

NC State Graduate Student Funding: A Report of Stipends



**Authored by the Graduate Student Association's
Committee on Legislative Affairs and Student Advocacy**

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QR Code to ArcGIS Stipend Map

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1. Executive Summary

It is the opinion of the Legislative Affairs and Student Advocacy Committee that North Carolina State University (NC State) falls short in uniformly compensating graduate students with a fair stipend relative to the Raleigh living wage. While the 2023 increase to minimum stipends was welcomed and needed, NC State still lags behind peer institutions and other R1 Triangle universities in terms of graduate stipends and adjustment for student fees. This report summarizes key takeaways from data on stipends and fees and concludes with recommendations for NC State to remain competitive in attracting talented graduate students. Ensuring the well-being of graduate students by providing fair compensation for their services will help NC State flourish as a world-class teaching and research institution that attracts and retains talented graduate students into the future.

2. Introduction

Graduate students play many crucial roles at NC State. NC State relies on graduate students to assist with teaching courses, especially those fundamental to degree programs or part of general education requirements. For instance, Principles of Sociology is a mandatory course for all Sociology undergraduates at NC State. In the spring of 2024, 10 of the 13 sections of the course offered were taught solely by graduate students. During the same semester, 78% of Mathematics Ph.D. students were involved in grading, recitation, or course instruction while fulfilling their expected roles as researchers. The demand for teaching assistants is high, and it is expected that this demand will increase with the planned 11.7% growth in undergraduate enrollment by 2025 [1]. Research demands are also up, with research expenditures topping over \$500 million in 2023 and climbing [2]. Despite the invaluable roles that graduate students provide, their stipends fall short of fair and livable compensation.

Low graduate student stipends are an issue beyond NC State and correlate with setbacks outside their professional roles. One study found that low stipends were associated with delays in major life milestones (such as buying a house) and “avoiding medical or mental health care” [3]. Mental health care is especially important to graduate students: up to 50% report “symptoms of depression, anxiety, or burnout during their training” [4][5]. A 2018 study found that graduate students are more than six times as likely to experience depression and anxiety than the general population [5]. A significant contributor to poor student mental health is financial stress. The odds of depression and anxiety are increased in graduate students struggling financially [6]. A significant part of this financial struggle is affording the cost of living. The journal *Nature* conducted a survey of graduate students in 2022 and found that 76% of respondents identified “overall cost of living” as the most challenging part of getting a degree [7]. In a survey of graduate students in the Plant and Microbial Biology Department at NC State in Spring 2023,

84% of 31 respondents indicated that their mental health is affected by pay. Additionally, over half of the respondents indicated that they have considered leaving the program early due to the pay.

Progress has been made at NC State in meeting the financial needs of graduate students. Ph.D. students receive tuition support and health insurance through the Graduate Student Support Plan (GSSP). To be eligible for the GSSP, a student must be paid a minimum amount, which serves as a de facto minimum stipend for NC State graduate students. Before last year, the minimum annual stipend was \$8,000. In Fall 2023, this minimum was raised to \$15,000 for all Ph.D. students—the first time it has been raised since the program’s establishment in 1997 [15]. The minimum eligible stipend is set to rise again in Fall 2024 to \$20,000 a year. While this is a strong step in the right direction, the target minimum stipend for Fall 2024 does not change the median stipends reported later in this report and is still only about half of the Raleigh living wage. Dr. Peter Harries, Dean of the Graduate School, said via email that this raise “ultimately impacted only a relatively limited number of students”. This minimum stipend must increase to meet the needs of current graduate students and continue to attract skilled students to NC State.

This report aims to bring attention to the issues surrounding graduate student stipends at NC State. In the next section, we define a living wage and discuss the cost of living in Raleigh. Next, we report on our findings from Ph.D. stipends by program across the university, highlighting differences in stipends both within and between programs. Other considerations, such as how certain groups of students are disproportionately affected, are also discussed. Following this, in Section 5, the minimum graduate student stipend at NC State is compared to those of peer universities. Section 6 discusses student fees, including inequities arising in how they are compensated, as well as comparing NC State to peer institutions and other R1 Triangle universities. Other details related to expenses incurred while working at NC State are mentioned. Finally, we conclude by providing recommendations to the university on how to mitigate the financial difficulties faced by graduate student workers.

