Graduate Student Government Association - Georgia Institute of Technology

An overview of the Graduate Teaching Assistantship landscape at Georgia Tech

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Introduction

This report paints a comprehensive picture of Teaching Assistantships (TAships) at Georgia Tech at the time of writing. The analysis contained in this report is based on survey data from 378 graduate student responses collected during Feb-April 2022. This report is made available to all students, faculty and administrators in the hopes that it may lead to a data driven discussion around Teaching Assistantship policies. The raw data is made available at `https://github.com/pranav-s/GeorgiaTech_TAship_survey` This may also be viewed as benchmark data for TAShips for students/researchers in other universities. The survey questions as well as relevant methodology of survey is provided in the Appendix.

Participation in survey

The total number of participants in the survey was 378. 343 were from the Atlanta campus while 35 were Online students the majority of whom were from the College of Computing. All analysis that follows will be for the Atlanta campus of Georgia Tech. TAShips for Online students is analyzed in a separate section. The breakdown of Atlanta campus respondents against their School/College is given in Table 1. Of the graduate students who responded, 134 were Master's students while 209 were PhD students. The majority of Master's students were from Computer Science, Electrical & Computer Engineering and Aerospace Engineering. Note that as several questions were optional, not all respondents answered every question in the survey and the survey completion ranged from 50 % to 100 %. No identifying information was collected about the participants.

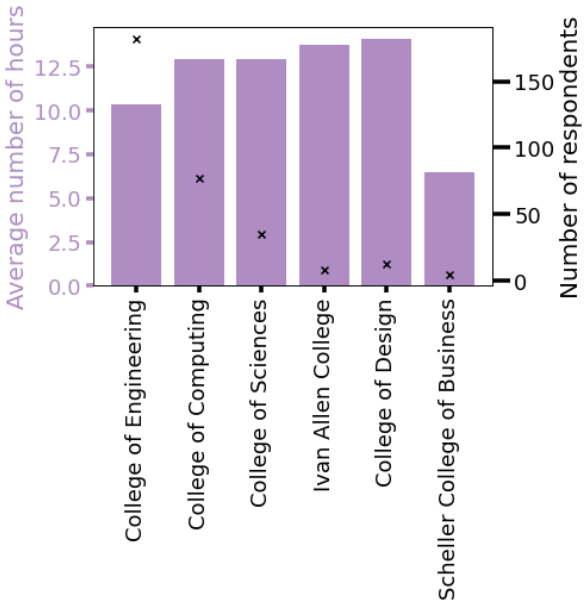
College		
College of Engineering (CoE)	School of Aerospace Engg (AE)	17
	School of Civil & Environmental Engg (CEE)	6
	School of Electrical & Computer Engg (ECE)	33
	School of Mechanical Engg (ME)	10
	School of Industrial & Systems Engg (ISyE)	6
	School of Chemical & Biomolecular Engg (ChBE)	68
	School of Material Sci & Engg (MSE)	20
	School of Biomedical Engg (BME)	29
	Total	189
College of Computing (CoC)	School of Computational Science & Engg	6
	School of Computer Science	50
	School of Interactive Computing	24
	School of Cybersecurity	8
	Total	88
College of Sciences (CoS)	School of Physics	1
	School of Biological Sciences	5
	School of Biology	4
	School of Chemistry & Biochemistry	4
	School of Psychology	11
	School of Applied Physiology	2
	School of Mathematics	8
	School of Earth & Atmospheric Sciences	3
	Total	38
College of Design (CoD)	School of Architecture	5
	School of Building Construction	3
	School of City Planning	2
	School of Industrial Design	2
	School of Music	1
	Total	13
Ivan Allen College (IAC)	School of Economics	2
	School of International Affairs	1
	School of History & Sociology	1
	School of Modern Languages	2
	School of Public Policy	2
	School of Literature, Media & Comm	1
	Total	9
Scheller College of Business (CoB)		6

Table 1: Distribution of respondents from the Atlanta campus by school and college. Each respondent has served as a Teaching Assistant

Time commitment for TAShips across schools

Figure 1(a) shows the average number of hours per week for all colleges where the weighted average for each college is taken using the mid-point of each time range. The data for Master's and PhD students is combined as the number of hours per week is quite similar for both groups. The median time commitment across all colleges appears to be 10-13 hours with the least being the Scheller College of Business with a reported 6 hours of work per week. This number could however be biased by the fact that there were only 6 respondents. With the exception of College of Engineering and College of Business, all other colleges are in the range of 12-14 hours of work/week.

