoharan also leads a recruiting group at the National Society of Black Physicists (historically since 2004, this group included faculty, staff, and students). In 2016, two graduate students at SEAS attended SACNAS with staff members Christina Zaldaña and Kathryn Hollar, and one SEAS graduate student attended AISES with the Harvard University Native American Program. During these trips, representatives have the opportunity to discuss and explain SEAS graduate and summer programs to institutional peers, as well as prospective students from various cultural backgrounds and academic experiences. Currently, the Tapia Conference is the only conference where both SEAS faculty and graduate students actively participate, along with SEAS representatives, at the conference fair recruitment tables. Additionally, SEAS has sent representatives to present at Howard University, a historically black college, and Gallaudet University, a university designed to be barrier-free for deaf

and hard of hearing students, as way to identify and recruit additional talented students from historically underrepresented backgrounds.

Admissions

- ***Admissions Diversity Subcommittee:*** In Fall 2011, SEAS created a diversity subcommittee that includes a panel of faculty whose role is to bring talented underrepresented minority applicants to the attention of potential advisors. For the entering class of Fall 2017, 27% of applications to the Ph.D. program were from women and 4.3% were from underrepresented minorities. Environmental Science and Engineering had the highest yield for URM admitted students.
- ***Diversity Dinner during SEAS Open House:*** As a part of the SEAS Open House, SEAS hosts a Diversity Dinner for self-identified URM admits each year. The goals of the dinner are to connect new admits to current PhD students who also self-identify as URM, as well as interested faculty, to discuss the current community and supports that exist on campus.

Retention

- ***SEAS & Physics Diversity Socials:*** The SEAS Diversity Dinner that takes place during the Open House is only one of the social get-togethers that SEAS sponsors for the URM community. SEAS hosts and invites self-identified URM graduate students to monthly socials with in collaboration with the Physics department in service of expanding the small URM community in STEM at Harvard.

III) Faculty Diversity Efforts

The University and SEAS are committed to increasing diversity in the faculty and the University has initiated several programs designed to give administrators and search committees tools and resources to maximize our efforts in this area. The Office of the Provost and the FAS Office for Faculty Affairs have developed detailed documents, distributed to all faculty search committees, on how to conduct successful searches. They provide guidance on how to develop diverse candidate pools and follow best practice throughout the search process. Staff and faculty experts are also available to meet directly with search committee chairs and committee members to discuss strategies for ensuring that diversity concerns are addressed throughout the search process. Parallel to these efforts, SEAS has in place a junior faculty mentoring program that pairs each junior faculty with a group of senior faculty mentors.

As our data show, we have made incremental progress but we must continue and increase our efforts to develop diverse candidate pools for both ladder and non-ladder faculty, and seek out targets of opportunity in senior hires. Leadership in this area must come from the faculty and from senior leadership in SEAS, and we are fortunate that Dean Doyle and senior leadership have set faculty diversity as a high priority.

IV) Researchers

As the only area of hiring which is under the sole control of the faculty, senior leadership – including those at the University level – are best positioned to effectively communicate to the faculty the value of diversity in this vital population. We should incentivize adoption of best practices in order to influence the overall hiring process and encourage the development of diverse candidate pools for researchers, especially postdoctoral fellows and research associates. A recently conducted climate survey of the SEAS postdoctoral fellows will give us feedback and data across a number of areas, including mentoring, professional development concerns, sense of community, and other issues important to this population.

V) Staff

Recruitment and retention of women and underrepresented minorities is a priority of the SEAS Office for Human Resources. It is part of the office's Mission and Vision.

The primary source of diverse candidate pools for staff positions comes from outreach conducted for open positions that have University Affirmative Action goals as identified by the Office of the Assistant to the President. SEAS advertise these positions on websites of professional associations and publications targeted to women and minorities. Examples include: Women in Technology, National Society for Black Engineers and Latinos in Higher Education. This combined with a number of aggregator websites that automatically post all Harvard openings often results in attracting diverse candidates.

The Office for Human Resources also participates in job fairs targeted to females, minorities, veterans and the disabled and has established relationships with targeted community groups. In 2017, the Office also created a SEAS HR Twitter account to expand outreach efforts.

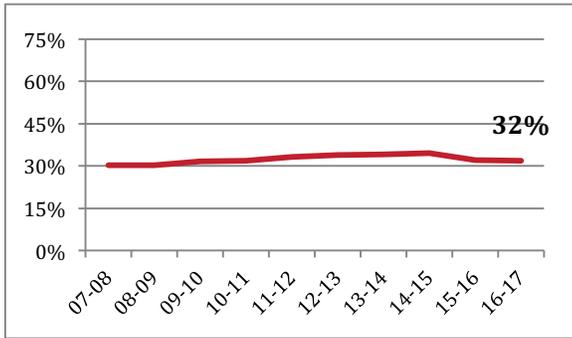
One unique way SEAS celebrate staff diversity is through a series of pictures highlighting the wide variety of backgrounds of our staff. The pictures hang in Pierce Hall and 20 University Road. We have also posted them on the SEAS HR website so that prospective job applicants can see them: <https://www.seas.harvard.edu/human-resources/meet-some-people-who-work-at-seas>.