3. Contextualizing the Problem: Living Wage and Cost of Living in Raleigh

The living wage is the main measure used in this report to assess the ability of a stipend to support a graduate student. The living wage is the amount of pre-tax income needed to fulfill basic needs such as food, housing, and transportation. Note that this does not consider the financial means for savings or investment, which affects graduate students' ability to plan for their future. The living wage calculations in this report assume a single adult with no dependents. All living wages provided in this report were obtained using the MIT Living Wage Calculator. According to this resource, an individual adult without dependents in Raleigh needs to earn \$38,084 annually before taxes to meet their basic needs [8].

A significant portion of the cost of living is rent. As of March 2024, the median rent in Raleigh is \$1,850 [9]. This figure has changed little in recent years. RentCafe reports that only 2% of apartments in Raleigh fall within a monthly price range of \$701-1000 [10]. As of 2022, rent in Raleigh-Durham as a percentage of earnings is the highest it has been in 20 years [11]. Given that Raleigh and Durham were ranked by the U.S. News & World Report as some of the fastest-growing cities in the U.S. [12], this trend is likely to continue. Housing costs do not include those associated with food, gas, and other necessities, which have risen in price due to inflation.

4. Graduate Student Stipends

One of the central grievances of graduate students at NC State is being paid a living wage. In this section, we report our analysis of the summary statistics for Ph.D. student stipends in every graduate program across the university for the Fall 2022 semester. These statistics include the median, maximum, and minimum stipends for each program. We assume that the stipends reported in this section have not substantially changed from when they were retrieved in Fall 2022. Some Ph.D. students receive funding for only nine months of the year (funding for the remaining three months is conditional on additional factors such as the availability of summer teaching positions or finding internships). To allow for a fair comparison, the data in this section are annualized (i.e., nine-month stipends are scaled by a factor of 1.33). These data have been gathered through payroll, so this excludes information on students receiving compensation from non-payroll sources, such as external fellowships. In other words, these financial data are only for students on graduate assistantships (GAs). Data are not reported for programs with fewer than five students.

Figure A1 in the Appendix shows the median graduate student stipend for every Ph.D. program in the university. Figure 1 below shows the distribution of these median stipends. No program meets or exceeds the Raleigh living wage.

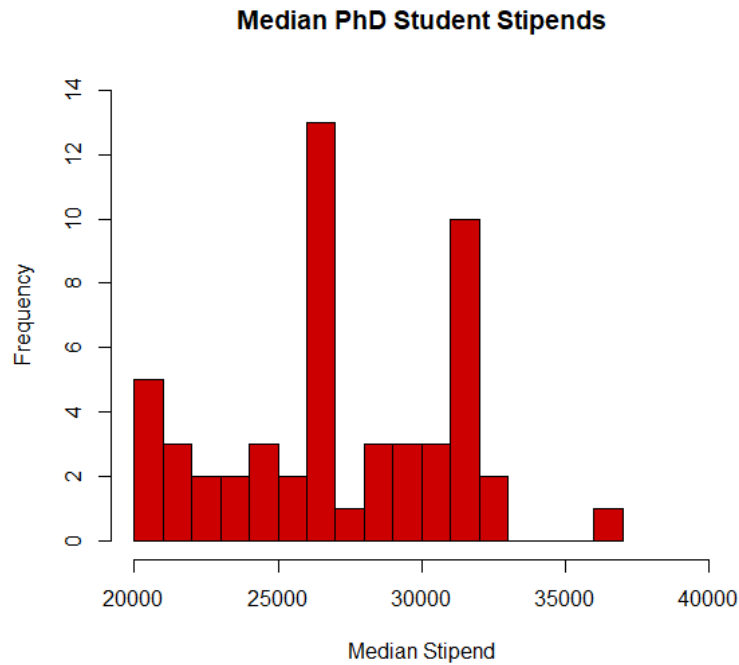


Figure 1: Distribution of median Ph.D. student stipends by program at NC State. The living wage in Raleigh, NC is \$38,084 [8].

