Harvard University Faculty of Arts & Sciences Postdoctoral Association Survey Report 2022

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I. *Executive Summary*

A postdoctoral position is for early career professionals who have recently obtained a PhD and is research-focused. Harvard University's Faculty of Arts and Sciences Postdoctoral Association (FASPDA) performed a survey of the 1,313 postdocs in FAS/SEAS. We received 420 responses (~32% response rate) with demographics similar to previous years' surveys and data provided by Harvard University, indicating that our sample is representative. Our major findings are as follows:

(1) **We found an underrepresentation of women, Black, Native American, and disabled scholars in the FAS postdoc community.** Women and Black postdocs were underrepresented compared to the national postdoc population, with no significant changes in population demographics since the findings released by the 2018 Presidential Task Force on Inclusion and Belonging[1].

(2) **Salaries in the FAS are still among the lowest at Harvard University, peer, and area institutions.** Most departments did not increase wages to keep up with historically high inflation. Postdocs in life sciences departments remain among the lowest-paid in the FAS, and 75% of postdocs leaving Harvard next year cited low pay as the primary factor influencing their decision to leave.

(3) **Postdocs of color and international scholars remain systemically underpaid relative to white domestic postdocs.** Continued inequities in pay are associated with increased likelihood of underrepresented groups living paycheck to paycheck and being incapable of saving for retirement. Postdocs in Science and SEAS divisions are 1.6 times less likely than postdocs in Social Science and Arts & Humanities to save money and contribute towards retirement. Financial strain is exacerbated for postdocs who are not Harvard benefits eligible.

(4) **Child care expenses are exorbitant and Harvard child care benefits are largely inaccessible to postdocs.** Postdocs with children reported ~30% of their pre-tax salary is spent covering child care. We found that women spend twice as much on child care than men, and only 8 eligible postdocs receive child care benefits from Harvard.

(5) **Challenges of postdoc life are compounded for international scholars, with little support from on-campus resources.** We found inequities in visa sponsorship and financial support for expedited visa processing across departments. International scholars routinely reported months-long waits in basic communications from both the Harvard International Office and the Non-Resident Alien Tax Office. Nearly half of international scholars reported that they are planning on shortening their postdocs due to their visa status.

(6) **Reports of bullying and harassment remain consistent.** We report no improvements in incidents of bullying, harassment, and discrimination of postdocs on the basis of sex,

[1] https://inclusionandbelongingtaskforce.harvard.edu/

gender identity, and race from our 2021 survey. Postdocs are experiencing toxic work cultures and multiple instances of unprofessional behavior by faculty, particularly in the life sciences. Nearly 5% of postdocs leaving Harvard in the next year reported bullying as the primary reason influencing their decision to leave.

II. FASPDA Recommendations

Based on the findings of the 2022 FASPDA survey, we make the following recommendations to the FAS to improve the welfare and well-being of their postdocs:

(1) Diversity & Inclusion

- **(a)** Collect data and distribute data at the university level about division, department, and research group demographics each year.
- **(b)** Standardize the postdoc hiring process through https://academicpositions.harvard.edu/ to list job openings to allow for a more transparent and fair system.
- **(c)** Invest in fellowship programs that promote diversity and inclusion of scholars from underrepresented groups.

(2) Salary

- **(a)** Raise Harvard FAS/SEAS official salary minimum to the Federal Government GS-11 scale (which factors in a cost-of-living adjustment, inflation, and salary increase for each year of experience) beginning FY2024.
- **(b)** Following the lead of MIT and Princeton, use central funds to bridge the increase to the GS-11 scale for all PIs for the first two years and for those who need it for the following fiscal year.
- **(c)** Monitor the salary discrepancies between different demographic groups, in particular based on international status and race.
- **(d)** Review postdoc hiring and contract renewal practices and create guidelines for faculty to mitigate race- and international-status-based salary discrepancies.

(3) Benefits

- **(a)** Make every FAS postdoc benefits eligible, enabling equitable access to affordable healthcare, child care, transportation subsidies, and retirement planning.
- **(b)** Following the lead of Yale, allocate central funding to provide benefits to those not currently benefits eligible.
- **(c)** Auto-enroll postdocs into the 2001 Staff Retirement Program, enabling access to employer contributions.
- **(d)** Offer postdocs the same child care benefits options as faculty. Raise the maximum household income threshold for access to Harvard child care benefits and increase child care benefits subsidies. Make on-campus/close to campus child care more accessible by increasing the number of available spots for children of postdocs.

(4) Support for International Scholars

- **(a)** Standardize visa sponsorship and processing practices for all departments. Issuing long-term contract durations (2-3 years) for international postdocs and promoting sponsorship of H1B visas rather than J1 (which may have home country requirements) would better support international scholars at Harvard. We also recommend improving transparency and promoting open discussion sessions about H1B processing with international scholars.

(b) Expand the Harvard International Office and Harvard Non-Resident Alien Tax Office workforce to accommodate and support the needs of the more than 8,000 international scholars at Harvard[2].

(c) Improve access and assistance from Harvard Non-Resident Alien Tax Office. Timely response to international scholar questions, being mindful of postdoc filing statuses such as Resident Alien vs. Non-Resident Alien taxpayers, and providing better onboarding about US tax procedures overall are needed. We recommend that walk-in hours during tax season are set up, and an accountant who is comfortable and equipped to provide tax advice to international students and scholars is hired to host these hours.

(5) Work/Department Culture

(a) Perform exit surveys of postdocs to identify faculty members engaging in bullying behavior (or other forms of harassment/discrimination) and proactively support other postdocs supervised by faculty who engage in bullying behavior.

(b) Implement a supplementary mentoring/advising program for postdocs who experience bullying, harassment, or discrimination. We envision this as a volunteer group of faculty who are willing to take on an advisory/mentoring role (not a funding role) for postdocs who have difficult relationships with their primary faculty mentors.

(c) Require management reviews of faculty working with postdocs and provide training as necessary to ensure they are aware of healthy management practices.

(d) Provide voluntary training for faculty managing postdocs on how best to support postdocs in their career ambitions.

(e) Provide postdocs with information about how to address bullying behavior. We recommend an informational campaign informing postdocs about the existence of resources available to them, such as the Ombuds office. We note that currently available resources are insufficient and hope to see more resources for postdocs with the implementation of Harvard's planned Anti-Bullying policy.

(f) Ensure that postdocs are aware of the resources available to them to address sexual or gender-based harassment and racial discrimination.

[2] https://www.hio.harvard.edu/statistics

III. *Methodology*

The FASPDA conducted its annual survey between July 7th and September 23rd, 2022. The survey was created using Qualtrics online survey software and distributed via verified Harvard email to postdocs and research associates affiliated with the Faculty of Arts and Sciences and the School of Engineering and Applied Sciences. The survey was 111 questions in length and covered topics pertaining to salary, financial health, access to and satisfaction of benefits (e.g., health insurance, child care, and retirement), support for international scholars, professional development, work-life balance, bullying and harassment, and COVID-19. Participation in the survey was voluntary, anonymous, and completable once per eligible participant.

A total of 420 responses were collected, representing ~32% of the postdoc population in FAS and SEAS **(Figure 1)**. Nearly two-thirds of respondents (n = 242) were affiliated with the Science Division, which allowed for robust statistical analyses across the departments represented by this division. We received fewer responses from postdocs in SEAS (n = 64), Social Science (n = 45), and Arts & Humanities (n = 26); however, these numbers reflect smaller postdoc populations within these divisions.

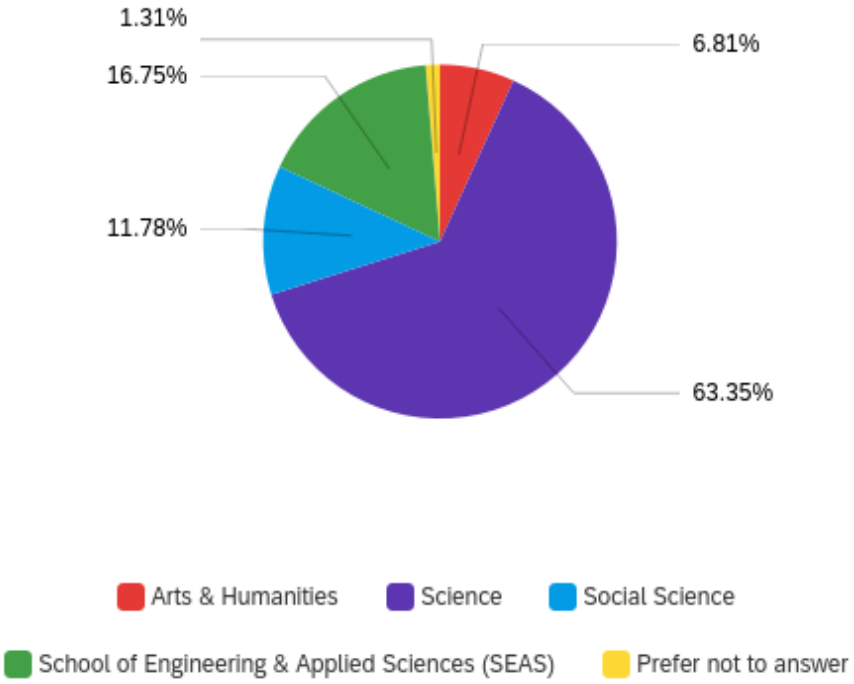


Figure 1. *Distribution of respondents by division.*

Here we draw on results from the annual survey to identify major challenges postdocs face in the FAS, including trends that have remained consistent with findings from previous years' surveys. With these results we propose recommendations to improve the well-being of postdocs in the FAS, supporting Harvard's goals to recruit and retain a more diverse and inclusive

academic workforce. In this document we will discuss the following as they pertain to postdocs and research associates affiliated with the FAS, its divisions, and constituent departments:

1. Population demographics
2. Factors influencing professional trajectories
3. Low wages, salary discrepancies, and high cost of living in greater Boston
4. Systemic inequities exacerbated in savings and retirement
5. Inequitable access to affordable healthcare and child care benefits
6. Compounding challenges faced by international scholars
7. Bullying and harassment culture, particularly in the life sciences
8. Pervasive effects of the COVID-19 pandemic.

IV. *2021-2022 Postdoctoral Demographics in the FAS*

Part A: Results

Race

Of the 1,313 postdocs at Harvard FAS[3], we received 420 survey responses. Six (1.62%) respondents were Black and three (0.81%) Native American. Hispanic scholars comprised 8.29% of total respondents and 4.97% were Middle Eastern/ North African (MENA). These responses are consistent with findings from the 2021 FASPDA annual survey[4], indicating the percentage of postdocs from groups underrepresented in academia has not changed over the course of the last year at Harvard. Compared to two independent postdoc surveys of national and global postdocs published in *Elife* and *Nature* respectively, Black postdocs are underrepresented at Harvard while Hispanic/ Latino and Native American postdocs are approximately equal to to national numbers[5,6] **(Figure 2)**. In comparison to national percentages, these disparities are stark. In the total US population[7] 13.6% of people are Black, 18.9% are Hispanic or Latino, and 1.3% are Native American. In comparison to our survey data, these groups are 8.4-, 2.3-, and 1.6-fold underrepresented, respectively. These disparities are not uniform across Harvard. In the undergrad population, both Harvard reported data from the incoming freshman class, and data from the class of 2022 surveyed by the *Crimson* shows that undergraduate racial distributions are much closer, or even exceed the national percentage[8,9].

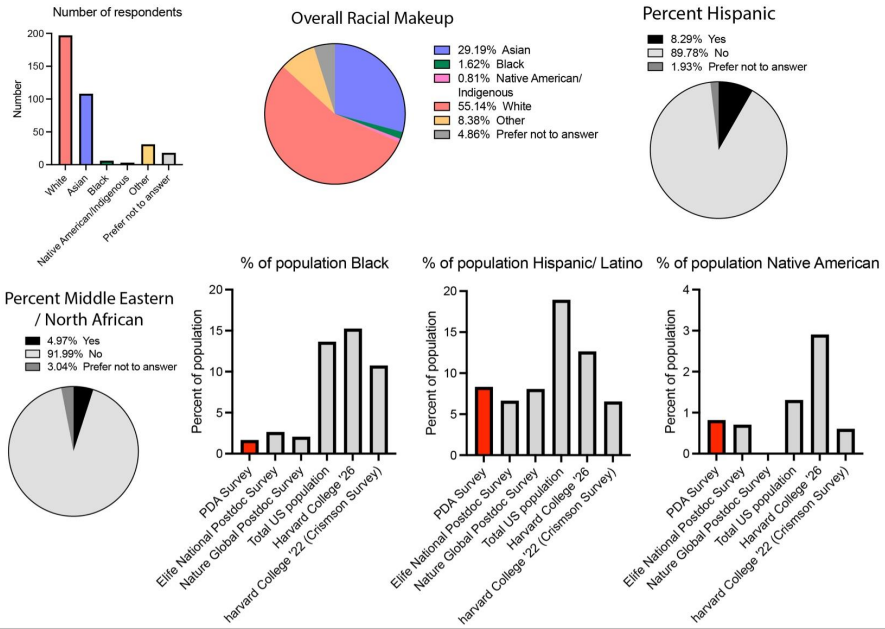


***Figure 2**. Distribution of racial identities of Harvard postdocs.*

[3] https://postdoc.fas.harvard.edu
[4] https://postdoc.fas.harvard.edu/PDA/reports
[5] https://elifesciences.org/articles/40189#content
[6] https://figshare.com/s/a0a0f1c90843c12e6373
[7] https://www.census.gov/quickfacts/fact/table/US/SEX255221
[8] https://college.harvard.edu/admissions/admissions-statistics
[9] https://features.thecrimson.com/2018/freshman-survey/makeup-narrative/

Racial identity was relatively evenly distributed across all divisions, with each reporting lower representation of Black and Native American scholars relative to national averages[10]. Within the science division for which we received the most responses, the lack of diversity was similar for all departments **(Figure 3)**.

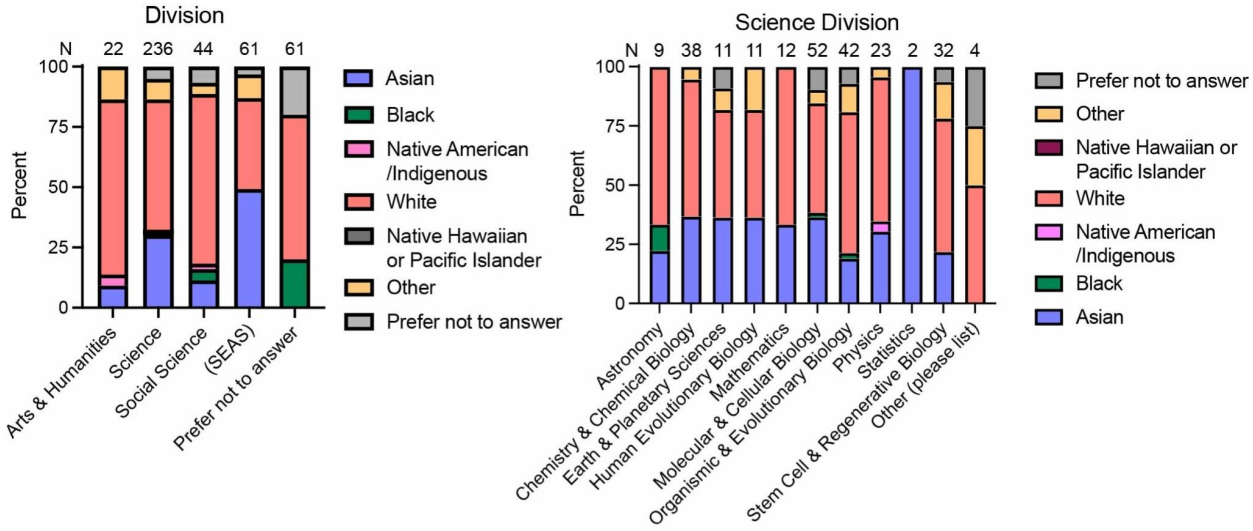


***Figure 3**. Percent of respondents in each FAS division belonging to each race*

Gender

This survey found 39.7% of respondents were women compared to 52.7% men, while 7.8% identified outside the gender binary. This is a slight increase in female postdocs at Harvard from surveys from previous years. Our 2021 survey found that 35.8% of postdocs were women and in 2018, the Presidential Task Force on Inclusion and Belonging found that 35% of postdocs were female. However, these percentages are far below the percent of female postdocs both nationally and internationally, which are both greater than 50% **(Figure 4)**. Because some surveys do not track non-binary people, if we measure the ratio of only females to males in our data (not including non-binary responses) there are still 42.96% females to 57.03% males, and all conclusions for female postdocs remain. As with racial demographics, the Harvard undergraduate population was approximately equal to the national percentage of women. However, women only accounted for 35% of the Harvard university faculty. As we will further examine in the discussion, decreasing barriers that allow women to pursue postdocs is essential to the academic pipeline.

Female and non-binary postdocs were especially underrepresented in the science and engineering divisions. Within science, both math and physics had almost no females responding to the survey.

The number of non-binary postdocs (7.8%) was much higher than in 2021 (0.8%), and higher than one pew estimate of the national average of 1.6%. However, most of the science

[10] https://www.census.gov/quickfacts/fact/table/US/PST045221

departments and very few SEAS postdocs were non-binary, with most responses coming from Arts & Humanities.

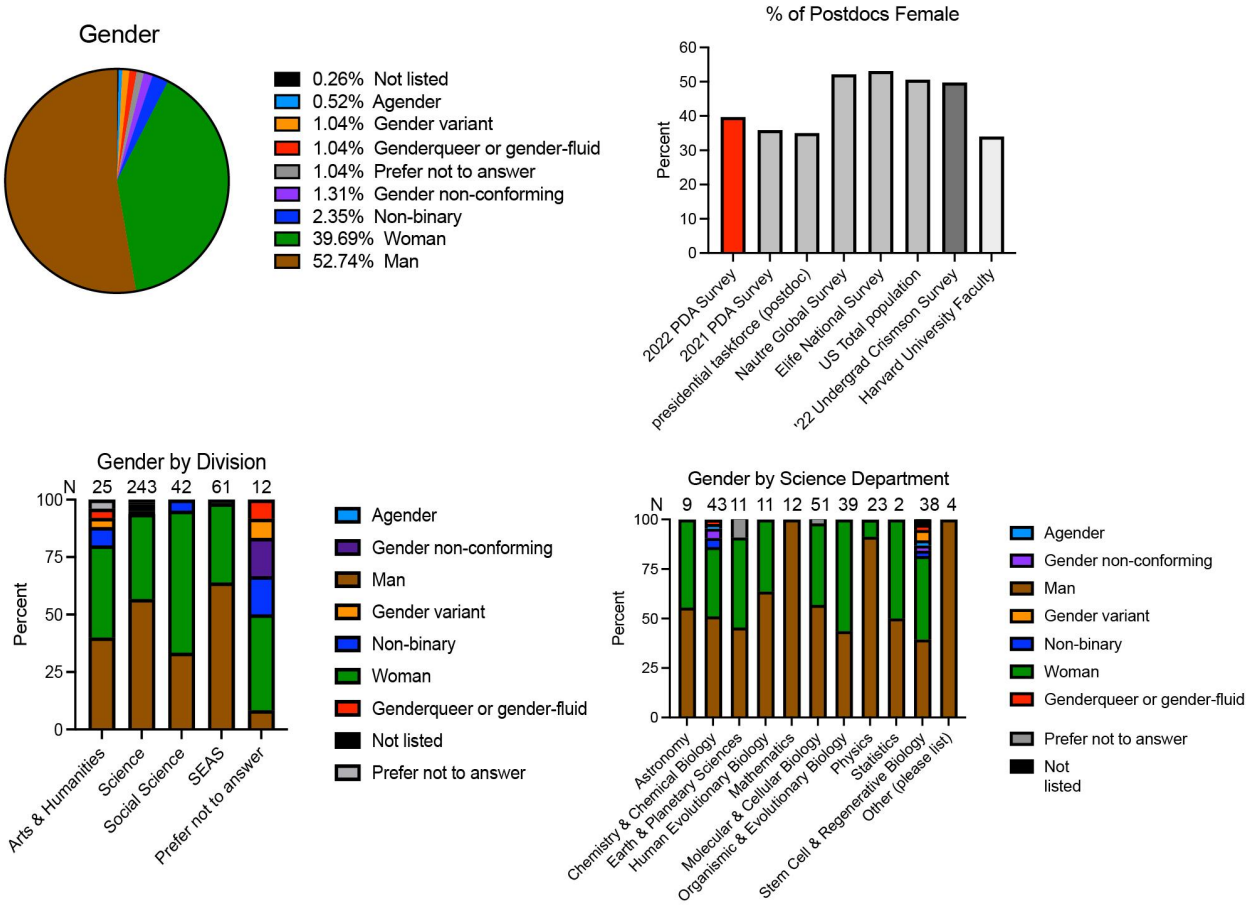


***Figure 4**. Gender representation of Harvard postdocs by academic area and compared to other inter and intra-university populations*

Sexual Orientation

13.81% of respondents identified as LGBTQ+ **(Figure 5)**, which is greater than the estimated 7.1% in the general US population[11]. Increased representation of the LGBTQ+ at Harvard is likely reflective of Massachusetts' LGBTQ-friendliness, offering relative safe haven against persecution and discrimination at a time when human rights are being eroded in other states across the country[12].