During FY17, a total of 45 SEAS staff have either been hired or promoted. Of these employees, 26 of them have been female and 12 have been minorities.

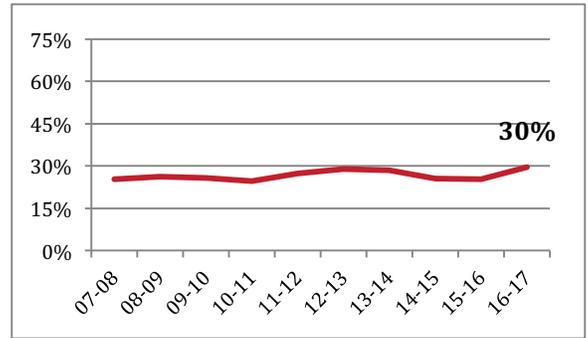
Current Institutional Data on Diversity within SEAS

Diversity at SEAS: Women

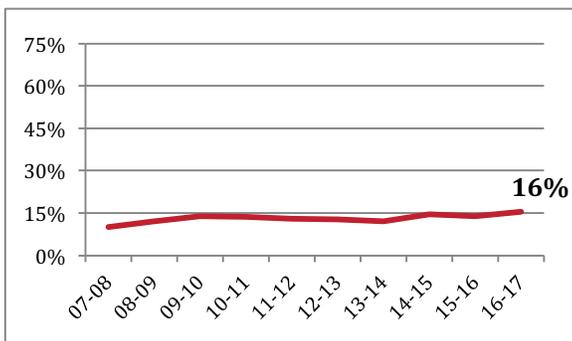
Undergraduate Students



Graduate Students



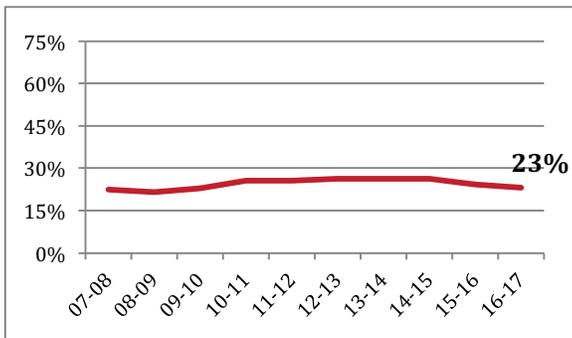
Ladder Faculty



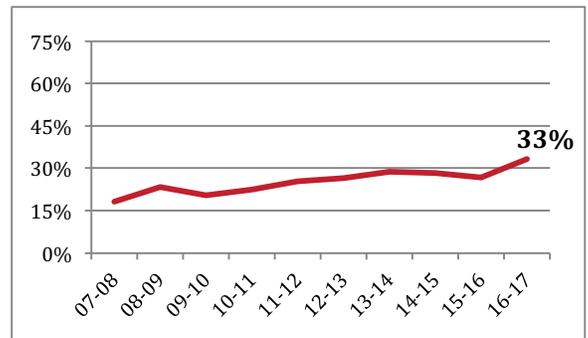
Non-Ladder Faculty



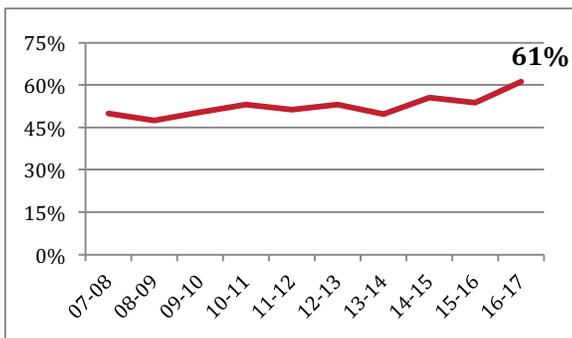
Post-Docs



Other Researchers



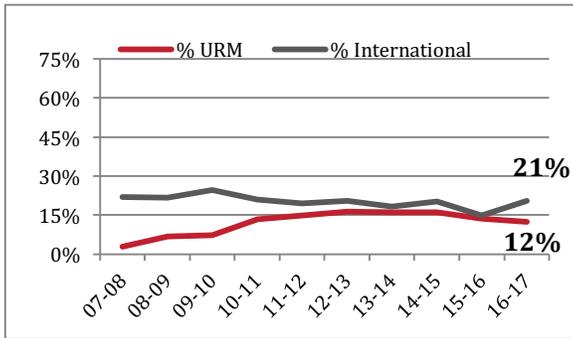
Staff



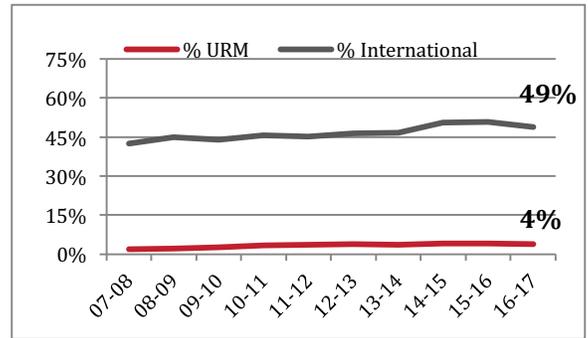
*AY07-08 to AY15-16 Data as of 6/30. AY16-17 Data as of 5/30.