Table 1 shows the (weighted) average GA stipend for Ph.D. students for each college. The total number of Ph.D. students on payroll is also provided. Note that some averages are skewed, as intradepartmental variation in stipends is sometimes large. This is discussed further below.

Table 1: The weighted averages of graduate student stipends, broken down by college.

College	No. of Ph.D. GAs	Average stipend (weighted)
College of Engineering	922	\$32,367
College of Sciences	543	\$28,233
College of Agricultural and Life Sciences	138	\$26,436
College of Natural Resources	175	\$25,994
College of Education	156	\$25,306
College of Humanities and Social Sciences	190	\$22,623
Poole College of Management	47	\$20,581
Wilson College of Textiles	92	\$18,996
College of Design	<5	\$ –

Table 2: Programs with the greatest difference between median and maximum stipends.

Program	Median stipend	Difference between max and median stipends
Comparative Biomedical Sciences	\$30,000	\$40,000
Mechanical Engineering	\$31,200	\$38,800
Chemical Engineering	\$36,500	\$36,500
Electrical Engineering	\$32,600	\$35,560
Statistics	\$26,600	\$32,200

Table 2 shows the five programs in the 2022 dataset that have the greatest difference between their median and maximum stipends. Some students receive more than twice the annual stipend of their peers despite belonging to the same program. Although there may be specific reasons for this discrepancy, such as an individual research team receiving extra external funding, the fact remains that resources are not being distributed equitably among NC State's graduate student population, both within and across programs.

Many students have been forced to work part-time jobs to supplement their income or to accommodate sudden major expenses, despite this being against university rules. The graduate student handbook states that graduate students “should not be otherwise employed” [13]. The handbook continues: “The reason for this position is to encourage students to work on their degrees rather than part-time jobs... If a department wishes to increase a graduate assistant’s financial support, the stipend should be increased”. Common sources of part-time supplementary income include tutoring, bartending, and delivery services such as DoorDash. Some programs, such as the Department of Mathematics, encourage and even facilitate student tutoring services to supplement low stipends [14]. In the survey of graduate students in the Plant and Microbial Biology Department referred to in the Introduction, 48% of the 31 respondents said that they supplement their income with work outside their position at NC State.

Low stipends disproportionately burden students from disadvantaged backgrounds and those supporting children. Regarding the latter, a 2023 survey of 50 NC State graduate student parents conducted by the Student Parent Association reported that they spent an average of \$11,666 on childcare per child per year—approximately 25% of their annual household income and 45% of the average annualized stipend for NC State GAs.

The data presented here demonstrate that graduate student stipends are inequitable between and within programs. Furthermore, no program at NC State has a median graduate student stipend that meets or exceeds the living wage for a single adult without dependents in Raleigh. Our living wage calculation ignores exceptions such as graduate students with children and international students, who are even more susceptible to financial insecurity given low stipends.

If this trend continues, NC State will find it difficult to attract and retain highly skilled graduate students. The topic of raising graduate student stipends becomes more compelling if we broaden our scope to consider the stipends at similar institutions.

5. Comparison to Other Institutions

It is useful to compare the minimum stipend at NC State to those of its peer institutions. Peer institutions are selected by the UNC Board of Governors and serve “to be used for benchmarking and comparison” [16]. A peer institution is comparable to NC State in size, research classification, government funding sources, etc. These institutions can be faithfully compared to NC State when looking at metrics of interest, such as student stipends and fees. We gathered the minimum annual graduate student stipend from each of our peer institutions. Institutions were omitted if this information was not available on their university website. Stipends are also given as a fraction of the cost of living to provide a fairer comparison. These data are presented in Table 3.