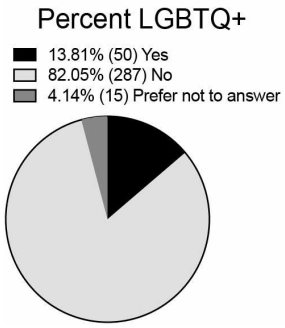


***Figure 5**. Percent LGBTQ+ postdocs in FAS/SEAS.*

[11] https://news.gallup.com/poll/389792/lgbt-identification-ticks-up.aspx
[12]https://www.ohchr.org/en/press-releases/2022/08/united-states-un-expert-warns-lgbt-rights-being-eroded-urges-stronger

Ability Status

3.31% of respondents were disabled **(Figure 6)**. This is lower than the national average of 10.6% of disabled Americans age 18-64[13].

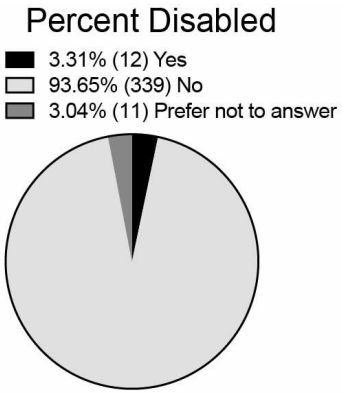


***Figure 6**. Percent of FAS/SEAS postdocs that are disabled*

Age

32.1% of postdocs were below 30 years old, 46.4% were between 31-35 years old, and 20% were older than 35 years old **(Figure 7)**. This distribution highlights that postdocs are increasingly required to spend additional years as postdocs and research associates to enhance their research output to be competitive for tenure-track positions. People in their 30s have increased financial and time demands associated with starting and supporting families.

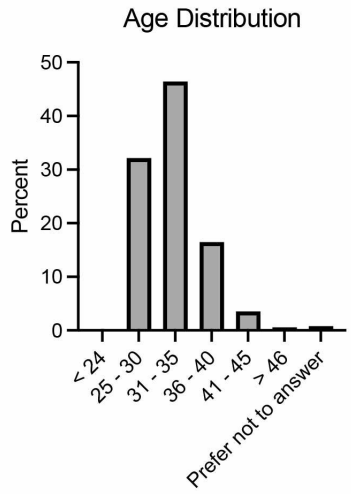


***Figure 7**. Age distribution of FAS/SEAS postdocs*

Marital Status

[13] https://disabilitycompendium.org/sites/default/files/user-uploads/2017_AnnualReport_2017_FINAL.pdf

Forty-two percent of survey respondents were married, and 41% of respondents were single **(Figure 8)**. In the general population, the probability of first marriage by age 30 is 74% for women and 61% for men[14]. The high percentage of single postdocs could reflect the sacrifices to work/life balance required to achieve success in academia.

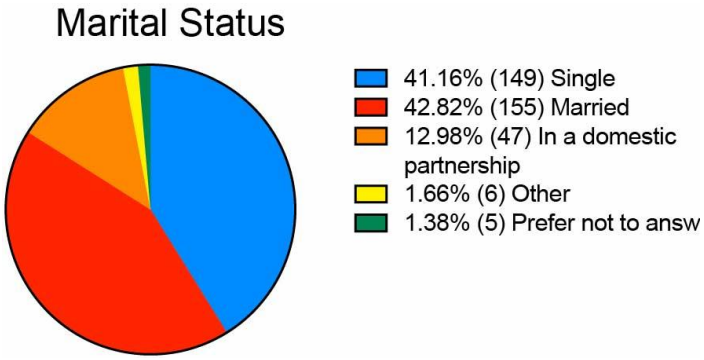


***Figure 8**. Marital status of Harvard FAS/SEAS postdocs*

Part 2: Discussion

The FASPDA is committed to working with Harvard to uphold the ideals of academic diversity and inclusivity. In this survey, we identified underrepresentation across race, gender, and ability. Many of these disparities exceed those of other communities at Harvard and when compared to postdocs nationally, highlighting the urgency for more targeted approaches to address these problems specifically within Harvard's postdoc population.

Fixing postdoc diversity will require approaches that reflect the special circumstances of this career stage that are very distinct from undergraduate and graduate programs. Postdoc hiring decisions are often done by a single faculty member with little to no oversight from the university. Therefore, even if the university as a whole supports diverse hiring, the decision is made on an individual basis by hundreds of PIs across the campus. With this hiring model, successful policies of affirmative action, race conscious admission, or cluster hiring by a department cannot operate in the same manner. Harvard will need to work within this unique hiring framework to enact change.

First steps to address the application process would be to regularly report diversity statistics to departments and individual labs to help faculty and departments track disparities in their hiring practices. Second, records of applicants compared to candidates hired could be tracked by the University to collect concrete data to understand if unfair hiring practices are being made. Third, a clearer job posting mechanism could be implemented. Often postdoc positions are found through word of mouth and through private networks that favor those from privileged backgrounds. Standardizing postdoc hiring practices through the implementation of a centralized, public site where PIs post postdoc job listings should be instituted if not already in place.

Diversity fellowship programs could be implemented to actively recruit more postdocs to Harvard from different backgrounds. A program at the University of North Carolina at Chapel Hill

[14] https://www.cdc.gov/nchs/products/databriefs/db19.htm

provides funding for 10 postdocs, with the intent that these scholars will become faculty at the University after the fellowship period[15]. Similarly, Stanford initiated a Propel scholars program that funds, recruits, and provides an inclusive community for postdocs from diverse backgrounds[16]. Harvard FAS does not offer such a program. Implementing a fellowship program would have a big impact, greatly increasing representation from minority groups, show Harvard's commitment to diversity, and begin to create a more inclusive community for people, which could extend to even to people not a part of the program.

The findings presented in this 2022 survey are not new. Most results have remained consistent from previous FASPDA surveys and from the 2018 Harvard Presidential Task Force Report on Inclusion and Belonging. Few tangible actions have been made that directly address these issues in the postdoc community, despite repeated presentations of these data over multiple years. In order to fully realize its commitment to inclusive excellence, Harvard should take actionable steps to address the diversity crisis among its postdocs. Here and throughout this survey we have identified areas at which Harvard could improve its support of individuals from historically marginalized groups.

Recommendations

In addition to recommendations raised later in this report, the FASPDA makes the following recommendations with respect to increasing postdoc diversity in FAS and SEAS:

1) Collect data and distribute data at the university level about division, department, and research group demographics each year.
2) Standardize the postdoc hiring process through https://academicpositions.harvard.edu to allow for a more transparent and fair system.
3) Invest in fellowship programs that promote diversity and inclusion of scholars from underrepresented groups.

We are inspired by the words of President-elect Gay that speak to our responsibility as academics to address injustice: “now is the time to re-engage and reconnect, both with each other and with the promise of our mission to advance knowledge and discovery in service of a more just world.”[17] In this survey of Harvard’s FAS and SEAS postdocs, we generate knowledge of injustices in Harvard’s own community. Together with our recommendations of steps to correct the problems of representation among Harvard’s postdocs, this report serves as a tool that will enable improved postdoc diversity in service of a more just world.

[15] https://research.unc.edu/carolina-postdocs/
[16] https://propel.stanford.edu/scholars/
[17] https://www.fas.harvard.edu/2020/08/20/advancing-racial-justice/

V. *Postdoc Professional Trajectories*

Part A: Results

36% of postdocs had the goal of tenure track research faculty. Notably, 18.87% and 9.08% were also interested in other academic research positions and tenure track teaching focused faculty respectively **(Figure 9)**. Only 16% of respondents had a career goal of private industry, suggesting that postdoc training could be of marginal value for some industry paths[18].

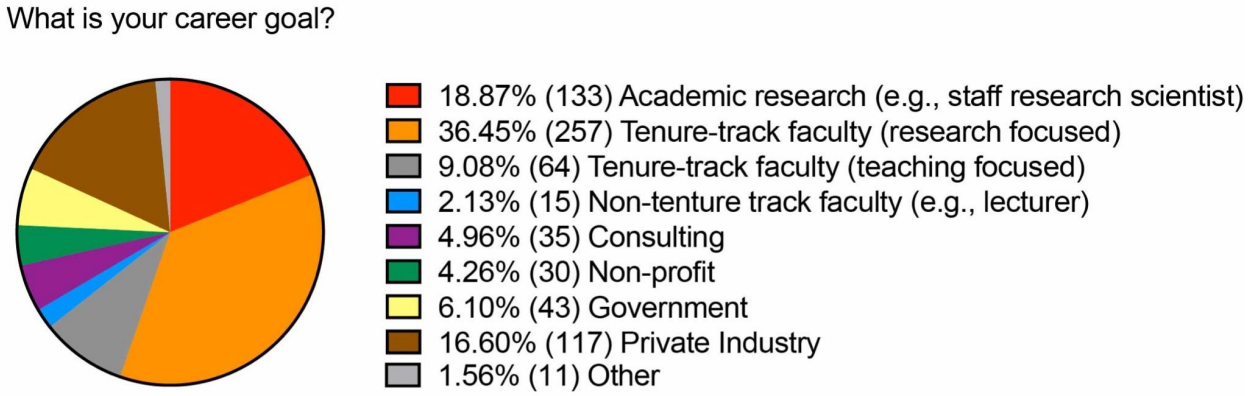


Figure 9. *Career goals*

20% of postdocs planned to leave Harvard in the next year, with 27.3% unsure.
The most common reason for leaving was contract expiration and more attractive opportunities elsewhere **(Figure 10)**. **Concerningly, 4.41% of postdocs will be leaving Harvard due to bullying/harassment.** Most of the "Other" responses were written in as due to starting another academic position or other job. **These data indicate that at least 27.94% of people who were leaving Harvard were leaving before they intended to find better employment or to leave a bad working environments.**

[18] https://www.sralab.org/sites/default/files/2017-08/Nature%20Value%20of%20Postdoc.pdf

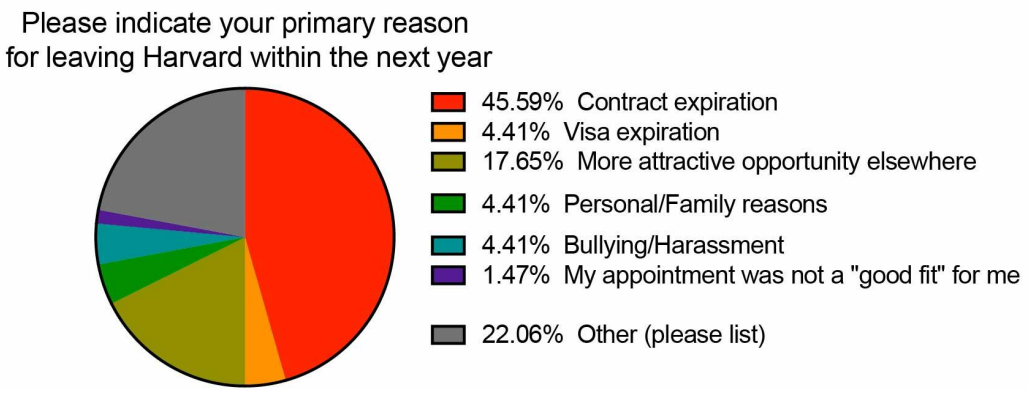


Figure 10. Reasons for leaving Harvard

Among the factors that swayed postdocs to leave, salary was the largest detractor along with the lack of childcare and retirement benefits **(Figure 11)**. Healthcare quality was overall a low detractor although the cost was a factor for 37.3% of people who were leaving.

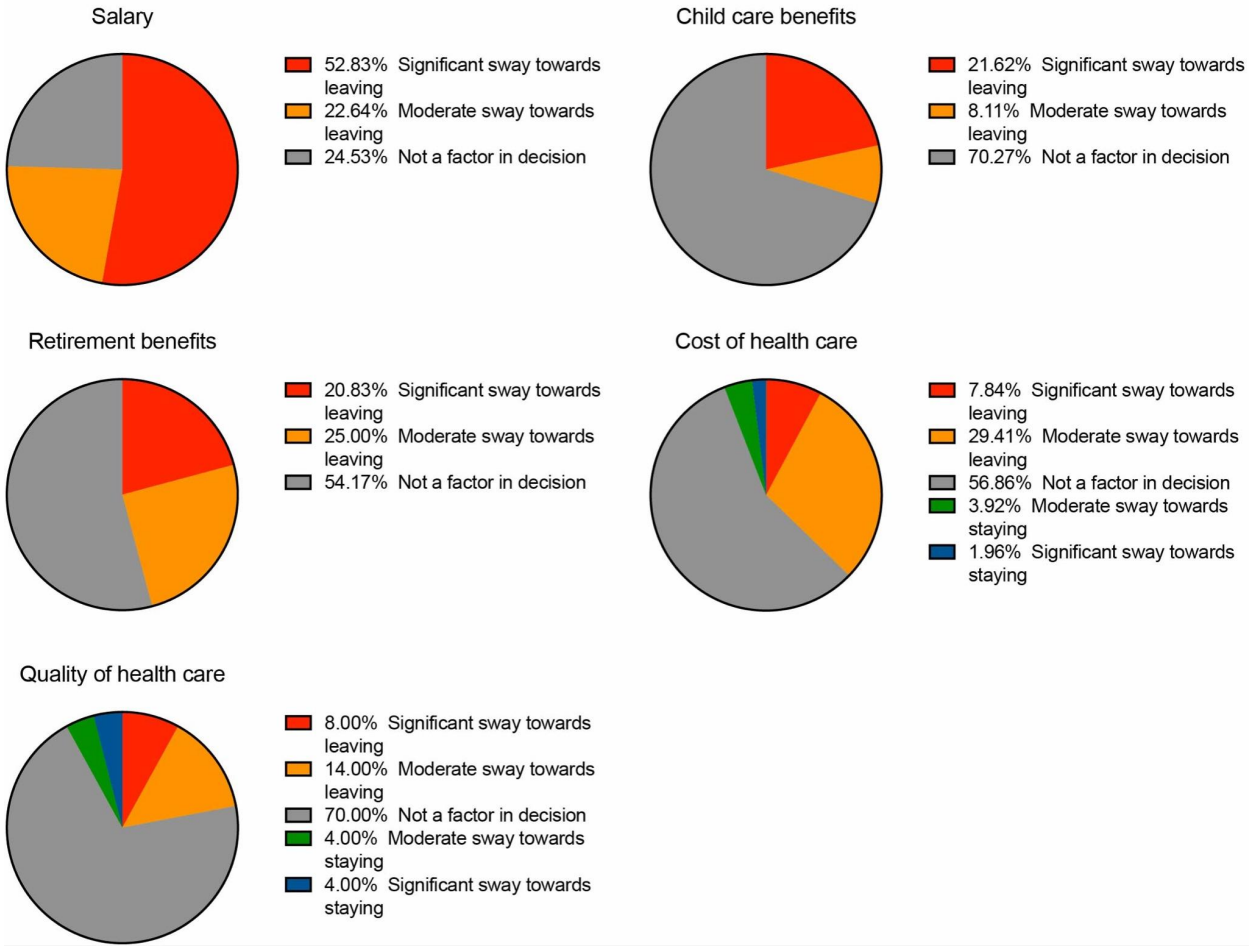


Figure 11. *Details on reasons for leaving Harvard*

Part B: Discussion

66.53% of respondents were seeking careers in academia focused on either research or teaching **(Figure 9)**. The remaining third was divided among industry, non-profit, government, and consulting work. These numbers indicate that Harvard FAS will produce about 864 faculty per year if all respondents continue on their desired paths. This figure, while saying nothing of the elephant in the room – that being, in a steady state, only 12.8% of PhDs will attain tenure-track positions in the US[19] – nonetheless underscores the large national effect of Harvard FAS on the faculty applicant pool.

17.65% of respondents were leaving due to more attractive opportunities elsewhere **(Figure 10)**. Because postdocs can make much higher salaries outside of academia, many decide they are better off ending their postdoc. This inevitably reduces Harvard's research output and puts strains on PI who lose out on talent sometimes mid-way through a project.

4.41% of people left for personal or family reasons, 4.41% for bullying or harassment, and 1.47% because the "fit was not good" **(Figure 10)**. **No one should leave Harvard due to bullying or harassment.** Harvard should take immediate action to ensure these numbers are reduced to zero in all future years.

Salary was the most common reason that people were leaving Harvard with 75.47% having this factor be a significant or moderate sway to leaving. Increasing postdoc salaries would prevent postdocs from exiting Harvard and academia. Poor benefits also swayed people to leave with 45.85% being swayed by lack of retirement benefits and 29.73% being swayed by poor child care benefits. Harvard should increase these benefits to retain its postdocs.

[19] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4309283/

VI. *Postdoctoral Salary*

Part A: Results

Overview

We assessed the self-reported salary of postdocs at Harvard FAS. Postdocs were asked whether they are hired to work full-time, and only salaries of those hired to work full-time are analyzed here. We found that the median self-reported salary of FAS postdocs is $60,000, but this varies substantially by department, with life science departments, generally, having the lowest salary **(Figure 12)**.