Diversity at SEAS: Underrepresented Minorities

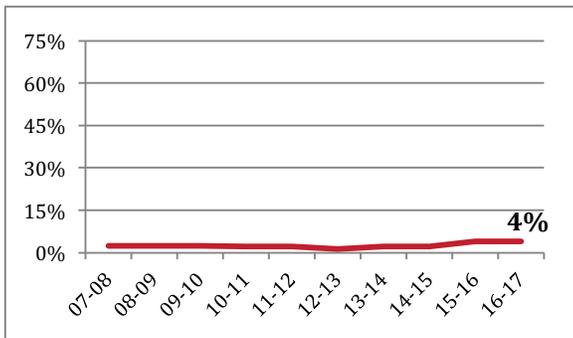
Undergraduate Students



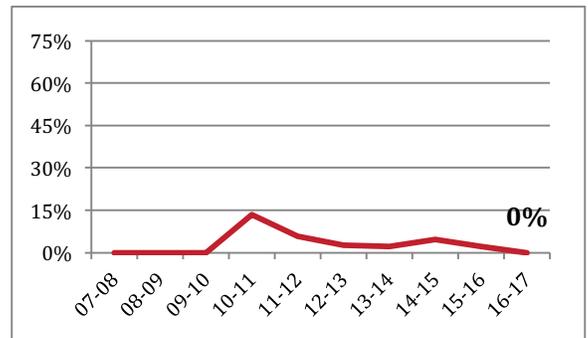
Graduate Students



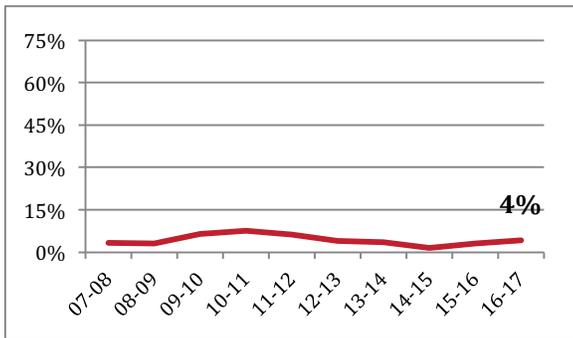
Ladder Faculty



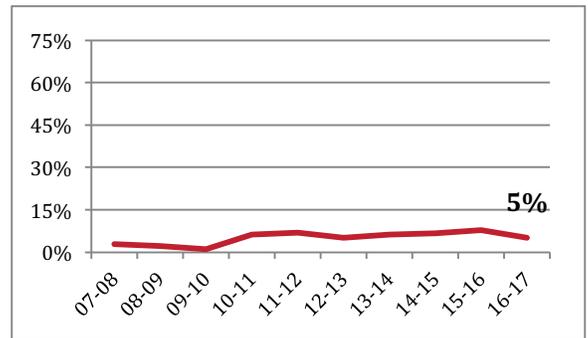
Non-Ladder Faculty



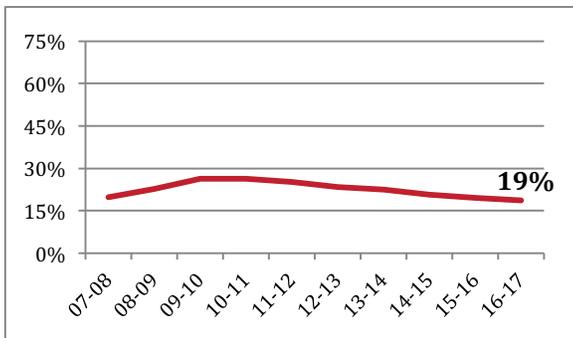
Post-Docs



Other Researchers



Staff



Underrepresented Minority Definitions

- ❖ **Undergraduate/Graduate Students, Faculty, Post-docs, and Researchers:** This figure represents the total number of persons who designate their ethnicity to be one of the following: American Indian or Alaska Native, Black/African American, Hispanic, or Pacific Islander or Native Hawaiian. These counts do not include international persons (international students are shown by the grey graph line).
- ❖ **Staff:** Any persons self-defined as non-white.

*AY07-08 to AY15-16 Data as of 6/30. AY16-17 Data as of 5/30.

SUMMARY OF RECOMMENDATIONS

In addition to several traditional meetings, the Task Force participated in a lengthy categorization and brainstorming session. In order to readily classify the multiple ideas generated from our previous sessions, we used a ranking system that classified each idea as low or high cost and low or high effort. This helped us assess which of our recommendations could be implemented immediately and which represented more time, effort, planning, and budgetary constraints.