We take a closer look at the schools in the College of Engineering in Figure 1(b). The highest workload within College of Engineering appears to be in the school of Aerospace Engineering with 15 hours/ week. Observe that ChBE, BME and MSE as a group have the lowest weakly workloads of between 5-10 hours/week and this skews CoE as a whole towards an average of 10 hours/week. These three schools incidentally are the ones that incorporate TAships as part of their degree requirements as examined more closely in the section 'TAships without pay - a closer look'.



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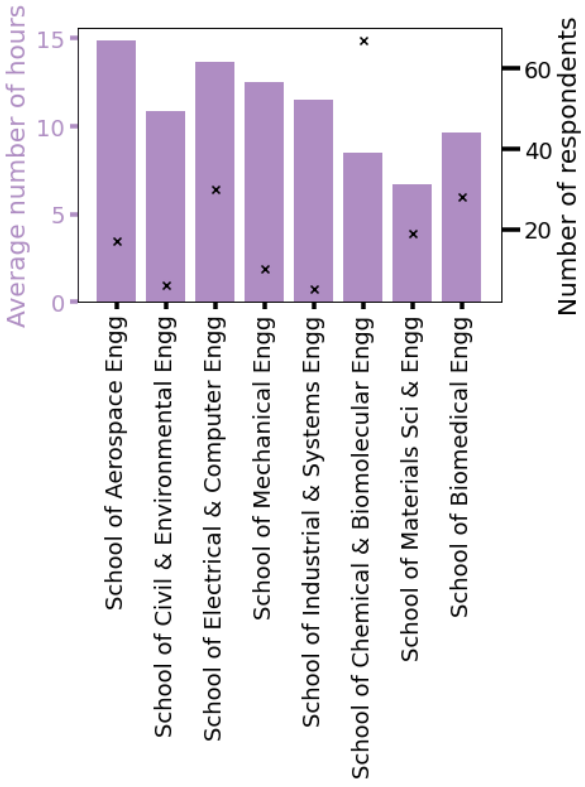


(b)

Figure 1: Comparison of average number of hours spent on TA duties per week a) Across all colleges at Georgia Tech b) Across the various schools in the College of Engineering

TA Compensation

Hourly wage Compensation

The majority of respondents were paid on a monthly basis and only 12 respondents from Atlanta campus were paid on an hourly basis. This consists of five each from the College of Computing and College of Engineering and one each from the College of Design and College of Sciences. The hourly wages ranged between \$13/hour (School of Biological Sciences) to \$18/hour (School of Architecture). The median across all respondents was \$15/hour. For comparison, the federal minimum wage is \$7.25/hour [4].

There were 14 respondents from the OMSCS program who also reported being paid an hourly wage and the median value of the hourly wage reported was \$17/hour.