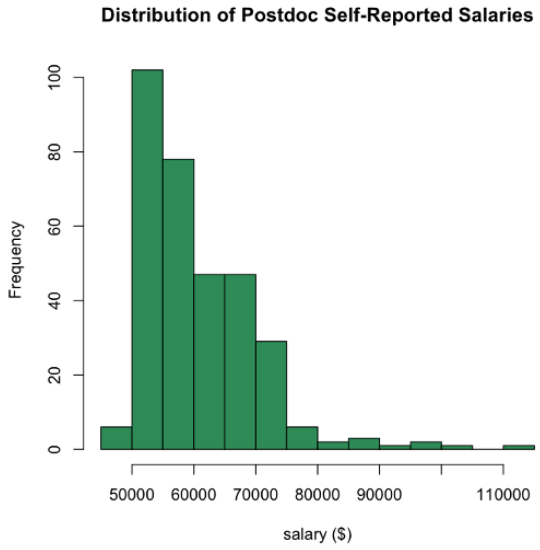
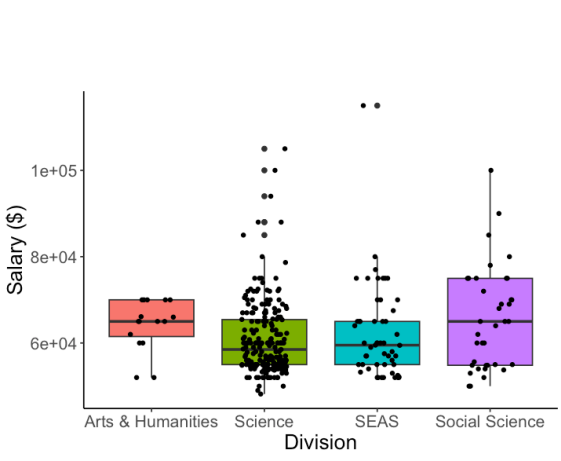
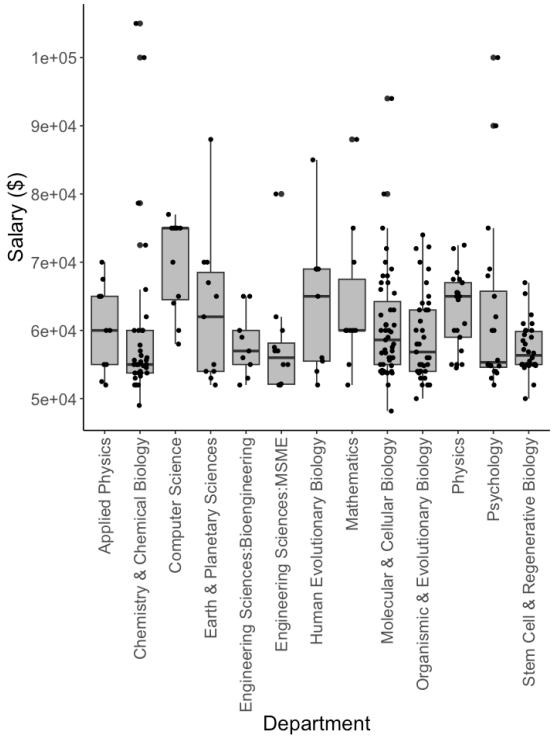


Figure 12. *Distribution of self-reported full time postdoc salaries at Harvard FAS.*





Harvard increased the minimum postdoc salary to $52,000 for 2022, and we observed a 6.35% increase in median postdoc salary in 2022 compared to 2021. However, the percentage increase in salary varied widely by department **(Figure 13)**, with only 3 departments with median salary increases at a level that kept pace with the 6.5% inflation observed nationally between 2021 and 2022[20]. We note that departments with the highest change in mean salary (OEB, MCB, and Psychology) are three of the departments with the lowest mean salaries reported in the 2021 survey. Thus, while these low-paid departments are keeping up with inflation, postdocs in those departments were systematically underpaid to begin with, so a raise in salary greater than inflation is justified. **We emphasize, however, that in most departments, mean salary did not keep up with inflation**.

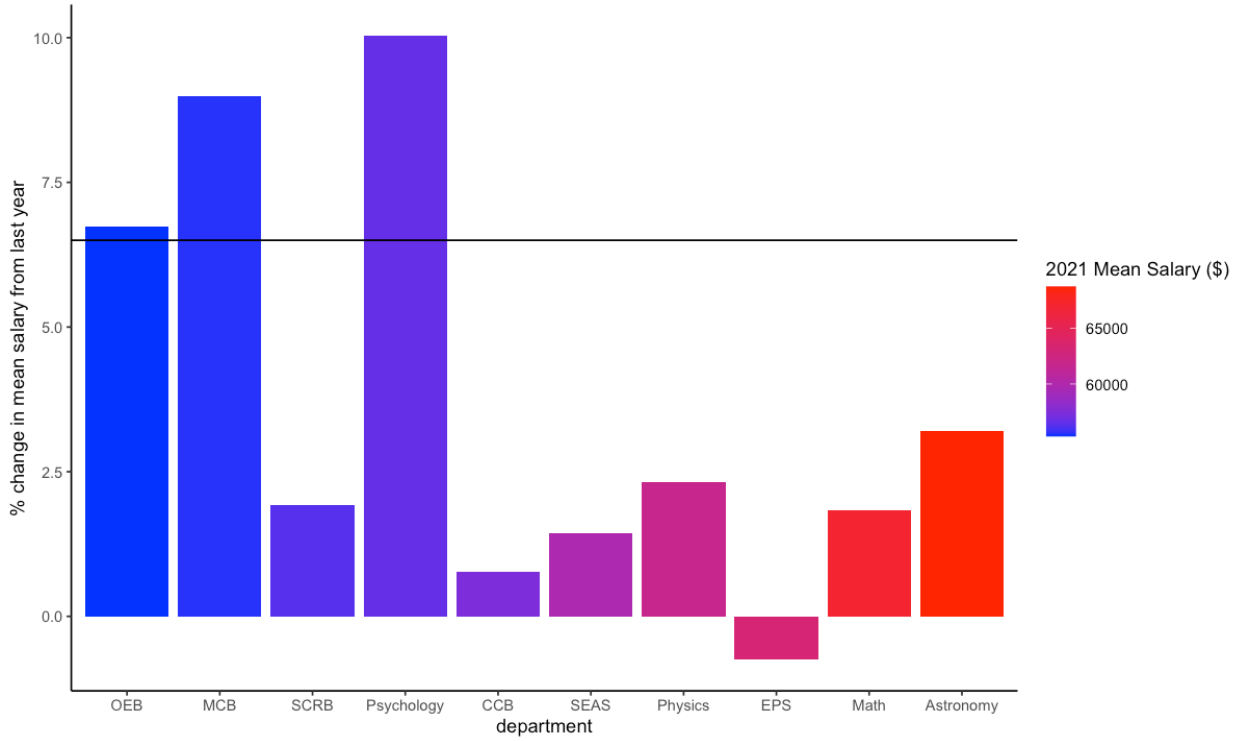


Figure 13. *Percentage change in mean salary by department. Shown are departments with more than 8 respondents in both 2021 and 2022. The black line represents the inflation rate between 2021 and 2022.*

Postdoc Salary by Race and Visa Status

Last year and in our 2020 survey report we reported inequities in salary where non-white postdocs are paid lower salaries than white postdocs, a result mainly driven by low salaries of international scholars of color. We again observed inequities of a similar magnitude in salary for international scholars of color **(Table 1; Figure 14)**. We note that we see no salary discrepancies by gender.

[20] https://www.usinflationcalculator.com/inflation/current-inflation-rates/

Table 1. Mean self-reported salary of FAS/SEAS postdocs from 2020, 2021, and 2022. We observe a statistically significant impact of the interaction of race and international status on salary (ANOVA, $P < 0.05$).

	2020 mean salary	2021 mean salary	2022 mean salary
white, domestic	$57,314.47	$60,640.58	$62,959.43
white, international	$58,342.70	$59,325.68	$62,996.57
non-white, domestic	$59,957.50	$60,285.63	$62,491.92
non-white, international	$52,819.29	$56,214.64	$59,232.96

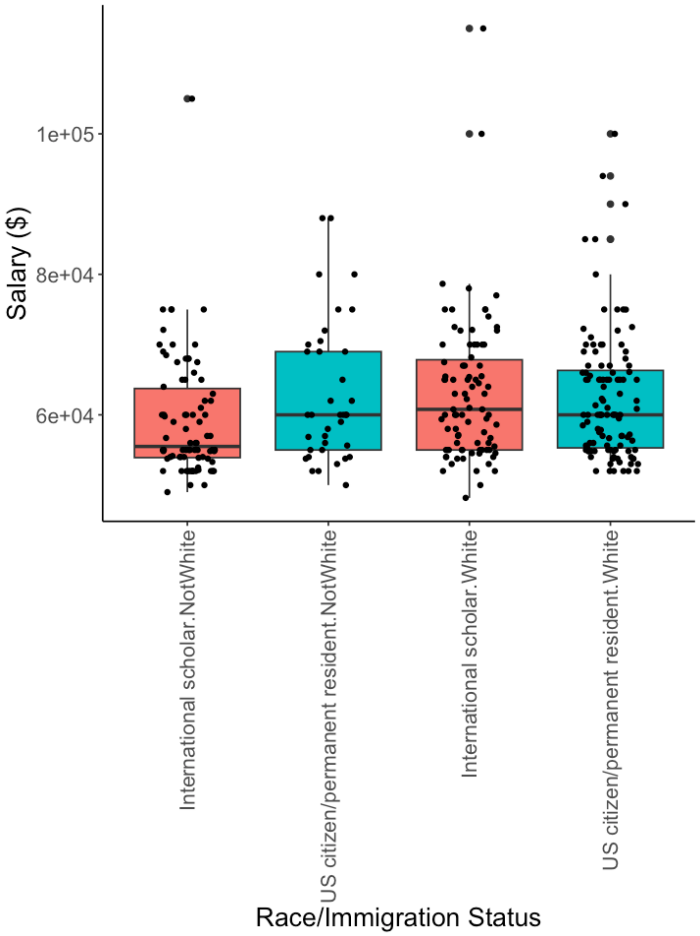


***Figure 14**. 2022 salary distributions of postdocs by race and international status. Domestic = U.S. citizen or permanent resident. Each point is an individual, self-reported salary. p<0.05, significant effect of race and immigration status, ANOVA. We found no significant difference in years as a postdoc between these groups.*

Given that we observed differences in both salary and race at the department level, with life sciences departments having both more nonwhite postdocs and lower salaries than other departments, we wondered whether this race-and-visa-based salary difference could be explained by differences in departmental demographics. We therefore assessed salary by racial and immigration status classes in only life sciences departments. We find a significant effect of race and immigration status within the life sciences **(Figure 15)**, suggesting that this discrepancy cannot be explained by departmental affiliation alone.

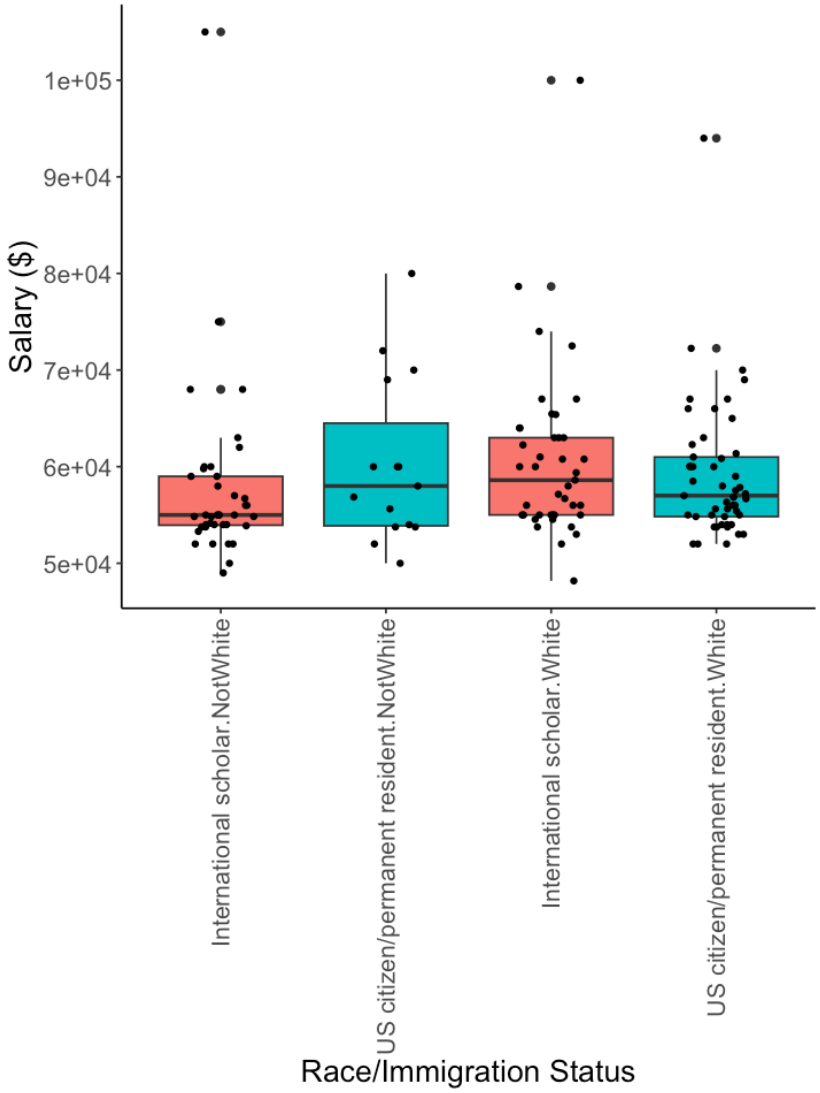


***Figure 15**. 2022 salary distributions of postdocs by race and international status for postdocs in life sciences departments (MCB, OEB, SCRB, CCB, Psychology). Domestic = U.S. citizen or permanent resident. p<0.05, significant effect of race x immigration status, ANOVA. We found no significant difference in years as a postdoc between these groups.*

We next asked whether this impact of race and international status on salary was among postdocs funded directly by Harvard faculty or those who had applied for and won their own funding. We reasoned that perhaps funding discrepancies could be explained by differences in the external funding sources available to international postdocs. **We find that for postdocs who receive at least some portion of their funding from a source they applied for themselves, international postdocs of color have lower salaries (Figure 16). Surprisingly, among Harvard-funded postdocs, we observe a discrepancy in salary between white postdocs and postdocs of color regardless of international status (Table 2).**

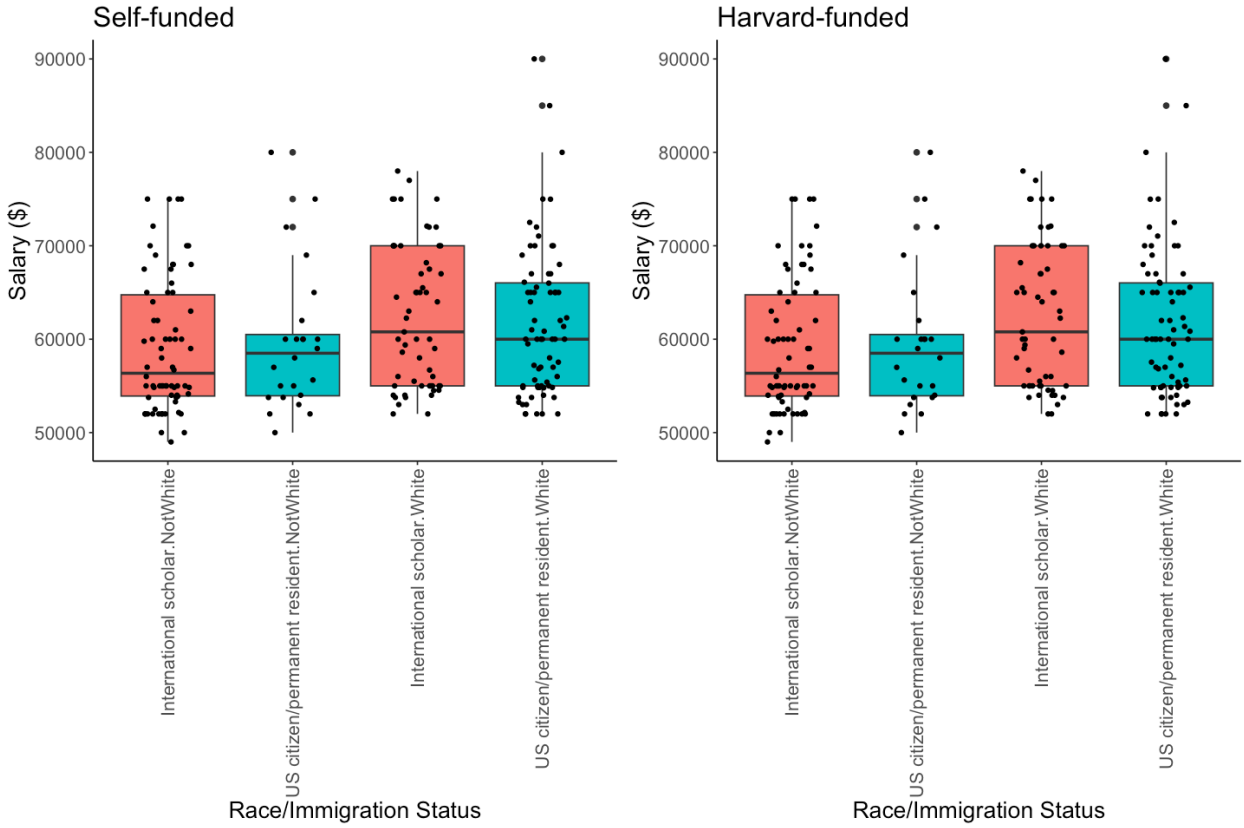


***Figure 16**. 2022 salary distributions of postdocs by race and international status. Domestic = U.S. citizen or permanent resident. Each point is an individual, self-reported salary. p<0.05, significant effect of race and immigration status, ANOVA (self-funded). p<0.05, significant effect of race regardless of immigration status ANOVA (Harvard-funded).*

Table 2. Self-reported mean salaries by race and immigration status in 2022. We observe a statistically significant effect of race and in the interaction of race and international status on salary (ANOVA, $P < 0.05$).

	Self-funded mean salary	Harvard-funded mean salary
white, domestic	$64,046.22	$61,714.77
white, international	$64,004.52	$62,466.07
non-white, domestic	$69,104.62	$59,630.79
non-white, international	$59,875.00	$59,122.90

Part B: Discussion

In conclusion, once again, we strongly recommend that Harvard urgently amend its salary guidelines for postdocs. Harvard has committed itself to being actively anti-racist and anti-xenophobic. As part of this pursuit, Harvard should endeavor to restructure policies that, whether intentional or not, discriminate against individuals on the basis of race or immigration status. The postdoc salary policy at Harvard is a prime example of such a policy that must be changed so that Harvard can achieve its anti-racist and anti-xenophobic ideals.

Recommendations Regarding Salary

Harvard FAS recently changed its salary policy (for FY 2023) to adopt the NIH NRSA pay scale for postdocs[21]. However, we note that this pay scale still falls behind our peer institutions in high cost-of-living areas such as Boston (e.g., HMS, MIT), New York (e.g., Columbia, Rockefeller), and the Bay area (e.g., Stanford and the UCs) **(Table 3)**.

[21] https://www.niaid.nih.gov/grants-contracts/salary-cap-stipends

Table 3. Minimum compensation for postdocs at Harvard and peer institutions for FY2022. NB: FY2023 Y0 minimum salary for Harvard FAS is $56,484 per the NIH NRSA scale.