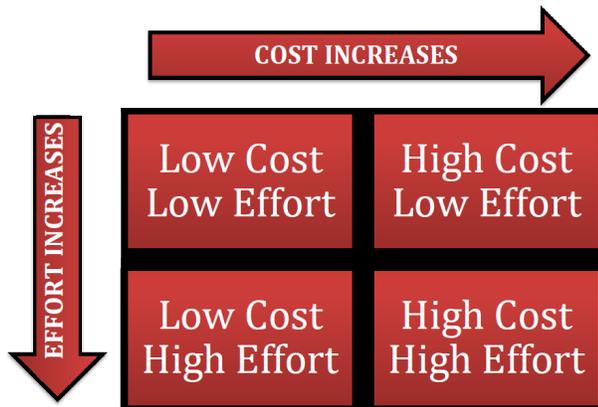


Figure: Method used for categorizing recommendations.

By using this grid system, we were able to easily identify which tasks required the most time and effort and categorized our recommendations as such. In the sections below are the ideas (both short- and long-term recommendations) that we thought would have the greatest impact and value to the greater SEAS community.

Though below is a sampling of all the recommendations, the full list of ideas and recommendations generated by the Diversity Task

Force can be found in Appendix A located at the end of this document.

RECOMMENDATIONS FOR IMMEDIATE ACTION

Include Diversity, Inclusion, and Belonging as a School Goal

Target Audience: All SEAS

Description: Specifically list diversity, inclusion, and belonging among the goals for SEAS to signal support from the highest levels and to encourage each member of the community to consider their role in this effort. By listing this as a stated goal, we hope to attract, recruit, and retain a diverse body and engage everyone in the efforts to foster a community that is inclusive for all.

Dean's Online Video

Target Audience: All SEAS

Description: Video of the Dean speaking about diversity, inclusion and belonging, to be posted on the SEAS website.

Diversity and Women in Science Dialogues

Target Audience: All SEAS

Description: A speaker series, possibly grant funded by the Dean's office, where notable women or persons with a diverse background in science in the various areas that belong to our School are brought in to speak about their experiences and about their career. We believe it is very important for students, especially undergraduates, to see women and people from diverse backgrounds in science with engaging and successful careers. Most speaker series are dominated by mainly male-led sessions and it would be encouraging and inspiring to focus solely on the advancements that women have made to the field of Engineering and Applied Sciences. Activities are planned around the visit and could be advertised in INSIDE SEAS.

Collaborate with Harvard University Native American Program

Target Audience: All SEAS

Description: Work with HUNAP leadership and students to identify areas of collaboration in courses, recruitment and retention strategies, grant-writing, and resources for students. Kathryn Hollar has been working with HUNAP for the past 2 years on student support and grant-writing activities, which can be expanded.

Review and Leverage Harvard T.H. Chan School of Public Health's Strategic D&I Plan

Target Audience: All SEAS

Description: The Harvard Chan School offers a model of campus diversity initiatives and infrastructure from which SEAS can learn. In 2015, they published the [HSPH Dean's Diversity Report](#) which has evolved into an Annual Report on Diversity and Inclusion. The 2017 report can be found [here](#). A dedicated Diversity and Inclusion office of five supports a community of more than 3,500¹ at the Chan School. In comparison, SEAS has no dedicated office of Diversity and Inclusion to support our community of more than 2,200². The Chan School's efforts are supported, coordinated and advertised via a well-developed [website](#). In 2016, they conducted a rigorous quantitative and qualitative diversity and inclusion [campus climate assessment](#) to inform their efforts. Some of the Chan School interventions include funded D&I fellowships, a high school research program, StatStart at Harvard, to increase the pipeline of underrepresented youth prepared for scholarship in biostatistics, a dialogue series, robust community engagement and an innovative [60 second lecture series](#). We will invite a representative from HSPH to meet with the Diversity Task Force to guide us in our efforts to create a more inclusive community at SEAS.

Develop and Disseminate Diversity, Inclusion and Belonging Databases/Sources

Target Audience: All SEAS

Description: The development of a SEAS specific database on diversity, inclusion and belonging would greatly benefit the community. Not only would it enable us to specifically track data points to gauge how we are performing, our data would also promote changes within the areas. By providing area level administration more data on how they are performing in reference to their peers, they would be able to drive efforts to create communities of inclusion that would roll up into the greater SEAS community. Research also shows that providing transparent data to managers has a positive effect on increasing diversity. Having routine surveys administrated will enable leadership to make changes based on data and feedback from the community at large.

Hire Administrative Fellow to Develop Long-term Interventions (currently in progress)

Target Audience: All SEAS

Description: The Fellow would focus on implementing a climate study and/or a high priority initiative identified by the Task Force. The Harvard Divinity School hired an Administrative Fellow two years ago to do a similar study.

¹ For AY 2016-2017, the Chan School reported 959 graduate students, 478 total faculty (194 with primary appointments, which is the number used in the total above), 980 research scientists, fellows, and associates, 93 instructors, 481 academic professional and technical staff, and 822 core School professional and administrative support staff.

² For AY 2016-2017, SEAS reported 478 Graduate students, 943 undergraduate students, 183 staff, 134 faculty, and 555 researchers and post docs. Faculty and staff numbers are as of January 2017 and student numbers are measured in the fall of 2016.