Table 3: *Stipend-to-cost-of-living comparisons between NC State (proposed Fall 2024 rate) and peer institutions [34-43]. Peer institution stipends considered are the lowest reported pay tier at half-time employment, in line with NC State’s GA contracts.*

Institution	Minimum stipend	Cost of living (CoL)	% of CoL
Michigan State University	\$31,680	\$41,123	77%
Virginia Tech	\$30,372	\$41,775	73%
Purdue University	\$28,000	\$40,780	69%
University of Illinois Urbana-Champaign	\$28,307	\$41,500	68%
University of Maryland-College Park	\$34,052	\$54,391	63%
University of Florida	\$25,600	\$41,675	61%
University of Wisconsin-Madison	\$26,506	\$44,480	60%
University of California-Davis	\$29,125	\$52,402	56%
NC State (Fall 2024)	\$20,000	\$38,084	53%
University of Arizona	\$21,750	\$41,849	52%
Georgia Tech	\$26,820	\$53,736	50%

NC State is not currently leading the pack or “stand[ing] apart from other institutions as a role model and leader” [45] in terms of graduate student pay compared to its peer institutions. The proposed Fall 2024 target minimum of \$20,000 places NC State third-to-last of the 11 institutions listed above. Additionally, some of these schools have a tier system in which more experienced students receive raises throughout their academic careers. For example, Michigan State University raises the minimum pay rate of GAs who have fulfilled certain requirements, such as completing a specified number of semesters [44].

In 2021, the NC State Board of Trustees endorsed a 2021-2030 Strategic Plan for the university, intended to, among other things, address “areas of needed growth” [45]. Goal 2 of this plan is to “Ensure preeminence in research, scholarship, innovation, and collaboration”, but among peer institutions NC State ranks close to the bottom in terms of graduate student stipends adjusted for cost of living. NC State will struggle to remain preeminent if it struggles to attract competitive graduate students. Goal 4 of the Strategic Plan states that NC State is committed to “championing a culture of equity, diversity, inclusion, belonging and well-being in all we do”. One way the university can “zealously root out systematic inequities and correct them at an institutional level” is through equitable graduate student stipends. Higher stipends will help to “strengthen the health and well-being of our campus community”, while lower stipends will hinder the enrollment of students from marginalized backgrounds pursuing post-baccalaureate education [17] and negatively affect graduate student well-being. This comparatively low compensation will cause a loss of talent to other institutions willing to invest more in their students. NC State values a diverse and exceptional student body, and this committee recommends that to continue pursuing that goal, the university should raise minimum stipends to a level on par with those of our peer institutions, relative to the cost of living.

6. Graduate Student Fees

Graduate students are required to pay fees depending on the number of credits they are enrolled in. If a student is enrolled in at least nine credit hours, they are required to pay a minimum of \$1,291.13 in fees per semester as of March 2024 [18]. This number can be higher for some students depending on their program. That is nearly \$2,600 per year that a graduate student pays back to NC State—more than 10% of the median salary for 55 Ph.D. programs across the university. For the same nine credit hours, undergraduates only pay \$963.81 in fees [19].

Because NC State lacks a uniform policy to pay graduate student fees that conform to federal requirements, fees are not allowed to be covered by federal sources [20], such as federal grants. There is no established way for graduate student fees to be paid; therefore, how fees are paid varies substantially. Some students receive higher stipends to offset the additional cost. Students in departments receiving funding from non-federal sources, or via other caveats, may have their fees covered wholesale. This is the case for students in the Department of Electrical and Computer Engineering and the Toxicology Department.

How do other R1 universities in the Triangle compare? Table 4 shows the graduate student fees per semester at Duke, UNC-Chapel Hill, and NC State. These numbers exclude university-provided insurance.

Table 4: Comparison of semesterly graduate student fees between Duke [21], UNC-Chapel Hill [22], and NC State [23], as of March 25, 2024.

University	Semesterly fees
NC State	\$1,291.13
UNC-Chapel Hill	\$991.32
Duke	\$824.00

NC State graduate students pay at least 30% more in fees than those at Duke or UNC-Chapel Hill. However, graduate students at the latter institutions do not pay fees out-of-pocket. At Duke, graduate student fees are covered alongside tuition, while at UNC-Chapel Hill, most graduate students have their fees covered by their funding sources [24]. This makes NC State the only R1 university in the Triangle where most graduate students must pay fees out-of-pocket. Beyond this, lacking a uniform fee policy produces inequities in graduate student stipends both within and between programs. This places NC State at a steep disadvantage in attracting and retaining graduate students in comparison to other Triangle institutions.