	2022 Y0 Minimum Salary	**2022 Y7 Minimum Salary**
Harvard FAS	***$52,000***	***$52,000***
Yale University	$56,448	$63,819
Brown University	$56,484	$68,604
Cornell University	$56,484	$68,604
School of Public Health, Harvard	$58,859	$70,976
Columbia University	$60,000	$69,446
UCs	$60,000	$71,952
Harvard Medical School	$60,000	$71,000
Rockefeller University	$63,000	$63,000
Princeton	$65,000	$65,000
MIT	$65,000	$65,000
Stanford	$68,238	$69,695

This discrepancy between Harvard and its peer institutions likely makes it more difficult for Harvard to recruit and retain a diverse and talented pool of postdocs in a city with a high cost of living. In support of this idea, over 75% of postdocs leaving Harvard in the next year said that salary was a driving factor in their decision, with 52.8% saying it was a "significant sway towards leaving" **(Figure 11)**.

We therefore recommend that Harvard adopt the US federal government's General Schedule (GS) pay scale[22] as a postdoc minimum. Unlike the NIH NRSA scale, the GS scale is adjusted for cost-of-living, which is necessary to fairly compensate postdocs here in the second-most-expensive rental market in the country[23]. Furthermore, the GS scale changes yearly to account for inflation, and should obviate the need for FAS to make yearly adjustments to salary policy. Finally, the GS scale is used to pay employees funded from tax payer money. We recognize that it is likely not possible for academic salaries, which are largely funded from

[22] https://www.federalpay.org/gs/calculator
[23] https://www.bloomberg.com/news/articles/2022-10-25/nyc-is-priciest-for-us-rents-while-boston-passes-san-francisco?utm_source=twitter&utm_medium=social&utm_campaign=twitter-moments&utm_content=wealth&leadSource=uverify%20wall

grant money, to be as high as salaries in industry (on the order of $120K for a starting salary[25]). However, postdocs, who are largely paid from federal government grants (i.e., taxpayer money) can surely be compensated similarly to those paid to do similar work for the government. We recommend that Harvard adopt the GS-11 scale[24] **(Table 4)**, given that this is the recommended minimum salary scale used for federal positions requiring a PhD. We also note that this salary range is comparable to that recommended for postdocs in a recent *Nature Biotechnology* publication[25] that analyzed the cost of living in greater Boston to promote the retention of postdocs. Finally, we note **(Table 3)** that the majority of peer institutions use a scale system to account for increasing experience and to incentivize postdocs to remain in their jobs rather than leaving quickly for industry.

Table 4. GS-11 pay scale adjusted for greater Boston for FY23[34].

	Y0	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**
GS-11	$77,738	$80,328	$82,919	$85,510	$88,101	$93,283	$93,283	$95,874

In summary we recommend Harvard FAS/SEAS:

(1) Raise the official salary minimum to the GS-11 scale, with salary increases for each year of experience, beginning FY2024.
(2) Following the lead of MIT[26] and Princeton[27], use endowment funds to provide bridge funding to increase to the GS-11 scale for all PIs for the first year and for those who need it for the next fiscal year.
(3) Monitor the salary discrepancies between different demographic groups, in particular based on international status and race, with a goal of eliminating such discrepancies.
(4) Review postdoc hiring and contract renewal practices and create guidelines for faculty to mitigate race- and international-status-based salary discrepancies.

[24] https://www.federalpay.org/gs/2023/GS-11
[25] https://www.nature.com/articles/s41587-023-01656-4
[26] https://orgchart.mit.edu/letters/new-minimum-salarystipend-postdocs#:~:text=It%20is%20with%20that%20context,will%20be%20%2465%2C000%20per%20year.
[27] https://postdocs.princeton.edu/postdoc-faqs

VII. *Savings & Retirement*

Part A: Results

Postdocs that earn higher wages are more likely to save money

We asked postdocs two questions related to savings – whether they could save money and if they were able to save for retirement. Unsurprisingly, postdocs reporting being able to save money had a significantly higher salary than those who could not (**Figure 17**; Welch test, P = 0.04). The median pre-tax salary of postdocs reporting being able to save money was $60,000, while the salary of postdocs who could not was $58,250. We observed no significant differences in ability to save money when accounting for gender, averaging 53 ± 1% for men and women.

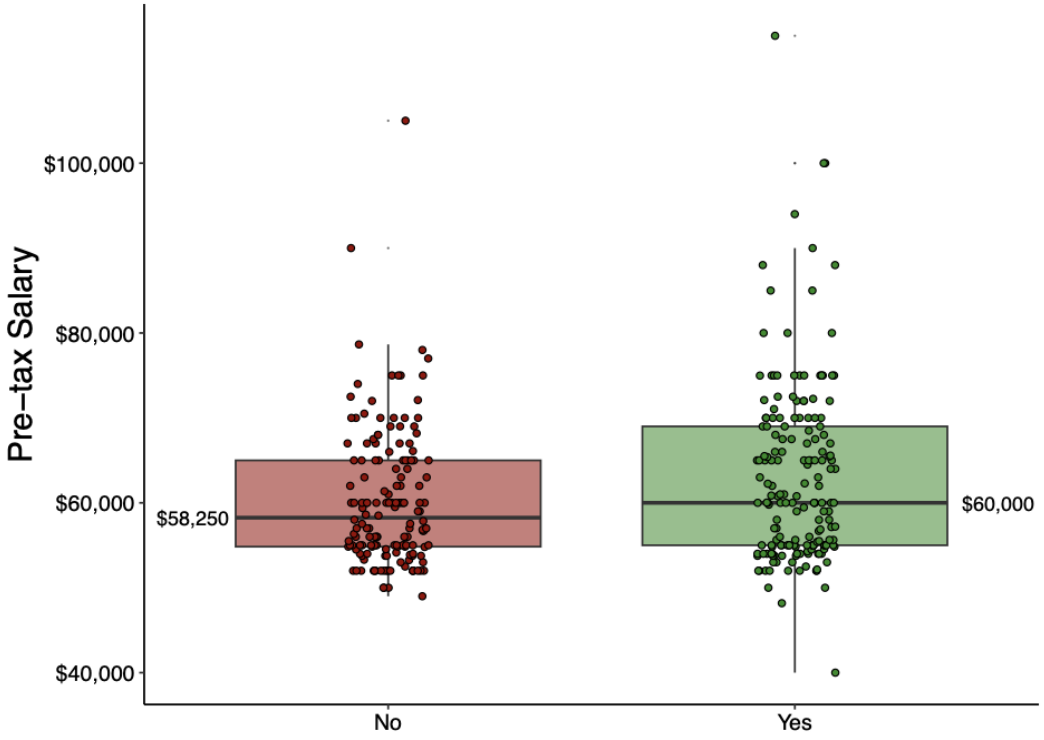


***Figure 17**. Salaries of FAS postdocs and self-reported ability to save money.*

Postdocs in STEM divisions are 1.6x less likely to save for retirement

We found that postdocs in the Arts & Humanities and Social Science Divisions are 1.6 times more likely to save for retirement than postdocs in SEAS and the Science Division **(Figure 18)**. This is likely attributable to higher wages received by postdocs in the Arts & Humanities (median salary $65,000) and Social Sciences ($65,000) versus Science ($58,000) and SEAS ($59,230).

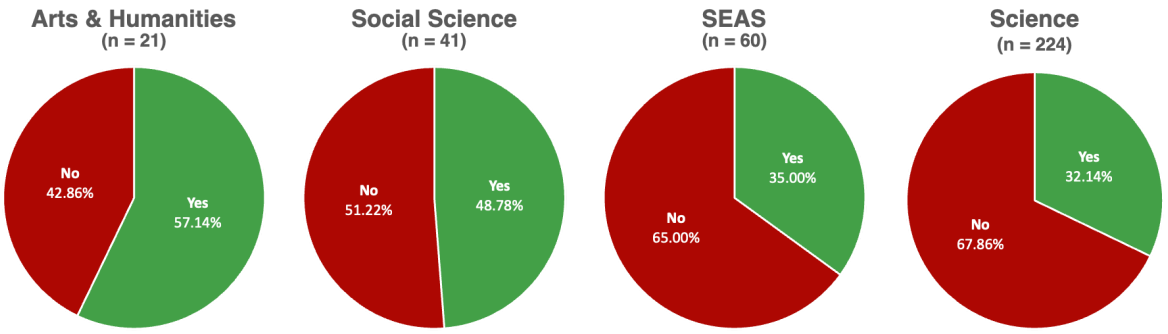


***Figure 18**. Self-reported ability of postdocs to save for retirement by division.*

We found that postdocs in life sciences departments were amongst the least likely to save money in the Science Division **(Figure 19)**. These data parallel findings from our 2021 survey that revealed life sciences departments also habitually paid the lowest wages to postdocs in the FAS. The inability to save money despite salary increases in 2022 corroborates our claim that such wage increases were not sufficient, even if they matched inflation, because the affected postdocs were underpaid to begin with.

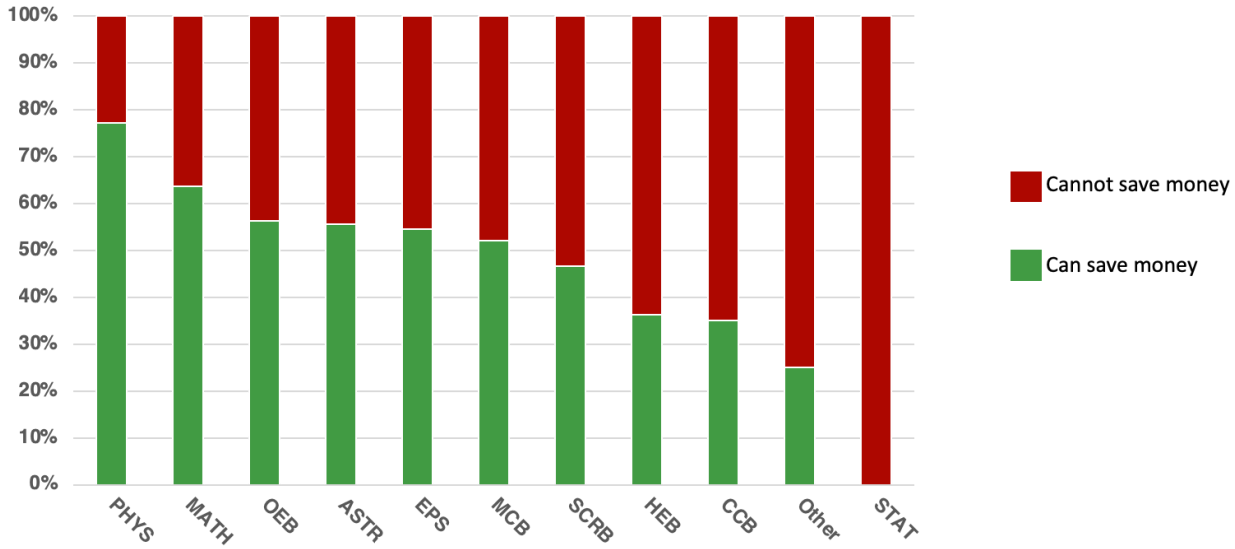


***Figure 19.** Ability to save money within the Science Division*

The ability to save money is linked to benefits eligibility and financial safety nets

We observed that 53.1% of postdocs who are Harvard benefits eligible reported that they could save money. By comparison, only 47.6% of postdocs who are not Harvard benefits eligible reported they could afford to save money. (For more information on benefits eligibility, refer to **Section VIII.**) We also found a significant positive correlation between ability to save money and annual household income (**Figure 20**; Pearson correlation, r = 0.97, $P < 0.001$). Fewer than 43% of postdocs reported being able to save money if they lived in households making less than $100,000/year. This number increases dramatically if postdocs live in a wealthier household. Fifty-eight percent of postdocs could save money in households earning

>$100,000/year, 75% in households earning >$150,000/year, and 92% in households earning >$200,000/year.

Assuming the median FAS postdoc salary of $60,000, these data indicate that postdocs who are able to save money can only do so because of some degree of financial dependence on higher wage earners at home (e.g., a partner or spouse). **This reveals an unsavory reality: the low compensation of a Harvard FAS postdoc is only financially tenable for the independently wealthy or those with a financial safety net**. Postdocs who do not live in households with partners earning significantly higher annual incomes are systematically more likely to live paycheck to paycheck and carry debt.

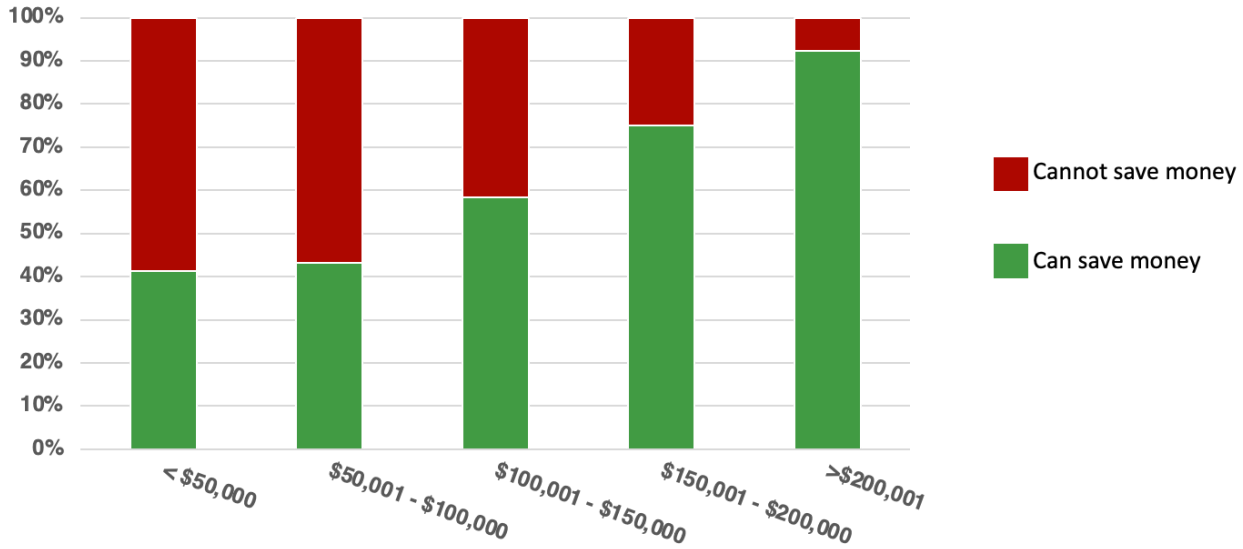


***Figure 20**. Ability to save money versus annual household income*

Postdocs of Color are disproportionately unable to save money

Our survey results also revealed systemic inequities across race in ethnicity with regards to ability to save money. We found that white postdocs were significantly more able to save money than non-white postdocs (one-tailed Fisher test, $P = 0.03$) (Table 5). **These findings indicate that Harvard FAS' poor postdoc compensation only exacerbates pre-existing socioeconomic inequities:** Not only are people of color less likely to have access to generational wealth and thus voluntarily accept the financial stresses associated with low postdoc pay (as evidenced by lab of representation in the postdoc population), they are, indeed, more likely to be in greater financial stress than white colleagues as a direct result of accepting that position.

Table 5. Self-reported ability to save money.

	Can Save Money	Cannot Save Money	Total Responses
White	**54.77%**	**45.23%**	**199**
Non-White	**50.26%**	**49.74%**	**187**

Part B: Discussion

Modeling Postdoc Financial Stability

A generalized poisson logistic regression was fitted to salary data to generate a savings probability model for the range of salaries reported in the FAS **(Figure 21)**. The regression model had high predictive fidelity ($R^2 = 1$). **For a postdoc with no dependents earning Harvard FAS' minimum postdoc salary in 2022 ($52,000), this model predicts only a 47% probability of being able to save money.** This probability increases marginally to 48% with the FAS' implementation of the NIH NRSA recommended minimum effective January 1, 2023 ($56,484). To overcome the 50% likelihood threshold, the model predicts that a postdoc with zero dependents would need a pre-tax salary of at least $60,526. A Y0 postdoc paid on the GS-11 scale, earning $77,738, would increase this probability to 57%. **These findings further validate the reasonableness of our GS-11 scale salary recommendations**, offering an opportunity for incoming scholars to not feel forced to volunteer for financial stress when they accept postdoctoral positions at Harvard.

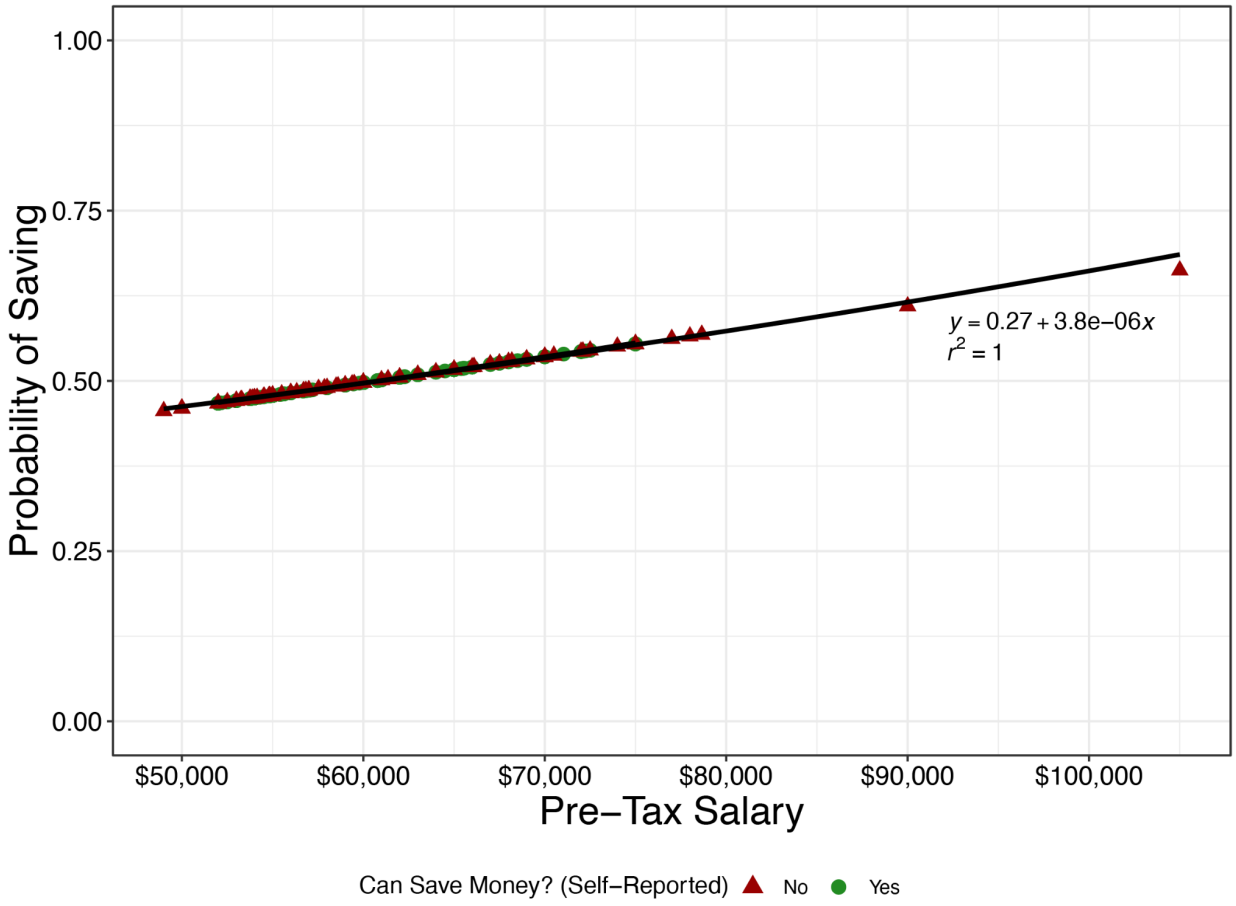


***Figure 21**. A generalized poisson logistic regression model fitted to self-reported salary and savings data. The model predicts the likelihood of being able to save money for a given salary for an individual with no dependents.*

Financial stability is directly tied to postdoc happiness and productivity

We found a strong correlation between postdocs' reported happiness and ability to save for retirement (**Figure 22**; Pearson correlation, r = 0.95, $P < 0.001$).