Retain and Expand the Diversity, Inclusion, and Belonging Task Force

Target Audience: All SEAS

Description: Our recommendation is to retain the current committee and expand it to include members from the undergraduate, graduate, and faculty/researcher populations. We recommend the new committee be called the “SEAS Task Force on Diversity, Inclusion, and Belonging” to better align with University efforts. Membership of the task force should be inclusive and include participants from diverse socioeconomic backgrounds, wider representation of ethnicities, religions, gender identities, sexual orientations, nation of origin and ability. Additionally, one task force member advocates that membership include a stipend, so that people with less access to resources can also afford to participate in this important work. The task force can serve as a conduit to the University Task Force and work with existing SEAS committees already addressing diversity issues to share and implement best practices as applicable. We recommend that the task force support and work closely with the new Administrative Fellow in developing a thoughtful infrastructure valuing diversity, inclusion, and belonging. Several actions we recommend in the appendix below (including low effort but potential high impact ones) require thoughtful discussion and buy-in from the entire SEAS community.

RECOMMENDATIONS FOR LONG-TERM INTERVENTIONS

SEAS Emerging Scholars Program

Target Audience: Undergraduate Students

Description: For freshmen who indicated interested in Engineering that test into Math a, Math b or Math 1a. Students would be selected by mid-September (with an eye for URM, 1st generation or high Financial Aid status) and meet on a weekly basis to discuss application of math foundation to each of the engineering tracks in the Fall, then focus on how to write a research project in the Spring. This program would be modeled after the existing Emerging Scholars program that is run through the Math Department.

Research Training Program

Target Audience: Undergraduate Students

Description: For engineering students (juniors) taking ES96 in the fall. Ten students would be recruited by mid-October with an eye for URM, 1st generation or high Financial Aid status. Each student would be matched with participating faculty, post-doc or current graduate student (five minimum) to develop a strong summer research proposal to do research at Harvard through current programs like PRISE, or do research at another institution through an REU.

Graduate Fellowship (for conference recruitment)

Target Audience: Graduate Students

Description: Create a team of five graduate student ambassadors to support recruitment efforts. Create a fellowship position (with a \$1,000 stipend in addition to travel costs) for graduate students from underrepresented backgrounds to concurrently present during and support recruitment tables at major recruitment conferences that SEAS already staffs (ex. SACNAS, AISES). Additional funding can be provided for any faculty advisors who would also like to attend, regardless of whether they are from underrepresented backgrounds.

Curricular Implementation in Engineering Courses

Target Audience: Undergraduate Students

Description: Encourage faculty teaching introductory SEAS courses to implement weekly spotlights on non-traditional “scientists” and include reflections assignments (graded on word count so as not add additional grading component) to help expand the images of what an engineer, applied mathematician or

computer scientist looks like, and the types of work that they do. This will help to combat the impression that students from non-traditional backgrounds (in terms of race and gender) are not meant to be in these fields. This method has proved to positively impact academic achievement of underrepresented groups in introductory courses. Participating courses would get a SEAS sponsored catered lunch at the end of the semester.

Faculty On-Campus Visits

Target Audience: Prospective Graduate Students

Description: Encourage faculty that are presenting research talks on other college campuses, to make arrangements to meet with prospective graduate students on those campuses (especially on campuses where we have not traditionally received applications from). We could also ask faculty who regularly visit PI's in DC to meet with students at Gallaudet and Howard University where SEAS has already established points of contact. SEAS would fund any meals ordered for these groups and fund graduate application fees for candidates that met with faculty directly during these meetings (up to 5 application fees a year).

Visiting Faculty Program

Target Audience: Faculty

Description: Develop a program that hosts visiting faculty from underrepresented groups to SEAS for a term or year. We recommend examining programs such as MIT's MLK Visiting Scholars and Professors program to learn best practices. Several NSF Centers, such as the Harvard MRSEC (PI Professor David Weitz) and CIQM (PI Professor Bob Westervelt), have implemented this type of program in various levels of formality.

Grant Writing for Funding of Diversity Initiatives

Target Audience: All SEAS

Description: Develop templates and key programs that faculty can plug into when writing broader impacts for NSF grants, similar to 8th grade science & engineering showcase or REU. Use grant funding (usually 3-5 years) to pilot new programs that could then be pitched to donors or companies for more sustainable programs. These programs could be at graduate, undergraduate, postdoc levels, K12 or public levels – for example, a bridge to PhD program for minority students. Make faculty more aware of existing programs. Kathryn Hollar already works with several faculty members to develop broader impacts programs for NSF grants at the K-12 and undergraduate levels, which require initiatives to increase the diversity of the science and engineering workforce. However, the scope of these activities could expand and be more sustainable if positioned within a strategic plan for diversity at SEAS.

Comprehensive Post-doc Recruitment Strategy

Target Audience: Post-docs and Faculty

Description: Work with Christina Zaldaña and Kathryn Hollar to develop a minority post-doc recruitment strategy that would be accessible to all faculty members.

Rapid Response Team

Target Audience: All SEAS

Description: Establish a rapid response team to mobilize support for vulnerable or affected groups when there are national bias/hate incidents. The team would provide a welcoming and inclusive environment to deal with the emotional stress caused by such incidents. There is a similar program at HSPH and we can leverage their experience and knowledge to help SEAS develop its own Rapid Response Team.