We can also compare NC State graduate student fees to those of peer institutions. The fees of these institutions are shown in Table 5. All fees reported in Table 5, except for those of NC State, are taken from the College Navigator portal of the National Center for Education Statistics [25]. These are the average annual fees paid by in-state graduate students—amounts are divided in half to approximate semesterly fees. We assume that fees are resident-only.

Table 5: Comparison of semesterly graduate student fees between NC State and peer institutions [25].

University	Semesterly fees
Texas A&M University-College Station	\$2,104
University of Illinois Urbana-Champaign	\$1,646
Virginia Tech	\$1,390
NC State	\$1,291
Rutgers University-New Brunswick	\$1,262
University of California-Davis	\$1,148
University of Florida	\$984
University of Arizona	\$836
University of Wisconsin-Madison	\$781
Georgia Tech	\$753
University of Maryland-College Park	\$642
Michigan State University	\$170
Purdue University	\$137

Note that Texas A&M University covers graduate student fees [26], which means that NC State has the third highest out-of-pocket graduate student fees of the 13 peer institutions listed in Table 6.

How are fees compensated across campus at NC State? We reached out to the Graduate Services Coordinator of several Ph.D. programs and ranked them in terms of median stipend relative to other programs: high median stipend (Genetics), intermediate (Mathematics and Biology), and low (Sociology). We gathered a comprehensive list of student stipends, appointment lengths, assignments (e.g., TA or RA), and how fees are compensated for each student. Recall that fees may be compensated by salary according to the discretion of their advisor or included in a fellowship, versus paying them out-of-pocket. These data omit students who are self-supported. A summary of these data is given in Table 6.

Table 6: Comparison of several programs based on their relative median stipend, including what percentage of graduate students have their fees covered. These data are for the 2023-24 academic year and may thus differ from those values presented in Figure A1.

Median stipend relative to other NC State programs	Program	Median stipend	Percentage of students with fees covered
High	Genetics	\$33,728	>15%
Intermediate	Mathematics	\$27,431	1.6%
	Biology	\$26,500	26%
Low	Sociology	\$24,541	0%

Median stipends per program can vary by nearly \$9,000 per year. This inequity is even starker if we account for graduate students whose fees are compensated. From our research, programs with low stipends are less likely to compensate for university fees. Graduate students in these programs are then especially disadvantaged by low pay and additional costs brought on by fees.

In 2019, Dr. Warwick Arden, the Executive Vice Chancellor and Provost of NC State, along with others, suggested an increase to graduate student stipends to balance out fees [20]. Despite this much appreciated recommendation, progress by departments towards this initiative has been slow and inconsistent over the past five years. The Department of Entomology and Plant Pathology made headlines recently because of an article in the journal *Entomology* bringing attention to low graduate student stipends [27][28]. The publication of this article alongside other efforts helped raise graduate student stipends in the department to \$32,000. However, this represents only a single success story and, even then, this is still well below the living wage, especially after fees.

NC State uses fees to maintain on-campus amenities such as bus services, fund campus projects such as the construction of new buildings, and pay for student organizations. Graduate students who are unable to or limited in enjoying these services are still expected to pay the same fees as those who can. For example, graduate students located on Centennial Campus, such as students in Engineering and some Physics students, have a substantially reduced opportunity to utilize amenities exclusive to Main Campus. Commuting graduate students face an even steeper uphill battle in accessing campus benefits, as well as additional costs. As of March 2024, the cost of a parking pass at the Coliseum Deck is \$220 per semester [29]. Parking is free for non-graduate student employees. Commuters, sometimes located far away due to increasing rents, are not close enough to easily utilize resources like the recreation center and campus bus services.

Graduate students in the Center for Marine Sciences and Technology, located three hours from campus in Morehead City, pay full student fees despite working at the facility year-round. For graduate students working at the Plants for Human Health Institute, an NC State research organization two hours from Main Campus, they are also required to pay the full amount of fees. International students make up 35% of graduate students at NC State [30] and are especially burdened if they work at an off-campus facility, as they usually begin their schooling without a personal vehicle, lack off-campus social support networks, and face challenges with finding living accommodations and roommates. Since the pandemic, these scenarios have become more common with the general shift to distance accommodations.