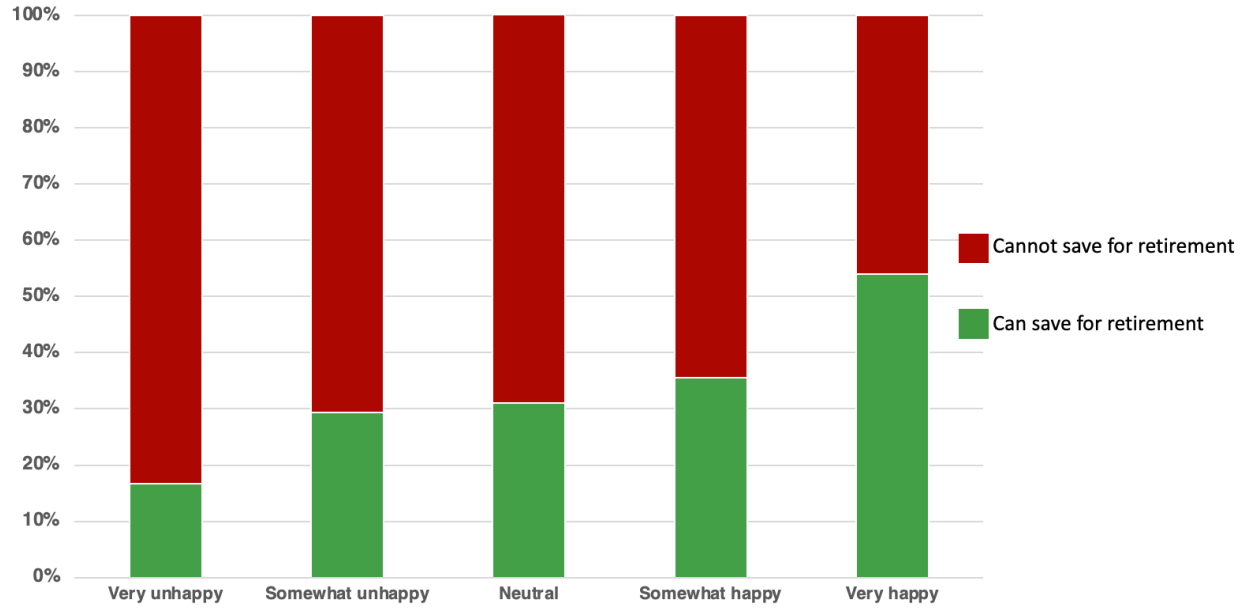


***Figure 22**. Self-reported happiness with work-life balance with respect to being able to save for retirement.*

These findings highlight how the FAS' current salary policy is exploitative and exacerbates the cycle of poverty. Notwithstanding our findings of FAS' pre-existing inequities in pay across race and international status, the undercompensation of postdocs as a whole creates a snowball effect wherein socioeconomic background becomes the greatest predictor in determining postdocs' research productivity, happiness, and likelihood of staying in academia. It is no wonder that the postdoc population in FAS and SEAS has remained woefully homogeneous – exploitative salaries will not attract a well-qualified, diverse workforce, especially when better financial prospects are nearby. This contemporary crisis in inequality bears disturbing similarity to Harvard's acknowledged legacy of benefiting greatly from the exploitation of historically marginalized groups[28]. Harvard's forward-looking mission to bring about a legacy of inclusive excellence will ever only be as excellent as the plight of its most underprivileged members. As the university's publically reckons with its ignominious past, so must it also be mindful not to perpetuate policies that demonstrably preserves inequality. Harvard's legacy of leveraging its prestige as a form of compensation at the negotiating table is not sustainable if it truly prioritizes inclusive excellence. If we are to see a more diverse Academy within the coming decades, it is up to Harvard to lead the charge. Salaries must be competitive to give every postdoc, especially those from underrepresented groups, a seat at the table and a chance to break the cycle of poverty.

[28] https://news.harvard.edu/gazette/story/2022/04/slavery-probe-harvards-ties-inseparable-from-rise/

VIII. *Benefits Eligibility, Healthcare, and Child Care*

Part A: Results

Benefits Eligibility and Savings

We found that each division within the FAS hosts roughly equivalent distributions of benefits-eligible postdocs, while the majority of benefits-ineligible postdocs were paid by external fellowships **(Figure 23)**.

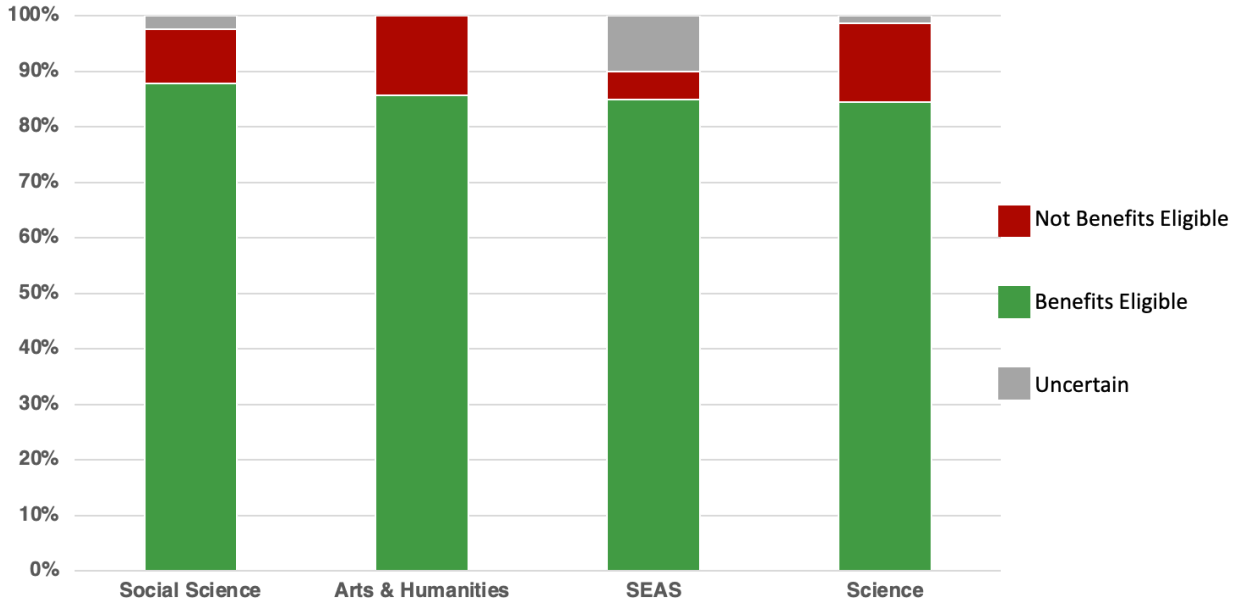


***Figure 23**. Harvard benefits eligibility across divisions.*

As mentioned previously, the inability to save money was linked to being ineligible for Harvard benefits. **Ironically, this means that the prestige of earning competed external funding (e.g., certain NSF Postdoctoral Fellowships[29]) actually coincides with increased financial strain (Figure 24).** This is counterintuitive and counterproductive: external fellowships are traditionally regarded as a postdoc's gateway to increased intellectual and financial freedom. While this may be the case for postdocs in lower cost of living areas, the opposite is true at Harvard. Financial burdens are only exacerbated for postdocs on external fellowships, as their benefits ineligibility directly results in higher out of pocket expenses for lower quality healthcare coverage.

[29] https://www.nsf.gov/pubs/2022/nsf22623/nsf22623.htm

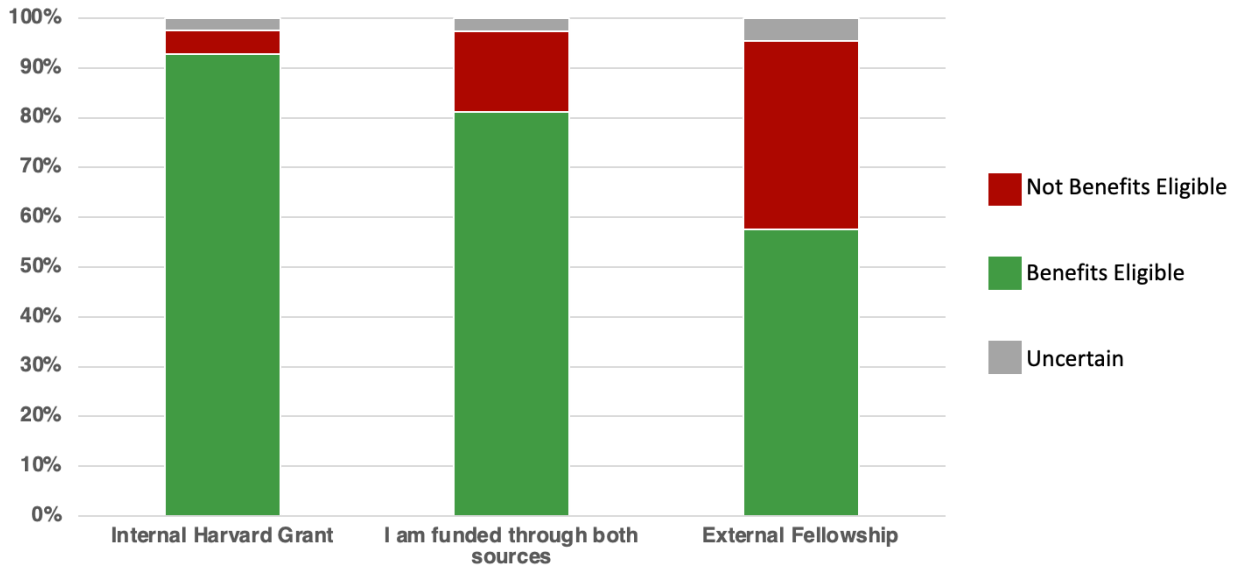


***Figure 24**. Harvard benefits eligibility by funding source*

Externally-funded postdocs who are not benefits eligible are unable to save money because their disposable income is disproportionately spent on healthcare **(Figure 25)**. Whereas Harvard substantially subsidizes health insurance packages for benefits-eligible employees[30], postdocs who are not benefits eligible are required to seek their healthcare elsewhere. For those who are fortunate enough to be included on their spouse's policy, this results in a net increase in the likelihood that they can save money. Postdocs who must purchase their healthcare out of pocket are ~20% less likely to save money.

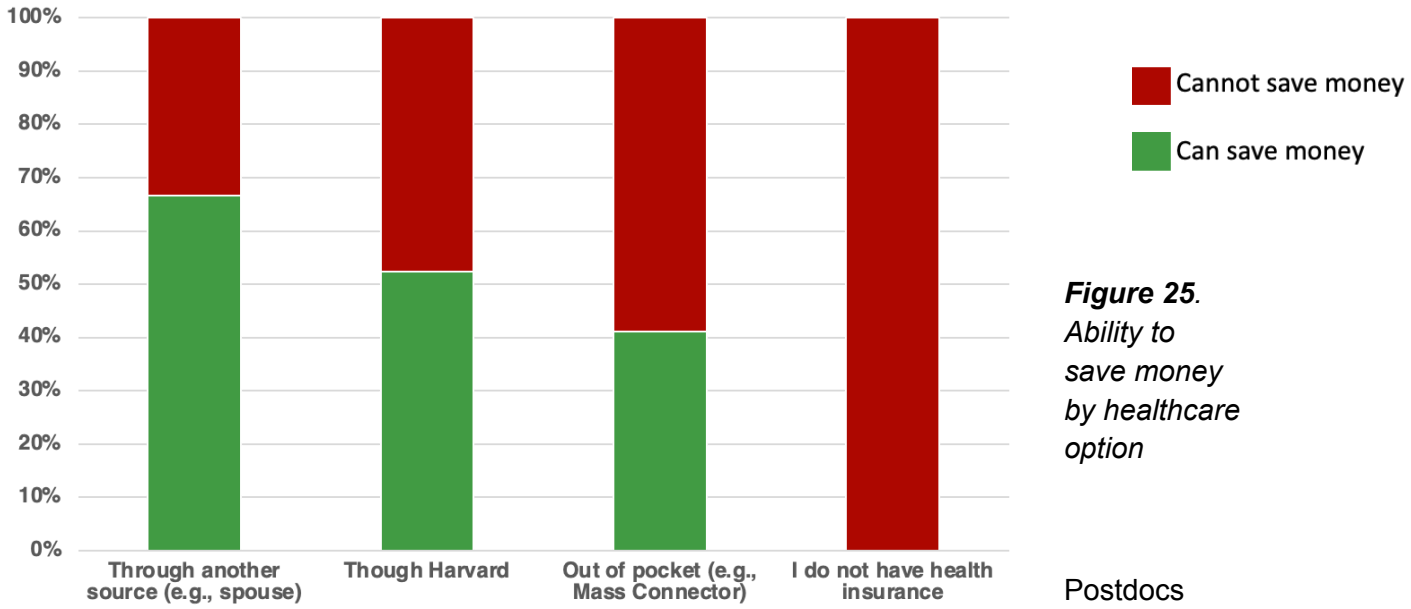


***Figure 25**. Ability to save money by healthcare option*

Postdocs were also

[30] https://hr.harvard.edu/health-welfare-benefits

asked about their satisfaction with their health insurance. Notably, respondents paying out of pocket for health insurance also reported decreased satisfaction with their insurance policies **(Figure 26)**.

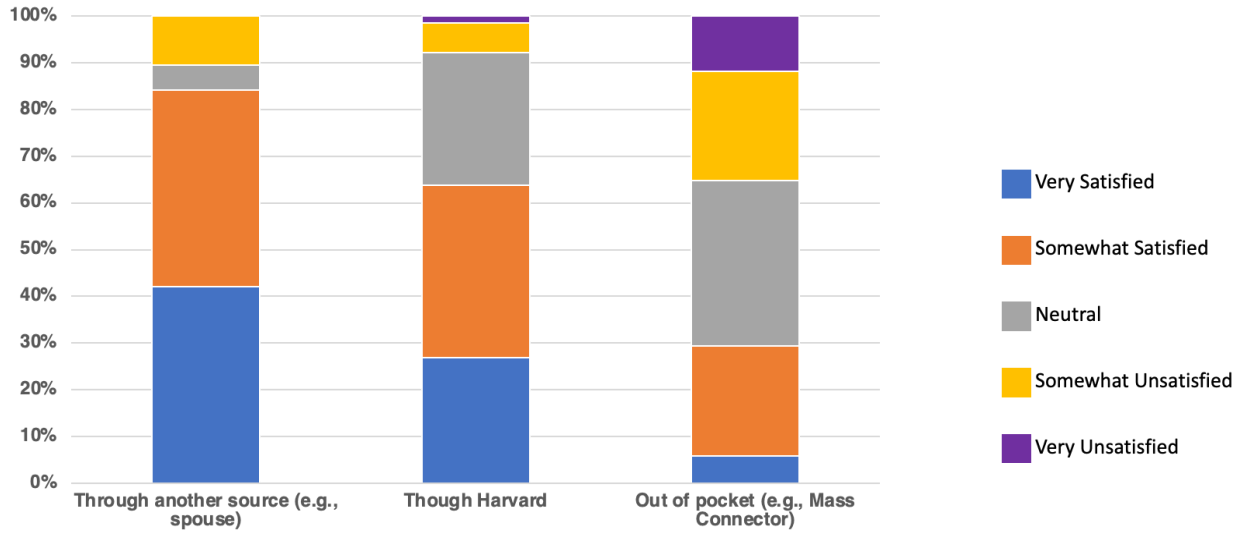


***Figure 26**. Satisfaction with healthcare options*

Child Care

We asked postdocs completing the survey whether they had financial dependents. Over half of respondents (53%) reported not having any financial dependents. Almost 20% did not answer the question, while the remaining 27% reported having either partner/spouses, children or parents they are providing for financially **(Figure 27)**.

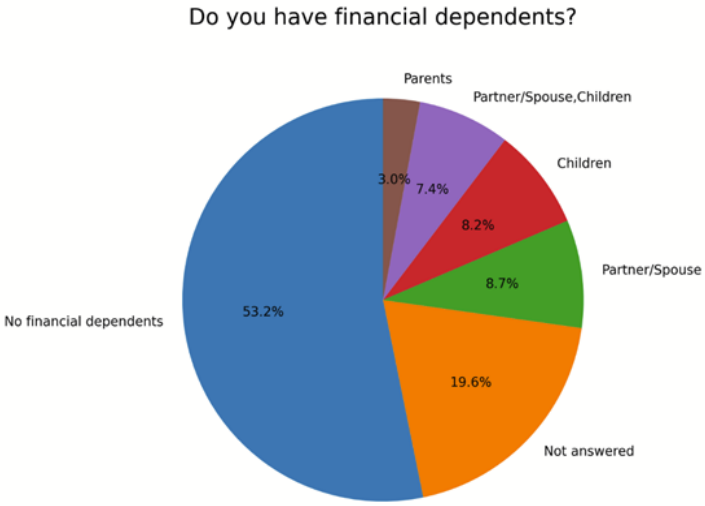


***Figure 27**. Distribution of postdocs with dependents*

Of the 68 postdocs that reported having children, 51% are male and 47% are female (one person preferred not to answer the question). Exactly half of the postdocs who reported having

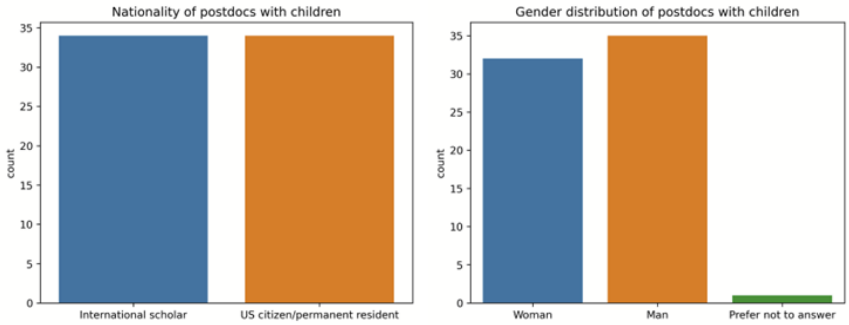


***Figure 28**. Nationality and gender of postdocs with children*

children are international scholars (n = 34), while the other half are citizens or permanent residents of the US **(Figure 28)**. The majority (65%) of postdocs with children belong to the FAS Science division, which is in line with the Science division being the largest division of FAS. The racial makeup of the postdocs with children is again very similar to that of the overall postdoctoral population **(Figure 29)**, with the overwhelming majority being white and Asian (total 83%) .