CONCLUSIONS

The SEAS Diversity Task Force identified several opportunities for improvement and initiatives for the SEAS community to begin the hard work of becoming a more inclusive environment. In this report, we include recommendations that can be implemented in the coming Fiscal/Academic Year that we hope will have an immediate impact on the greater SEAS community. By opening up the conversation to the greater SEAS community and implementing some of the lower-effort events, we can make some progress towards our goals. By retaining and expanding the task force, the entire SEAS community can work together to develop and implement relatively low-effort actions that can move us toward a more inclusive community.

An enhanced task force will also be able to work towards implementing and planning the longer-term and more ambitious recommendations and goals included in this report. As we continue planning and moving towards the campus expansion, we will need a strong driving force to help keep our community together. A standing committee whose goal is to help create and develop a community of diversity, inclusion and belonging will help the greater SEAS community remain bonded throughout the expansion and beyond, when we become two campuses.

APPENDIX

Appendix A

Highlighted rows are included in the report above (yellow – immediate goals; blue – long-term goals):

Idea	Explanation	Category	Theme	Target Audience
D&I Database	Creation of an internal database for SEAS to track Diversity and Inclusion. This data would compile data points from the surveys administered internally. We would be able to track historical changes regarding D&I within the SEAS community and easily identify areas that we would have the strongest improvement	Low Cost, High Effort	Data Collection/Mgmt	All SEAS
Routine D&I Surveys	Administer surveys to the SEAS community (including Staff, Faculty, and Students) to better understand how each of these segments feel the School creates a community of Inclusion and Belonging. The results would be inputted into the D&I Database and would be used to find areas where we can improve. A preliminary survey before the implementation of D&I initiatives and after would be most beneficial to see if the initiatives started had a positive or negative effect on the SEAS community feeling.	High Cost, High Effort	Data Collection/Mgmt	All SEAS
Diversity/Women in Science Dialogues	A speaker series, possibly grant funded by the Dean's office, where notable women in science in the various areas that belong to our School are brought in and speak about their experiences and about their career. I think it is very important for students, especially undergraduates, to see women in science with engaging and successful careers. Most speaker series are dominated by mainly male-led sessions and it would be encouraging and inspiring to focus solely on the advancements that women have made to the field of Engineering and Applied Sciences. Activities are planned around the visit, advertised in INSIDE SEAS. Incentivizing and encouraging activities already planned.	Low Cost, Low Effort	Speaker Series	Harvard
Diversity Coffee Talks	Hour long sessions that mirror the Executive Dean Coffee Series, but focuses on Diversity within SEAS and the Harvard Community.	Low Cost, Low Effort	Speaker Series	All SEAS
Educational Session	This training/educational seminar series could be open to all members of the SEAS community. It would take little to no effort to get other members of the Harvard community to speak about their Diversity Initiatives and the resources that are available to the SEAS community. Having "refresher" educational session to remind everyone the proper channels to contact and deal with a variety of issues would be incredibly helpful (for example, having someone from the Title IX office come and speak and provide information and resources to the SEAS community would be incredibly helpful).	Low Cost, Low Effort	Training/Education	All SEAS
Internationality Diversity Focus Groups	Focus Groups that meet regularly to discuss SEAS' International Community as a whole. Events could be coordinated to show the global and diverse community that SEAS has (such as potlucks, mixers, etc.)	Low Cost, Low Effort	Speaker Series	All SEAS
D&I Certificate Program (CWD?)	A certificate program that is available for all SEAS community members to participate in. It would consist of creating courses and course work, coordination of lecturers/professors/outside speakers who are experts in D&I to administer the classes, and course planning. At the end of the course, graduates would receive a certificate for D&I.	High Cost, High Effort	Training/Education	All SEAS
Partner with HGWISE (Harvard Graduate Women in Science and Engineering)	HGWISE organizes a wonderful mentoring program, and may welcome some collaboration in finding and funding speakers, perhaps in conjunction with suggested women in science dialogues	Low Cost, Low Effort	Speaker Series	Graduate
Professional development workshop series for graduate students & postdocs	Develop an academic year program for postdocs and graduate students on career development; if critical mass, have specialized workshops for women or minority students - collaborate with GSAS if needed.	Low Cost, High Effort	Training/Education	Post-docs
Video Community Narratives	Create videos of SEAS staff talking about their work at Harvard posted on the SEAS website.	Low Cost, High Effort	Outreach	Staff
Bring Your Child to Work Day	Faculty and staff bring their elementary school aged children to work to participate in science related activities.	Low Cost, High Effort	Community	All SEAS
Employee Veterans Stories	Short biographies of SEAS employees who served in the military posted on the SEAS website.	Low Cost, Low Effort	Outreach	All SEAS
Wheelchair Day	Senior managers work for a day using a wheelchair.	Low Cost, High Effort	Training/Education	All SEAS
Where are you from?	World map where members of the SEAS community place a pin on where their ancestors lived.	Low Cost, Low Effort	Community	All SEAS
Diversity and Inclusion included as a School goal.	List diversity and inclusion among the goals for SEAS.	Low Cost, Low Effort	Outreach	All SEAS