Finally, student fees are paid per semester, so some campus services must be paid for during the summer. These include the recreation center (\$70 for a full summer membership [31]) and the student health center (\$120 total for the summer [32]). Over the summer, commuting graduate students must pay additional costs to access the amenities that they are often not able to access during the academic year.

7. Conclusion & Recommendations

We show in this report the problems surrounding graduate student stipends at NC State. Compared to peer institutions, graduate students at NC State pay the third highest semesterly out-of-pocket fees and are third from the bottom in terms of minimum stipend, adjusting for cost of living. NC State is the only R1 university in the Triangle to charge most of its graduate students with out-of-pocket fees. Besides these issues, there are large stipend discrepancies both within and across programs at NC State. These discrepancies are exacerbated by inconsistencies in how graduate student fees are compensated. If the present patterns continue, NC State will face challenges in recruiting and retaining capable graduate students, particularly those belonging to underrepresented communities. Low stipends are also linked to poor mental health which takes an immense toll on graduate student well-being. Although some steps have been

taken to address poor student mental health, there has been no university-wide initiative to raise stipends to a livable wage.

There are several recommendations that we outline. These recommendations are limited by our knowledge concerning the administrative decision-making process and its implementation. Due to this limitation, we propose these recommendations as guiding steps. Firstly, **an increase in graduate student stipends to more adequately match the cost of living**. While minimum stipends have been raised—the first time this has happened since 1997—the proposed wage is still only approximately half of the living wage and compares poorly to those of our peer institutions after controlling for cost of living.

Secondly, **remove or substantially reduce out-of-pocket graduate student fees**. NC State is the only R1 institution in the Triangle to charge most graduate students out-of-pocket fees, and has the third highest out-of-pocket fees of our peer institutions. These fees, which are often a substantial portion of a student's yearly salary, hinder the ability of the university to pay graduate students a fairer wage.

Thirdly, **better data management and collection** is imperative. While the payroll stipend data reported in Section 4 is the first of its kind, it has its limitations. The data annualizes the rate at which students were paid at the beginning of the Fall 2022 semester, despite many graduate students only holding nine-month appointments. The data were also not able to capture the support that students receive through fellowships or external sources. NC State should commit resources to managing graduate student data and regularly disseminate information on graduate student compensation.

Fourthly, **annualized comparisons with peer institutions and regular checks on stipends and the cost of living** will help gauge where we may be falling short. Annual comparisons to the stipends of other institutions should be made to ensure that NC State remains competitive. This comparison should adjust for the cost of living in the area and the specific requirements of each program. This will ensure that NC State is offering competitive stipend packages that attract and retain talented and diverse graduate students.

Fifthly, **increase opportunities to support graduate student success**. Many programs at NC State benefit from university fundraising efforts. We suggest that more opportunities need to be created to support graduate students. The NC State Day of Giving in March of each year is an opportunity for NC State to raise money for the university, and the 2024 Day of Giving generated \$46,622,214, with the most gifts ever received [33]. Although alumni can donate to The Graduate School, graduate students would benefit from direct funding to programs, fellowships, and services that support graduate student success and well-being.

Finally, **continued GSA advocacy** is central to a healthier graduate student life. We recommend that graduate students themselves, particularly the NC State GSA representatives, become active advocates for equitable stipends. The GSA representatives should help spearhead stipend increase movements and act as liaisons between their constituents and The Graduate School. Graduate student organizations should engage with university administrators and lawmakers to make their voices heard and push for change.

By working together and advocating for ourselves, graduate students can help ensure that they receive the support they need to succeed. Student and faculty leaders in each college and department should collaborate to gain a clear understanding of stipend inequities and other financial stressors affecting graduate students. Administrators and faculty should be attentive to the needs of their graduate students to ensure equitable treatment in the face of the increasing cost of living in Raleigh. We must have pride in our ability to Think and Do and have the courage to think progressively and implement new strategies for the sake of our collective success as a university.