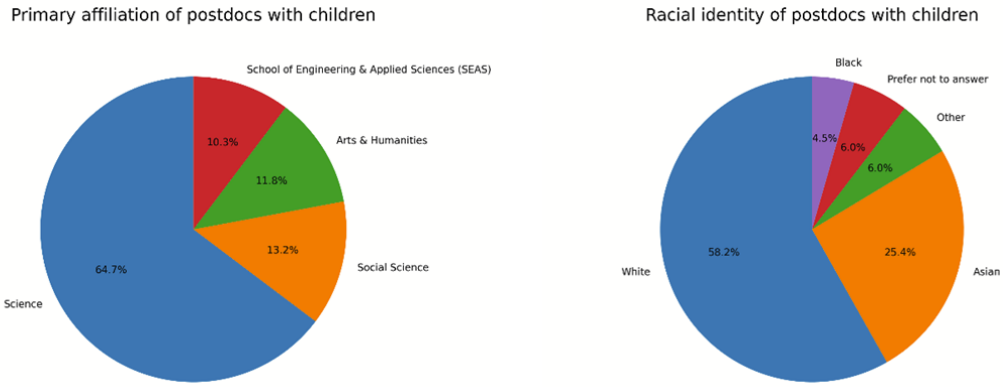


***Figure 29**. Division affiliation and racial identity of postdocs with children.*

Salary and Child Care Cost

The median self reported salary of all postdocs with children is $60,404 which is very close to the overall postdoc median salary ($60,000). The median childcare cost reported by postdocs is $20,182 which is one-third of the median pre-tax salary. When we normalized the childcare costs to the number of children the distribution changed but the median only went down slightly to $17,877 per child **(Figure 30)**.

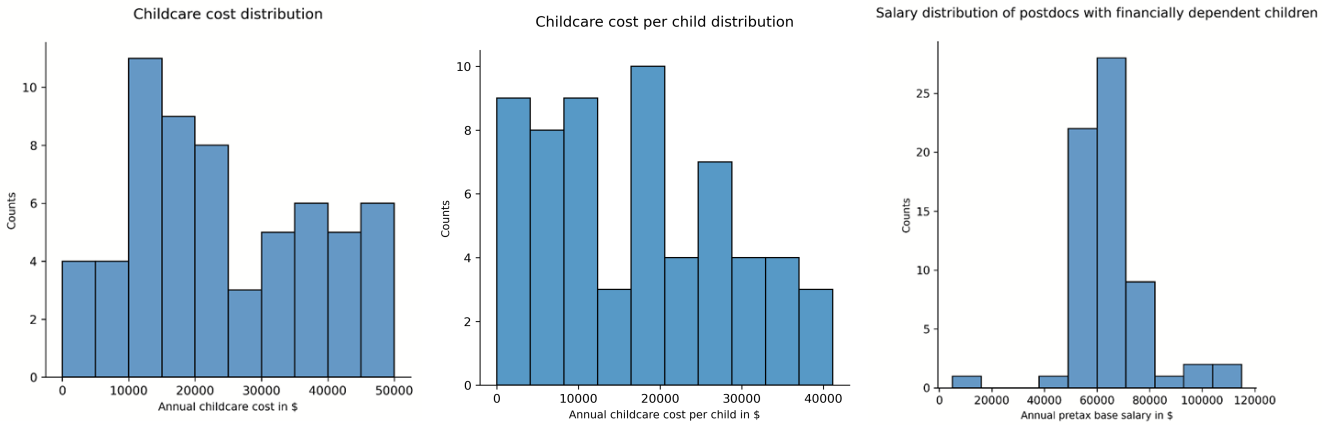


***Figure 30**. Childcare costs and distribution of salaries of postdocs with financially dependent children.*

We compared median salaries between female and male postdocs and found them very close to each other ($60,000 for men, $61,180 for women). However, when we looked at childcare cost by gender we found that women spend a median of $30,098 while the median for men is only $15,084. **This striking difference persists when we normalize childcare cost to the number of children ($22,137 for women, $12,011 for men) (Figure 31)**.

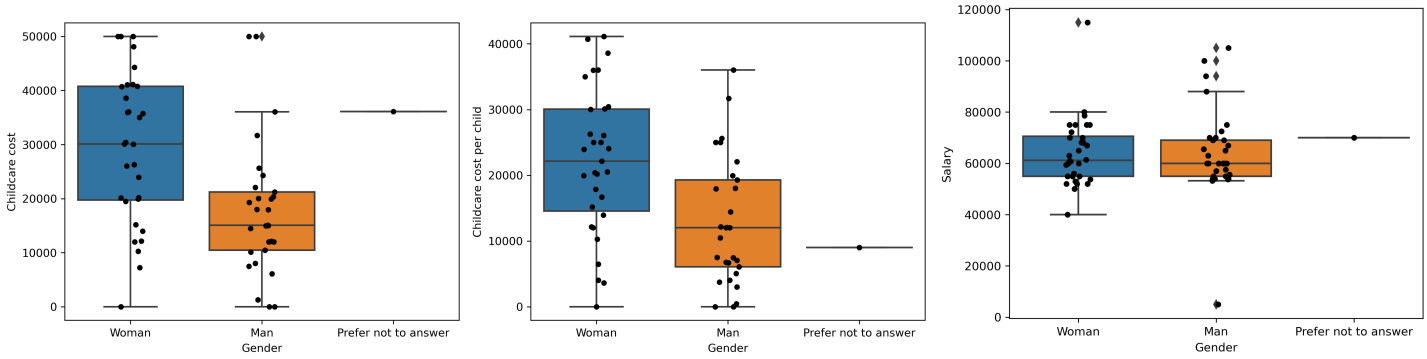


***Figure 31.** 2022 salary and childcare cost distributions of postdocs by gender. Using a one-way ANOVA we found no significant effect of gender on salary of postdocs with children. However, there is a highly significant ($p<0.01$) effect of gender on childcare cost.*

We broke the analysis further down to look if there is a difference between international scholars and US citizens/permanent residents. We found that female international scholars with children (n = 17) make a median pre-tax salary of $60,000 while male international scholars (n = 17) only make $57,525. US residents/ permanent residents with children make more money: women (n = 15) reported a median pre-tax salary of $65,000 while men (n = 18) reported $60,014.

The gender difference in childcare cost persists in the international scholar community (median child care cost of $30,258 for women, $12,011 for men). US Citizens/permanent residents spend very similar amounts on child care (median of $20,112 for women and $19,989 for men). When we normalize the childcare costs to the number of children this difference intensifies. International women spend a median of $24,477 per child while international men spend only $7,472. We found that women US citizens and permanent residents actually spend slightly less on child care per child (median $15,154) than their male counterparts (median $18,646) **(Figure 32)**.

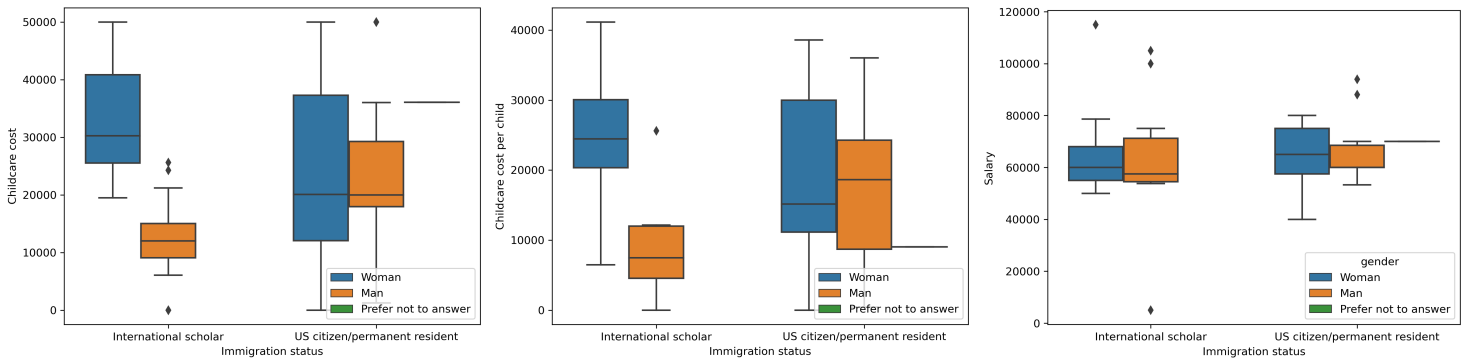


Figure 32*. 2022 salary and childcare cost distributions of postdocs by gender and immigration status. Using a two-way ANOVA we found no significant effect of gender or immigration status or interaction effects of the two factors on salary of postdocs with children. However, there is a highly significant (p<0.01) effect of gender and a significant (p<0.05) interaction effect of gender and immigration status on childcare cost*

We further checked the number of international scholars divided by gender who reported having other financial dependents than their children (e.g., partners, parents etc.). Of the 17 female international scholars, 7 reported having financial dependents other than their children. Notably, almost all of the male international scholars reported financial dependents in addition to their children (15 out of 17). **This suggests that international male scholars are much more likely to have financially dependent partners who are not working (or not able to work due to immigration status), who in turn provide child care, thus reducing inherent childcare costs.** Within the US citizen/permanent residents this gender difference persists but noticeably less so: only 4 out of 15 Women and 9 out of 18 Men reported having financial dependents in addition to their children.

We also looked at household income and found that the majority of men with children live in households with incomes between $50,000-100,000 while the majority of women have a household income between $100,001-$150,000. **These results would suggest that postdoc women with children are financially dependent on a partner with a larger take-home salary**. In terms of child care costs, there is a clear trend linking higher household income with higher childcare costs **(Figure 33)**.

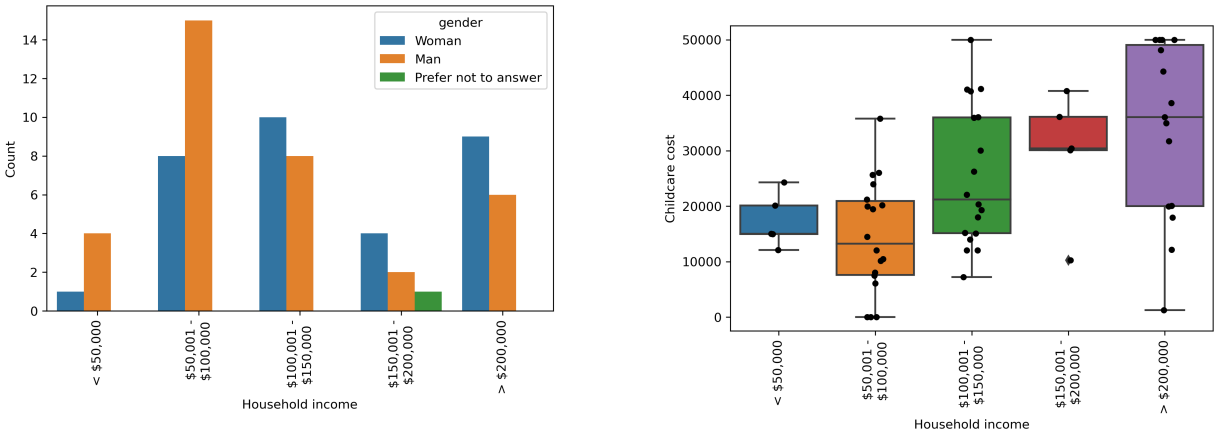


***Figure 33**. Household income of postdocs with dependents and associated child care costs.*

Harvard Child Care Benefits

We asked postdocs with children whether they qualify for child care benefits offered by Harvard. The majority (58%) answered that they do not. The most common reason they indicated was a household income of over >$130,000. However, almost 20% answered that they cannot apply for the benefits because they are not Harvard benefits eligible **(Figure 34)**.

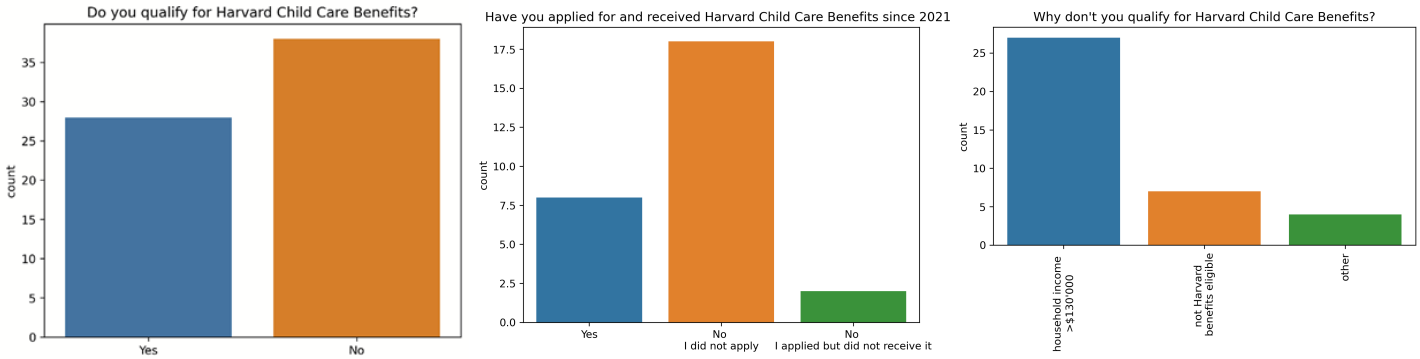


***Figure 34**. Harvard child care benefits eligibility*

Of the 68 postdocs with children that filled out our survey, only 8 have received Harvard child care benefits since 2021. The amounts they received are listed in **Table 6**. Compared to the median child care costs, they are relatively low and they cover on average only 15% of the child care costs of the postdocs who received them.

Table 6. Distribution of postdocs with Harvard child care benefits.

Child care benefit yr^{-1}	# Recipient Postdocs
$1,800	2
$1,880	1
$2,000	2
$5,000	2
$8,000	1

Child Care and Academic Life/ Career

We found that an overwhelming majority of postdocs with children (75%) feel that their productivity at work has been affected by the stresses of finding appropriate child care. Additionally, a majority of postdocs reported that access to childcare was negatively affected by the COVID-19 pandemic **(Figure 35)**.

When we asked the postdocs to elaborate on the topic we got some of the following answers:

"It is very hard for me to get experiments done outside daycare hours"

"...meetings and lab work outside of the 9-5 hours require additional backup childcare."

"Weekend experiments or timed experiments that go beyond 9-5 is a constant source of stress."

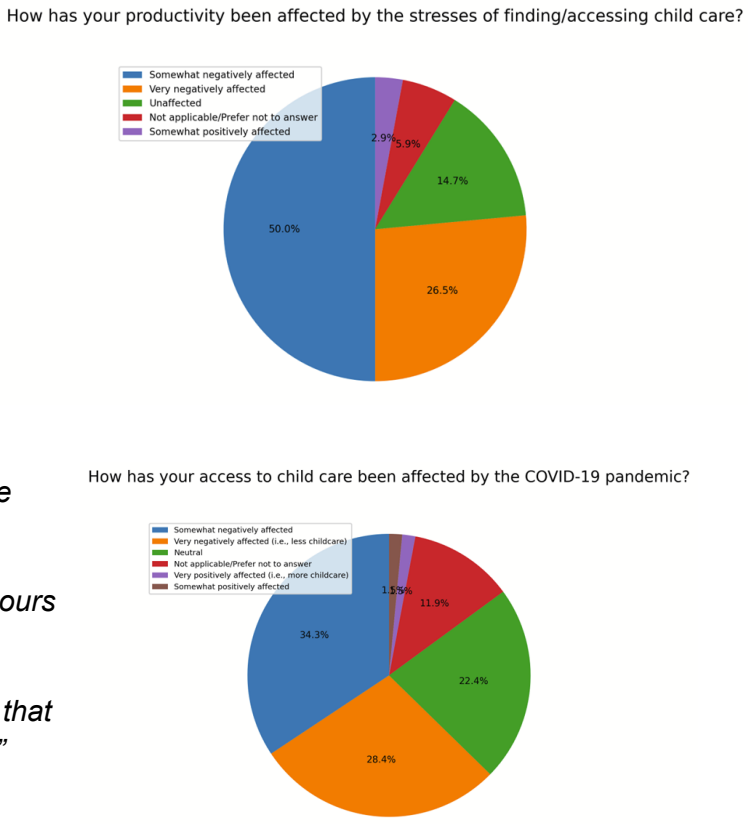


***Figure 35**. Productivity of postdocs with childcare and impact of COVID-19*

In short: many postdocs find that coordinating their work schedules (often lab work) with child care responsibilities is challenging and impacts their productivity.

Additionally, a quarter of postdocs reported that the non-traditional work schedule has impacted their ability to secure child care. A majority of the postdocs with children reported that their PI is supportive towards them as a parent but there is a small subset of 13% whose PI is unsupportive **(Figure 36)**.

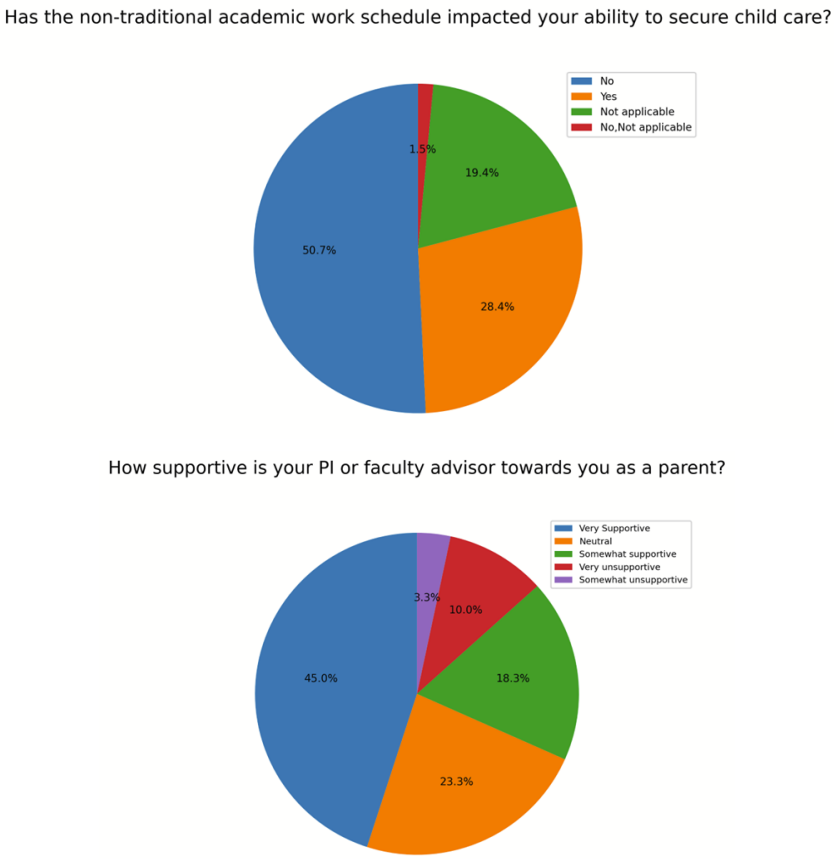


***Figure 36**. Child care security and PI supportiveness of postdoc parents*

Comments on how Harvard can better support postdocs with regards to childcare?

<u>Related to Harvard childcare benefits</u>

"Harvard should provide more childcare funding. I make $70,000, and childcare costs me $30,000 for my two children who are younger than school-aged."