Pride Event	Event held to educate the SEAS community on LGBTQ concerns.	Low Cost, High Effort	Community	All SEAS
Dean's Online Video	Video of the Dean speaking about diversity and inclusion posted on the SEAS website.	Low Cost, Low Effort	Outreach	All SEAS
Inclusion Awareness Presentations	Expert speakers presenting periodic talks on diversity and inclusion subjects.	Low Cost, Low Effort	Training/ Education	All SEAS
Bridge Program	For freshmen who indicated interested in Engineering that test into Math a, Math b or Math 1a. Students would be selected by mid-September (with an eye for URM, 1st generation or high FA status) and meet on a weekly basis to discuss application of math foundation to each of the engineering tracks in the Fall, then focus on how to write a research project in the Spring.	High Cost, High Effort	Bridge Programs	Undergraduate
PhD Training Program	For engineering students (juniors) taking ES96 in the Fall. Ten students would be recruited by mid-October (with an eye for URM, 1st generation or high FA status) and recruited to participate by the end of the semester. Each student would be matched with participating faculty, post-doc or current graduate student (5 minimum) to develop a strong REU proposal from November-February.	High Cost, High Effort	Bridge Programs	Undergraduate
Graduate Fellowship	A team of 5 graduate ambassadors to support recruitment efforts. Can create a fellowship position with a stipend for students to concurrently present during and support recruitment tables at major recruitment conferences.	Low Cost, High Effort	Outreach	Graduate
Curricular Implementation in Engineering Courses	Faculty teaching introductory SEAS courses that implement weekly spotlights on non-traditional "scientists" and reflections assignments (graded on word count so as not add additional grading) to help expand the images of what an engineer, applied mathematician or computer scientist look like, and the types of work that they do. Combats ideas that students from non-traditional background in terms of race and gender are not meant to be in these fields and has proven to have impact on academic achievement of underrepresented groups during introductory courses. Participating course would get a SEAS sponsored catered lunch at the end of the semester.	Low Cost, High Effort	Other	Undergraduate
Faculty on-campus visits	Faculty who are at local campuses during speaking engagements or Faculty that make visits with local universities we have not traditionally take applicants from, when their own speaking engagement is in a nearby area. Could also have faculty visiting PI's in DC regular meet with students at Gallaudet and Howard University where we already have points of contact. SEAS would fund any meals ordered for these groups and fund up to 5 applicants a year from institutions where faculty met with candidates directly.	Low Cost, High Effort	Outreach	Graduate
Training on best practices	Commit to a richer training environment in the area of searches. Mostly geared towards faculty searches but eventually can be used for postdoc searches if that model changes.	Low Cost, Low Effort	Training/ Education	Faculty
"Faces" of SEAS	Aside from the HR portrait series, the 'faces' that are displayed in SEAS are overwhelmingly white and male. A prime example of this is the photographs that hang in Pierce 320 (and to a lesser extent in the Dean's Conference Room). There should be a discussion on how we can address this while remaining respectful of SEAS history.	Low Cost, Low Effort	Outreach	All SEAS
Postdoc mentoring program	Develop a mentoring program for postdocs that incorporate goals, feedback, accountability, processes.	Low Cost, High Effort	Training/ Education	Post-docs
Visiting Faculty program	Develop a program that hosts visiting faculty from underrepresented groups to SEAS for a term or year.	High Cost, High Effort	Ext.Visiting Programs	Faculty
Bridge program for grads and postdocs	Develop a bridge graduate student program like the one at Fisk/Vanderbilt that targets historically underrepresented groups	High Cost, High Effort	Bridge Programs	Graduate
Collaborate with Harvard University Native American Program	Work with HUNAP leadership and students to identify areas of collaboration in courses, recruitment and retention strategies, resources for students	Low Cost, Low Effort	Training/ Education	All SEAS
Climate study (racial, gender, cultural) for all SEAS	Implement a climate study that includes a mix of surveys, focus groups, and individual feedback for each population within SEAS. Should include alumni. This study will give us an idea of where we can focus effort and money to have the most impact.	High Cost, High Effort	Data Collection/ Mgmt	All SEAS
Hire administrative fellow	This person could focus on implementing a climate study and/or a high priority initiative identified by task force. The Divinity School hired an admin fellow 2 years ago to do a similar study.	Low Cost, High Effort	Data Collection/ Mgmt	All SEAS
Grant writing for funding of diversity initiatives	Develop templates and key programs that faculty can plug into when writing broader impacts for NSF grants, similar to 8th grade science & engineering showcase or REU. Use grants (usually 3-5 years) to pilot new programs that could then be pitched to donors or companies for more sustainable programs. This could be at graduate, undergraduate, postdoc levels, K12 or public levels. Make faculty more aware of existing programs. Already in process but scope needs to increase.	Low Cost, High Effort	Training/ Education	All SEAS
Collaborating more with student groups (HGWISE, WICS, SWE, NSBE, SHPE, HSBSE) around professional development for students	Work more closely with student groups to support and share professional development programs and activities.	Low Cost, High Effort	Training/ Education	Undergraduate