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Appendix

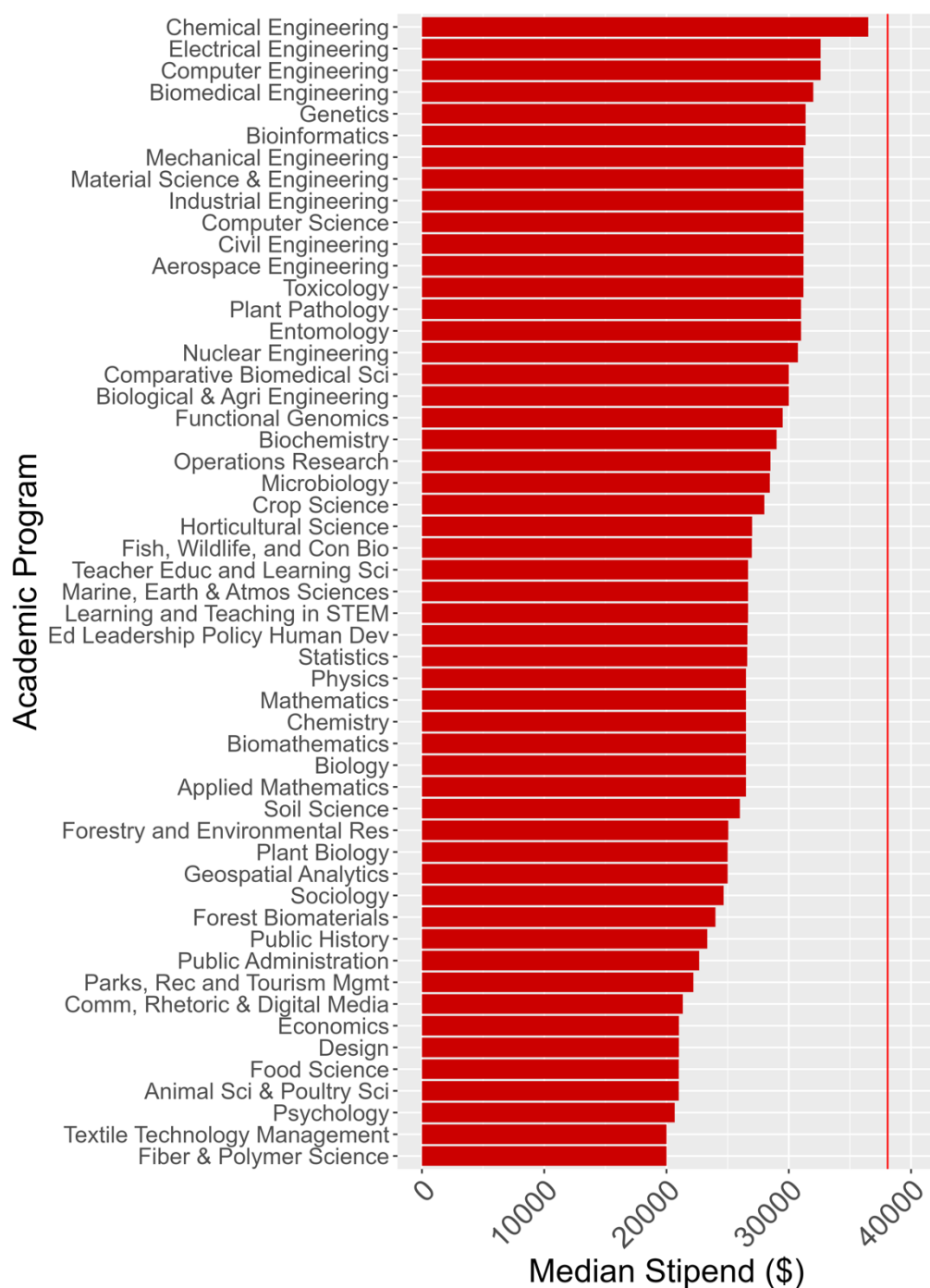


Figure A1: Annualized graduate stipends broken down by academic program. The cost of living in Raleigh is indicated by the vertical line.