"Higher childcare scholarship amount"

"The childcare fellowships are great and very helpful but it is not great that people don't receive the whole amount. It shouldn't be taxable income…."

“Benefits (e.g., subsidized commuter passes) currently being offered only to Harvard funded postdocs may be extended to the postdocs funded by external funding bodies as well. “

“more funding”

“increase the income cap!”

Related to accessibility of child care

“Support with finding daycare, have daycare offered to postdocs at reduced rates like MIT does.”

“Making backup childcare more accessible would greatly improve my productivity”

“We need more childcare facilities in Cambridge reserved for Harvard employees. The current number of daycares are definitely not enough.”

“Providing and affordable child care near campus”

“Need more Harvard-affiliated centres! The waitlist is YEARS -- unacceptable”

“Make on-campus childcare more accessible and more affordable! There is a great need. And it is very, very helpful to have childcare close to the workplace.”

Greater Boston is the third-most expensive place in America to raise a child, behind only Washington, D.C. and San Francisco[31]. Many postdocs find that there should be more financial support for childcare (either by increasing childcare benefits or by providing subsidized child care spots) and more available childcare options close to campus.

FASPDA Recommendations Regarding Benefits, Health Care, and Child Care:

1) Make every FAS postdoc benefits eligible, enabling equitable access to affordable healthcare, child care, transportation subsidies, and retirement planning.
2) Following the lead of Yale, allocate central funding to provide benefits to those not currently benefits eligible.
3) Auto-enroll postdocs into the 2001 Staff Retirement Program, enabling access to employer contributions.
4) Offer postdocs the same child care benefits options as faculty. Raise the maximum household income threshold for access to Harvard child care benefits and increase child care benefits subsidies. Make on-campus/close to campus child care more accessible by increasing the number of available spots for children of postdocs.

[31] https://www.bostonglobe.com/2023/01/31/business/new-data-show-middlesex-norfolk-counties-have-some-highest-child-care-costs-us/

IX. *International Scholars*

In our survey, we identified a number of issues specific to FAS International Scholars, which impede their ability to succeed as postdocs at Harvard. International scholars made up 56.5% (214 respondents) of postdocs in our 2022 survey **(Figure 37)**. This is similar to 2021 (55.2% international), though remains slightly decreased from 2020 (61.3% international). As remarked in our previous report, while this decrease is not statistically significant, it might correlate to continued difficulties in visa processing faced by international postdocs due to COVID-related immigration policies.

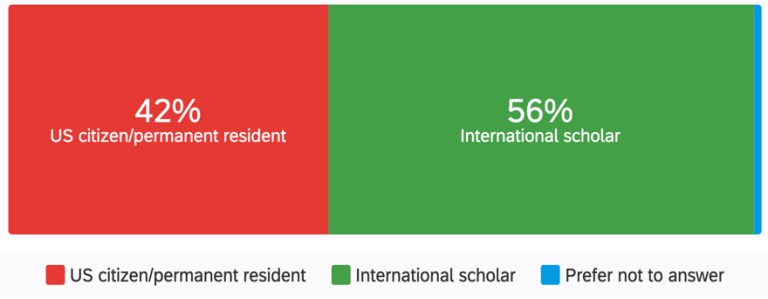


Figure 37. *2022 survey data of the proportion of FAS postdocs who are US citizens or permanent residents compared to those working on a temporary visa.*

Visa categories and associated issues

About 68% of international postdocs hold a J1 visa **(Figure 38)**, which is a non-immigrant visa category designed for short-term exchange scholars. As such, the J1 visa imposes additional restrictions that can interfere with postdoc progress compared to other visas. For instance, J1 visas often require mandatory home-country residence after completion of the visa , necessitating a long process to acquire waivers. Thus, while the J1 is flexible, it does not give Harvard postdocs any US status security even after working in the US for 5 years. It also does not support them for transitioning to other academic/industry positions within the US after finishing their postdoctoral fellowship.

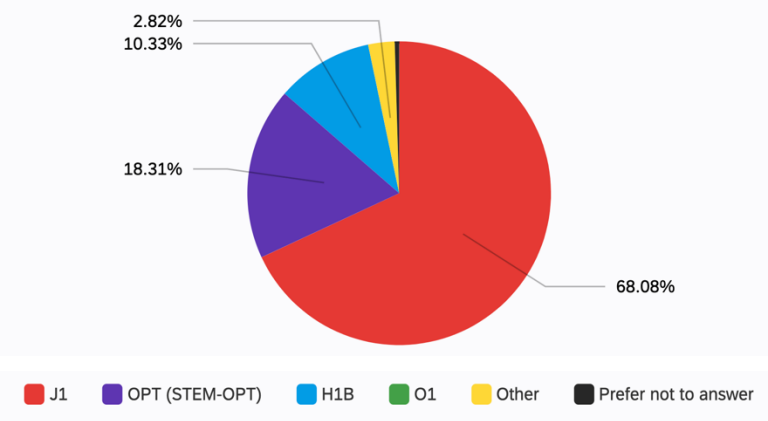


Figure 38. *Visa type breakdown among international scholars.*

About 18% of international postdocs are on OPT/STEM-OPT visas. These are training programs designed to promote international students who obtained US degrees to get practical training to complement their education. Similar to the J1 visa, there are restrictions on OPT/STEM-OPT that hinder job security and US status security. An OPT status can only be maintained for a maximum of 3 (1 year on OPT and 2 years on STEM-OPT). After those 3 years, these postdocs need to switch to a different visa category.

Only 10.3% of international scholars hold H1B visas, a dual-intent visa category which offers more resident security and immigration benefits. The percentage of FAS postdocs with H1B has also decreased slightly to 10.3%, compared to 12% in 2021's survey. We have seen postdocs transitioning to a H1B visa after being a postdoc for a year, indicating that this can be a viable route for those who seek a dual-intent visa.

Given the uncertainties brought by J1 status, it is important to offer Harvard postdocs on OPT/STEM-OPT the possibility to switch from H1B to O1 directly. Switching to J1 requires a consular visit outside of the US, which can be very difficult because of ongoing immigration processing delays in many countries. Postdocs from some countries are also more likely to get flagged for administrative processing, which can take anywhere from 3 weeks to an indefinite period. Other options include utilizing TN visa where applicable.

Anxieties associated with visa status

About 70% of international postdocs reported their productivity being negatively influenced by the extra tasks associated with being an international scholar **(Figure 39)**, such as immigration and visa status maintenance procedures. Of those, 21.4% reported being very negatively affected and 48.1% were somewhat negatively affected. Less than 3% reported a positive effect, and only 28% indicated feeling neutral. Thus, the tasks associated with being an international scholar, particularly such as visa/immigration tasks, are a significant impediment to the success and mental health of international Harvard postdocs.

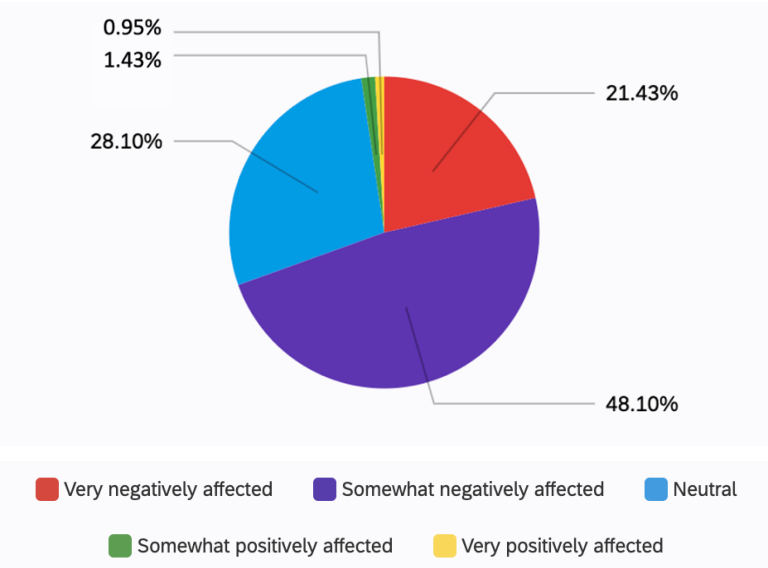


Figure 39. *Effect of the extra tasks associated with being an international scholar on productivity.*

Further, nearly half of the international scholars surveyed (48.3%) indicated that they are considering shortening their duration as a postdoc at Harvard because of uncertainties associated with their visa/immigration status **(Figure 40)**.

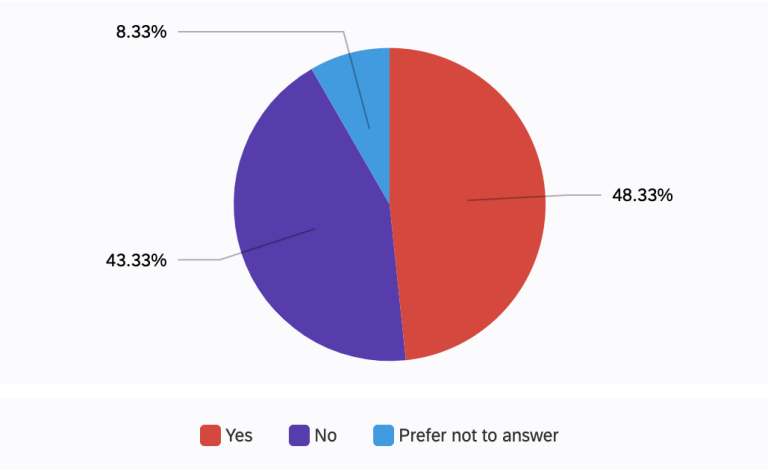


Figure 40. *International postdocs considering shortening postdoc duration due to visa status.*

We asked the postdocs an open question of how their visa status affects the duration of their postdoc at Harvard. N=29 respondents provided specific answers to this question **(Table 7)**.

Table 7. Effects of visa status on life as an international scholar.

Rank	Category	# of Answers
1.	General difficulty renewing a visa/transitioning to other visa categories	11
2.	J1-specific renewal/waiver process and associated issues	10
3.	Financial/Mental stress associated with adhering to tight immigration timelines	8

Support from Harvard Administrative Offices

We asked international postdocs to rate their level of satisfaction on the support they received from Harvard offices on important situations that an international scholar will need to navigate. We assessed satisfaction on five key areas that international scholars need assistance with: obtaining entry visas, maintaining or switching visas for continued stay in the US, obtaining social security number, accessing basic needs, and filing taxes **(Figure 41)**. In our survey, international postdocs rated highest satisfaction with the help they received in obtaining a visa to enter the US (39.2%), as well as help in obtaining a social security number (22%). International postdocs reported greatest dissatisfaction in obtaining information for filing taxes (35.9%), as well as with obtaining information about accessing basic needs such as cell phone, housing, etc. (26.6%).

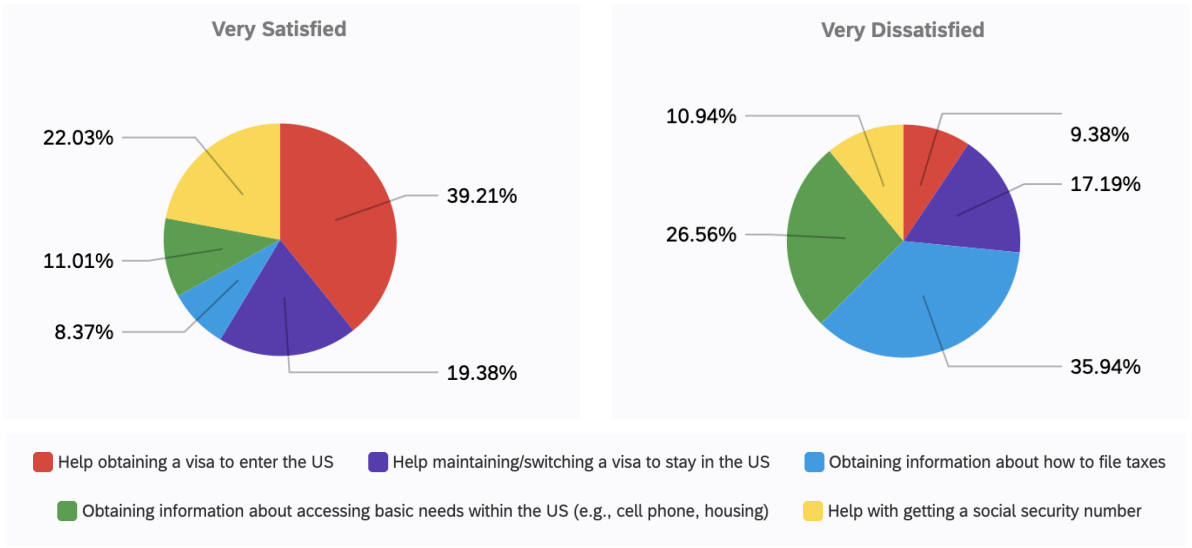


***Figure 41**. Satisfaction with assistance provided by Harvard International Office and Harvard Office of Non-Resident Alien Tax Compliance.*

We asked the international scholars about their experiences with the Harvard Non-Resident Alien Tax Compliance Office. Many issues were raised, the majority of which concerned not receiving timely response or guidance when the Tax Office is contacted. A few of the responses are provided:

> *a) Improve response time! 10 business days to answer an email is too long.*
> *b) I email them twice for help/information. Both times they took >6 weeks to respond, and gave little/no information. For contrast, every other similar office in other universities had impeccable timing (1-2 business days) as they know these matters are crucial to international scholar welfare and success. I was honestly shocked that I had zero assistance and no resources at Harvard.*
> *c) Answer faster! I sent an email last September about taxes, and got an answer in December when it was too late to act for that year.*

Other issues raised were: (i) unhelpful information on navigating tax treaties with different home countries, (ii) lack of clear guidance on various taxes to be filed (federal, state, local), (iii) confusion with assisting 'Non-Resident Alien' vs. 'Resident Alien' tax form needs (international scholar who pass substantial presence test in USA), and (iv) automatic responses that reroute to third party tax preparation software websites without directly answering the questions asked.

Suggestions for Harvard Administrative Offices

We asked open questions in the survey on how Harvard can improve international scholar experiences. Based on responses, we have provided some key suggestions to improve support for international postdocs at Harvard.

Suggestions for Harvard International Office:

1. *Issue long-term contracts to international postdocs:* Wherever possible, and following discussion with PIs and the departments, the duration of contract for international postdocs should be more than one year. The average length of a postdoc is usually 2-3 years, and international postdocs often join Harvard for multiple years. Short-term contracts in one-year increments cause significant status anxieties for international scholars.
2. *Issue H1B visas to postdocs:* We find that J1 visas may cause additional hurdles to postdoc success. Wherever possible, especially if postdocs are planning to stay for a long duration at Harvard, they should be given an option to start on H1B visas. This can be done especially for postdocs who could be subjected to mandatory home residency requirements. Moreover, postdocs who are already on J1 visa and are planning to stay for a long duration should be given an option to switch to H1B visas in consultation with their departments.

We understand that there are multiple types of postdoc appointments at Harvard with many funding limitations. However, we believe optimizing appointment lengths and visa types for individual postdocs, in consultation with the departments, can ease their stay at Harvard.

Suggestions for Harvard Non-Resident Alien Tax Compliance:

1. *Improve response rate and quality of responses provided:* We find that lack of proper response/assistance is a major issue. N=33 out of 47 total responses from international postdocs emphasized the need for improving timely responses and quality of relevant answers to their questions.
2. *Improve onboarding sessions and resources available on website:* Providing better onboarding to international scholars about their US taxes and improving resources on the Tax Office website on various topics, such as tax forms, information about treaties, etc., would highly benefit new international scholars in the US. Further, being mindful of different tax categories within international postdocs (Resident Alien vs. Non-Resident Alien) when providing tax materials and recommendations is needed.

FASPDA Recommendations to Support International Scholars

1. Standardize visa sponsorship and processing practices for all departments. Issuing long-term contract durations (2-3 years) for international postdocs and promoting sponsorship of H1B visas rather than J1 (which may have home country requirements) would better support international scholars at Harvard. We also recommend improving transparency and promoting open discussion sessions about H1B processing with international scholars.
2. Expand the Harvard International Office and Harvard Non-Resident Alien Tax Office workforce to accommodate and support the needs of the more than 8000 international scholars at Harvard[32].
3. Improve access and assistance from Harvard Non-Resident Alien Tax Office. Timely response to international scholar questions, being mindful of postdoc filing statuses such as Resident Alien vs. Nonresident Alien taxpayers, and providing better onboarding about US tax procedures overall are needed. We recommend that walk-in hours during tax season are set up, and a tax accountant who is comfortable and equipped to provide tax advice to international students and scholars is hired to host these hours.

[32] https://www.hio.harvard.edu/statistics

X. *Bullying, Harassment, & Discrimination*

Bullying, Gender Discrimination, and Racial Discrimination

We asked postdocs whether they had experienced bullying, harassment based on gender, or harassment based on race while a postdoc at Harvard. We found that bullying was fairly prevalent **(Figure 42)**, with 10.7% of postdocs reporting that they had experienced bullying behavior (no change from 10.8% from last year). Of those respondents, 61% said that they had experienced bullying from faculty, again similar to last year (63%). However, we found that reports of bullying varied greatly by department, with some departments having up to 25% of postdocs reporting experiencing bullying. We find that incidence of bullying is highest in FAS Science and SEAS, perhaps due to the nature of positions in these departments where postdocs primarily work for one faculty member or PI. Last year, departments with over 20% of respondents reporting bullying included MCB, EPS, Psychology, and SCRB. This year, these departments include two departments that also reported high levels of bullying last year, MCB and SCRB, indicating that these are departments that may have ongoing problems with bullying behavior.

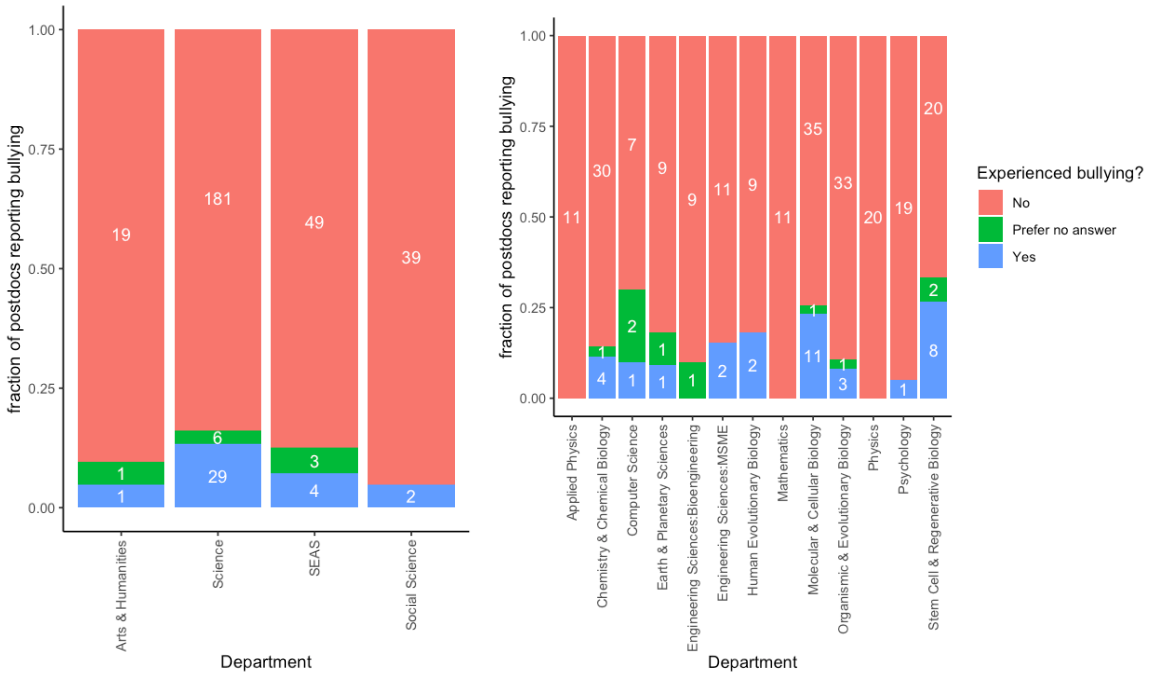


Figure 42. *Self-reported incidence of bullying by department among Harvard FAS postdocs. Postdocs were asked whether they had experienced bullying, defined as, "harmful mistreatment by words or actions that humiliate, degrade, demean, intimidate, and/or threaten an individual or group", while a postdoc at Harvard.*

Compared to bullying, postdocs reported less gender discrimination **(Figure 43)**, with only 5.0% of postdocs reporting gender discrimination or sexual harassment, though that number rises to 8.4% when only considering female postdocs. However, unlike bullying, only 23.5% of postdocs

who reported gender discrimination report discrimination by faculty, suggesting that much gender discrimination comes from peers, students, or staff in the community. This is again similar to what we observed last year. The fraction of postdocs experiencing gender discrimination varies somewhat by department, but less so than bullying.