Collaborate with GSAS on retention strategies for minority graduate students	Develop a more formal structure for checking in with minority and non-traditional graduate students to make sure that they are on track	Low Cost, High Effort	Training/Education	Graduate
More comprehensive postdoc recruitment strategy that would tie into existing conference recruitment and collaborations with MSI's	Work with Christina and Kathryn to develop a minority postdoc recruitment strategy that would be accessible to all faculty. Target faculty to work with on this.	Low Cost, High Effort	Training/Education	Post-docs
Clear, visible way to report micro-aggression and bias incidents	Currently there is no clear, visible way for students, staff, or visitors to report micro-aggressions or bias incidents, similar to the Title IX office	Low Cost, High Effort	Other	All SEAS
Collect data on various indicators for different populations (grad, undergrad, postdoc)	For example, for graduate students - time to degree, number of publications, number of conferences attended, career trajectory	Low Cost, High Effort	Data Collection/Mgmt	All SEAS
Look at Harvard T.H. Chan School of Public Health's Strategic D&I Plan; invite someone from that office	HSPH developed a draft strategic plan in 2014 that they are in the process of implementing. They have put together some innovative activities.	Low Cost, Low Effort	Data Collection/Mgmt	All SEAS
Rapid Response Team	A rapid response team to mobilize support for vulnerable or affected groups when there are national bias/hate incidents. Corinne, a similar program is at HSPH.	Low Cost, High Effort	Community	All SEAS
Paying people to do diversity work	For people who are doing this in addition to their regular responsibilities, give them an additional stipend.	Low Cost, High Effort	Community	All SEAS
Keep the D&I Task Force and expand membership to students and faculty. Tight connection to Administrative Fellow position.		Low Cost, Low Effort	Community	All SEAS
Referral program for staff hiring	This is a recommendation from Frank Dobbins' research paper "Why Diversity Programs Fail" - give small bonus if referral results in hire - has been show to increase diversity because it taps into networks that have more diversity than usual recruitment channels.	Low Cost, Low Effort	Community	Staff
Grad school application workshop for external undergraduates similar to MIT EDGE program	Intensive weekend program to give minority students feedback on grad and fellowship applications - usually early fall. MIT EDGE program would be a model program. This would be a good target program for a grant or company/donor sponsorship.	High Cost, High Effort	Ext.Visiting Programs	Other
Implementation of URM Post-doc Recruitment	Coordinate with SEAS Faculty members to implement a strategy to advertise and recruit post-docs who are underrepresented minorities. Using funds available for postdoc activities, encourage areas to publish paid advertisement in publications supporting URM in science in order to boost recruitment.	Low Cost, Low Effort	Community	Post-docs

Appendix B

Below is a list of supplemental readings, some of which inform the Task Force's suggestions:

1. [Report of the College Working Group on Diversity and Inclusion, Harvard University November 2015](#)
2. [Why Diversity Programs Fail \(and what works better\)](#)
3. [Princeton Diversity Best Practices](#)
4. [The Meyerhoff scholars program: a strengths based, Institution-wide approach to increasing diversity in science, technology, engineering and Mathematics](#)
5. [What We Learned from the Afternoon of Engagement](#), analysis of Harvard University event by Diversity and Inclusion Task Force Spring 2017.
6. [On holistic support beyond financial aid](#)
7. [On invisible burdens placed on faculty sub groups](#)
Selected Harvard Community Voices from Academic Year 2016-2017:

On faculty diversity

<http://www.thecrimson.com/article/2017/5/25/staff-ed-commencement-2017-faculty/>

On supporting low income students

<http://www.thecrimson.com/article/2017/3/28/khurana-rejects-summer-program/>

<http://www.thecrimson.com/article/2017/4/12/khurana-dingman-approach-support/>

On Navigating Harvard with "difference"

<http://www.thecrimson.com/column/borderlandsla-frontera/article/2017/5/10/reyes-ortiz-navigating-jarvar/>

<http://www.thecrimson.com/article/2017/5/3/veira-ramirez-s-laura-the-real-fear-of-deportation/>

<http://www.thecrimson.com/article/2017/4/28/rush-robert-is-it-worth-it/>

<http://www.thecrimson.com/article/2017/4/7/mccollister-uwamanzu-nna-in-search-of-transformation/>

<http://www.thecrimson.com/article/2017/2/13/veira-laura-financial-aid-is-a-treatment-not-a-cure/>

<http://www.thecrimson.com/article/2017/2/7/borrazzo-new-inclusivity/>

<http://www.thecrimson.com/article/2017/1/17/chung-role-asian-americans/>

<http://www.thecrimson.com/article/2016/11/29/duan-kim-seo-ethnic-studies/>

<http://www.thecrimson.com/article/2016/10/26/-against-yellowface-at-harvard/>

<http://www.thecrimson.com/article/2016/10/20/healthier-harvard/>

<http://www.thecrimson.com/article/2016/10/18/nook-coming-out-reflections/>