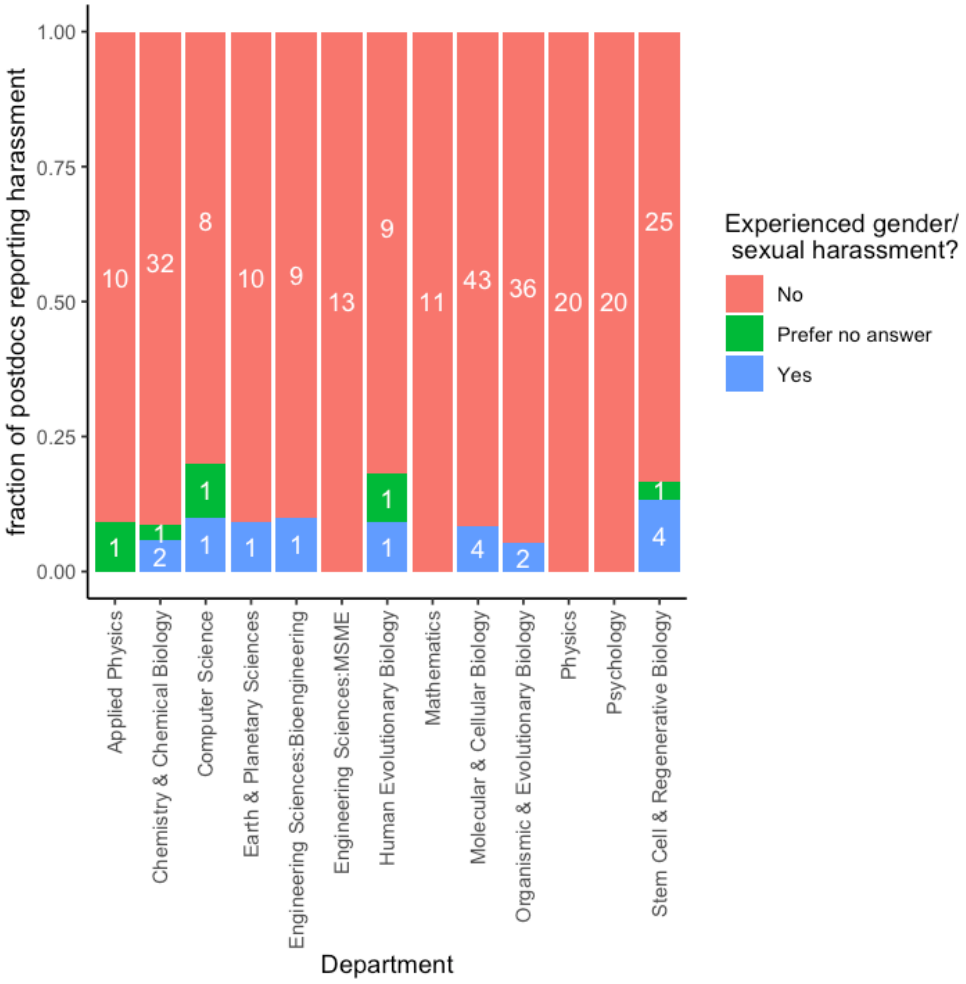


Figure 43. *Self-reported incidence of gender discrimination by department among Harvard FAS postdocs. Postdocs were asked whether they had experienced gender discrimination while a postdoc at Harvard.*

Finally, we found that reported levels of discrimination based on race were similar to levels of gender discrimination **(Figure 44)**, at 4.7%, significantly higher than the 1.3% reported last year. Like gender discrimination and harassment, and unlike bullying, only 18.8% of respondents who reported racial harassment and discrimination reported being harassed/discriminated against by faculty. Racial harassment and discrimination appears to vary widely by department, with many departments having no reports of racial harassment or discrimination and SCRB having over 20% of respondents reporting racial harassment or discrimination.

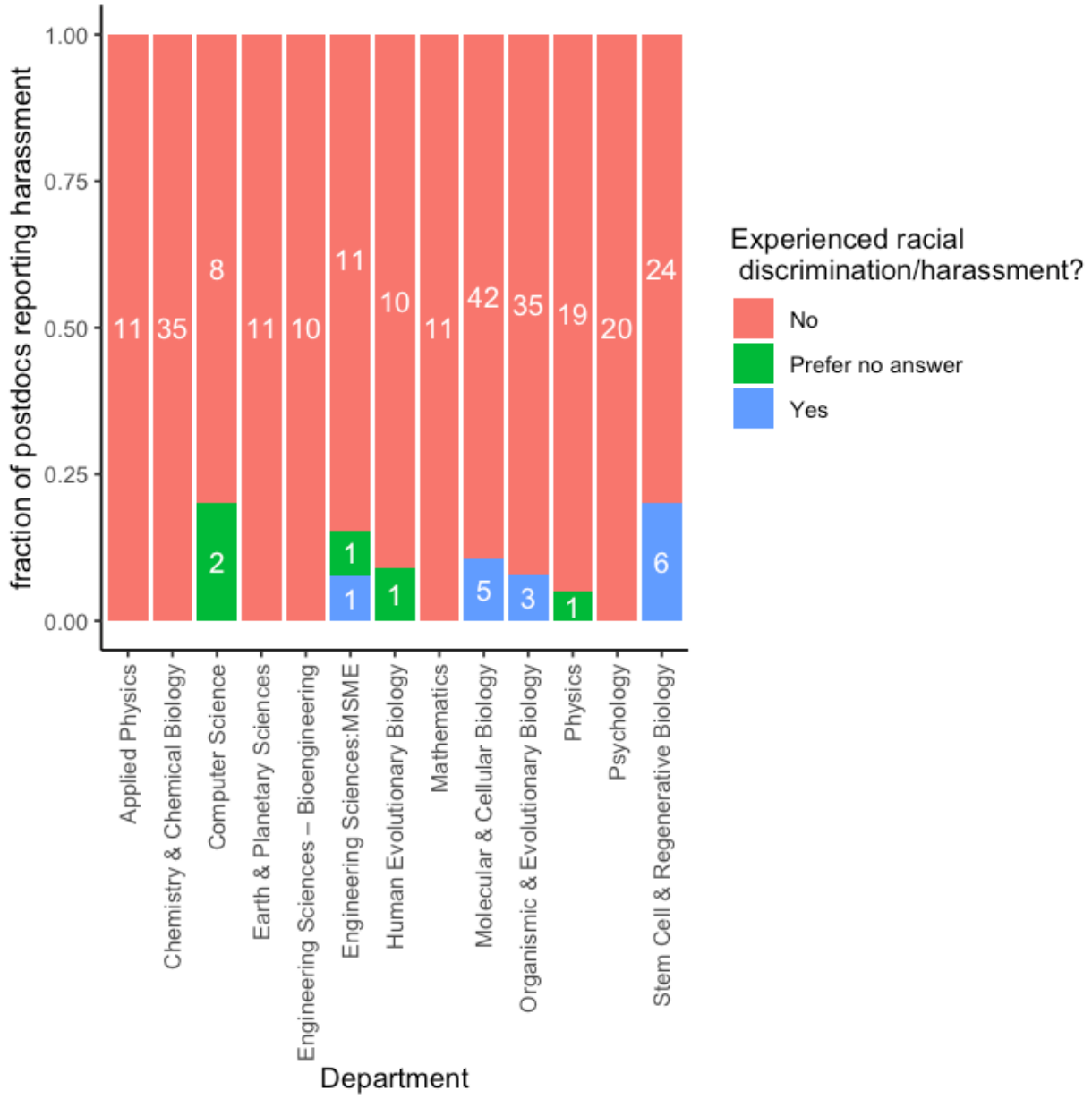


Figure 44. *Self-reported incidence of racial discrimination/harassment by department among Harvard FAS postdocs. Postdocs were asked whether they had experienced racial discrimination/harassment while a postdoc at Harvard.*

Postdocs frequently mentioned bullying, harassment, and discrimination in the free-form answers. Some examples below:

“I have had a great deal of unprofessionalism and difficulty with my advisor. I believe co-advising/committee type advising structures would greatly help with these sorts of issues.”

“I think generally having a dedicated point of contact other than your supervisor could be nice, maybe even more than one…for a work conflict that for various reasons I did not want to bring to my supervisor immediately.”

“I didn't expect it to be so hard to be a woman in a male dominated science community. Harvard seems to be an especially harsh place with bullying and harassment. I feel like my time in Harvard has cost all my self esteem as a scientist and I mostly blame that on lab culture/science culture here. I wish there was a mentoring program for postdocs at Harvard, especially for female postdocs.”

“I haven't been bullied myself but have had to deal first person with someone else suffering such consequences,”

“A number of fellow post-docs have filed anonymous complaints about our PI, but nothing has been done. For you to do anything they say they can’t be anonymous, but my PI is extremely vindictive and that would ruin our careers”

“I feel like my ability to provide a lot of results and fast is sometimes used by my PI to further their career, rather than mine. This manifests as writing grants, attending meetings, and carrying out research to support projects they are involved in. All of it last minute in a rush, obviously. There is no mechanism for me to get help with this problem. It feels like problems are only recognized at Harvard when they have to do with discrimination or harassment. And even then, the way problems are handled is a total joke.”

“A mentee of mine suffered enormously during their time in [redacted]’s group, who is known to have been abusive to his students for years. That abuse has been officially reported by multiple people and then swept under the rug, which means that that abuse, in the eyes of Harvard, never occurred. Accounting for this hidden abuse could help capture how much abuse actually happens at Harvard.”

On how to improve Harvard’s response to bullying/harassment:
“More training, specifically of Harvard employees outside of the corresponding human resources offices”

“By providing longer contracts to the post-docs. If I rely on my PI to renew my contract every year, I won't report them for any misconduct of course.”

“ACTUALLY have repercussions for toxic professors who are KNOWN to whole departments for being emotionally abusive towards students. eg fire them, lower their salary, require them to undergo formal management training. Having the dean tell them off isn't really doing much to help real students.”

FASPDA Recommendations to Improve Inclusion:

Before we detail our recommendations, we would like to point out that we reported similar data and largely similar recommendations in last year's report. To our knowledge, none of our recommendations (save outreach from our PDO to link postdocs with the Ombuds office) have been implemented, and, unsurprisingly, rates of bullying, harassment, and discrimination have not improved. We thus hope that these issues will be tended to with some urgency in the coming year.

We recommend a targeted approach to addressing bullying, gender discrimination and racial discrimination among postdocs at Harvard, with more effort paid to departments with higher levels of this behavior reported. The free-form comments reveal that many postdocs feel that Harvard's current methods for dealing with bullying, harassment, and discrimination are either inadequate or will lead to retribution, likely resulting in mistrust in the system and under-reporting to the appropriate offices. To this point, only 16% (7/43) individuals who had experienced bullying, harassment, or discrimination said that they reported it to Harvard. We note that there are currently few resources and tools in place at Harvard to address bullying, which may be part of the reason for its relatively high incidence among postdocs. We also note that the majority of this bullying comes from faculty, whom postdocs are often deeply dependent on for their job, their future career prospects, and their visa status. We recommend that faculty who are mentoring postdocs receive management evaluations and, if deemed necessary, training in healthy management practices. We further recommend that the PDO conducts exit interviews to identify faculty supervisors who bully their postdocs and proactively reach out to support other postdocs mentored by those faculty members. Finally, we recommend establishing supplemental mentoring support programs for postdocs experiencing bullying, harassment, or discrimination from their faculty advisor. We note that these are all recommendations we made last year that, to our knowledge, have not been implemented.

(1) Provide postdocs with information about how to address bullying behavior. We recommend an informational campaign informing postdocs about the existence of resources available to them, such as the Ombuds office. We note that currently available resources are insufficient and hope to see more resources for postdocs with the implementation of Harvard's planned Anti-Bullying policy.

(2) Ensure that postdocs are aware of the resources available to them to address sexual or gender-based harassment and racial discrimination.

(3) Perform exit surveys of postdocs to identify faculty members engaging in bullying behavior (or other forms of harassment/discrimination) and proactively support other postdocs supervised by faculty who engage in bullying behavior.

(4) Implement a supplementary mentoring/advising program for postdocs who experience bullying, harassment, or discrimination. We envision this as a volunteer group of faculty who are willing to take on an advisory/mentoring role (not a funding role) for postdocs who have difficult relationships with their primary faculty mentors.

(5) Require management reviews of faculty working with postdocs and provide training as necessary to ensure they are aware of healthy management practices.

(6) Provide voluntary training for faculty managing postdocs on how best to support postdocs in their career ambitions.

XI. *COVID-19*

Part A: Results

The effect of the COVID-19 pandemic had broad negative effects on Harvard postdocs, which continued even in the third year of the pandemic **(Figure 45)**. The largest somewhat or very negative effects were felt in the speed/efficiency of conducting research (73.2%), mental health (68.1%), and career outlook (53.4%). Negative effects were also felt in financial difficulties, job security, visa status, and finding faculty positions.

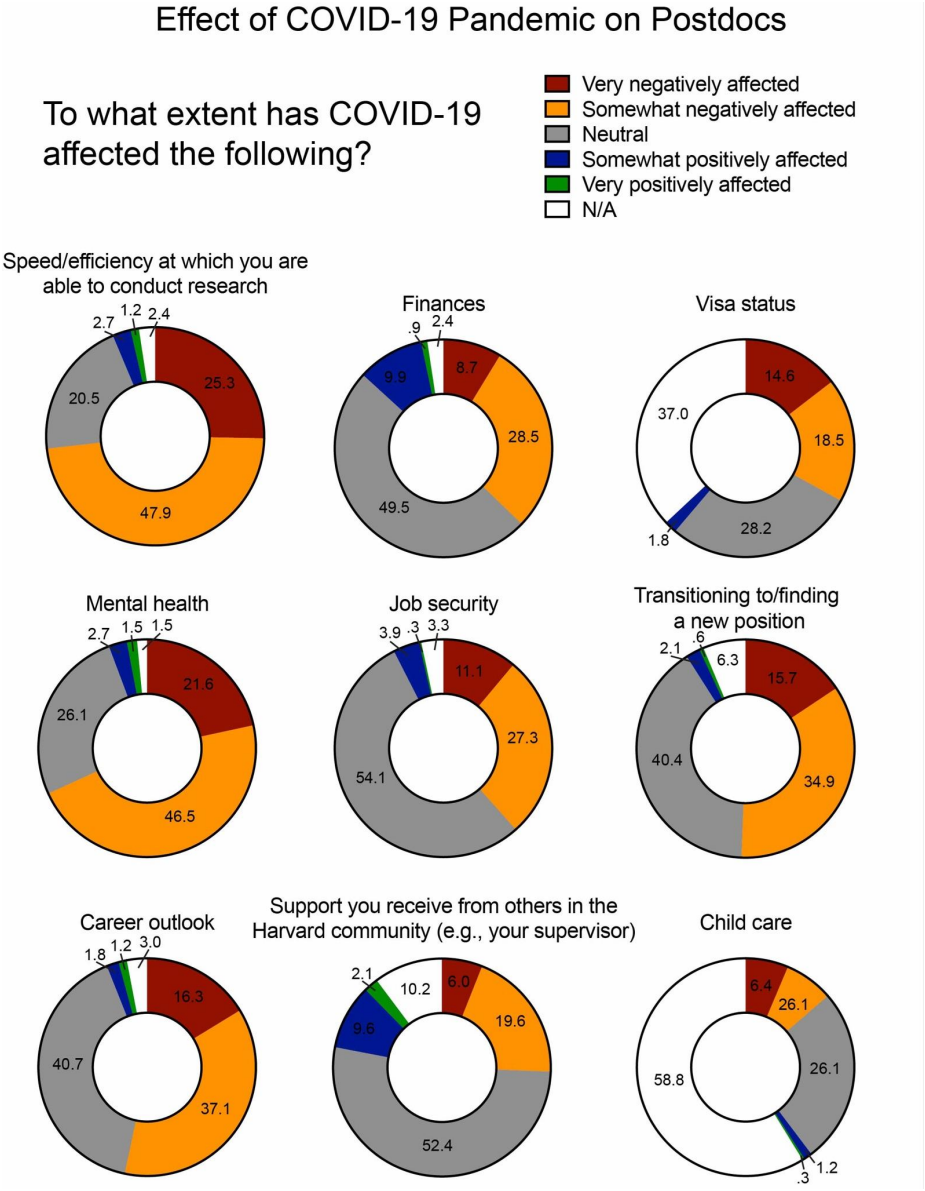


***Figure 45**. Ongoing impacts of COVID-19 pandemic*

Part B: Discussion

The COVID-19 pandemic has hurt the professional and personal lives of Harvard postdocs. The effects were felt particularly hard by those who were on the academic job market. Opportunities were limited by both hiring freezes at universities and economic downturn in private industry. Economic recessions, public health crises, and other events will continue in future years. Harvard should learn from the past three years and come up with a better plan to help postdocs whose career prospects are hurt by unforeseen circumstances. Currently, much of the career programming is run by volunteer work in the PDA or through Stephen Kargere in the PDO. More resources and staff could improve postdoc career transitions.

Mental health was also severely affected by the pandemic **(Figure 45)**. Doing a postdoc is, by nature, already a stressful job, and mixed with a pandemic, mental health was especially poor. Harvard should expand access to mental health counseling for postdocs, reduce co-pays, and increase providers. Inclusive in this is for Harvard to use its lobbying power to persuade Commonwealth legislators to join 38 other states in enacting the PsyPact bill into law[33].

Finally, many international postdocs were hit very hard by visa restrictions that were caused by the pandemic as well as policies of the federal government in 2020. As mentioned earlier in this report, many more resources including funds and staff should be devoted to supporting the international postdoc community. Immigration policy will continue to be affected by decisions at the government level and Harvard should create plans to ensure it can support international postdocs for years to come regardless of global or political events.

End of Document

[33] https://psypact.org/mpage/psypactmap