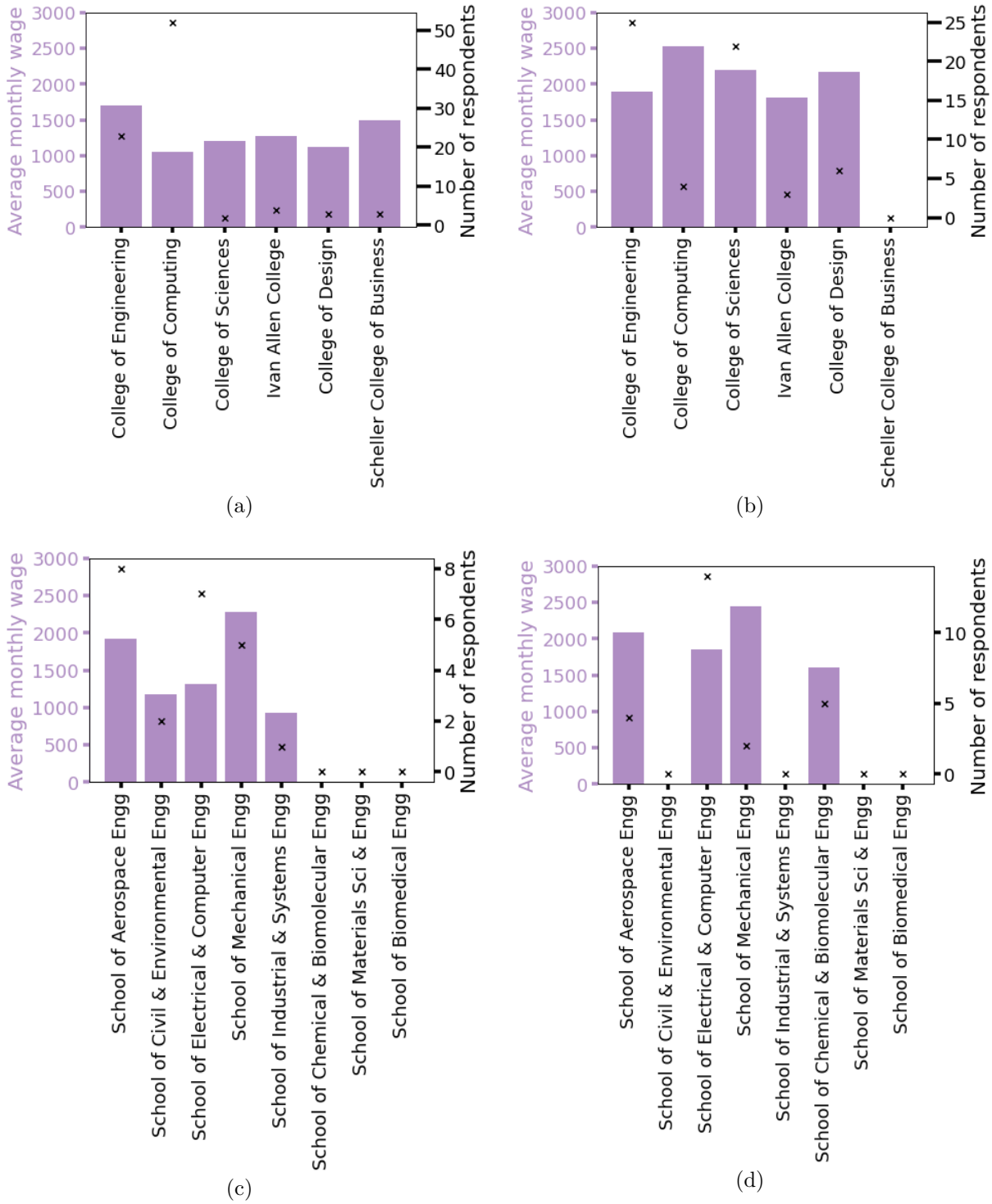


Figure 2: Comparison of average monthly wage for TA duties a) Across all colleges at Georgia Tech for Master's students b) Across all colleges at Georgia Tech for PhD students c) Across the various schools in the College of Engineering for Master's students d) Across the various schools in the College of Engineering for PhD students. All wages are reported in USD.

Monthly wage comparison

The monthly wages for Master's and PhD students are reported separately with the left column of Figure 2 corresponding to Master's students and the right column corresponding to PhD students as the two groups usually have different wage rates. Among Master's students, the College of Computing has the lowest monthly wages of $1000 while College of Engineering has a higher average monthly wage of $1700. The trend flips when considering PhD students however as CoC PhD students report an average compensation of $2500 per month while CoE PhD students report an average of $1900 per month. For CoC this number is explained by the fact that TA's are still paid the $\sim$ $1000 rate for TAships while the advisor tops that amount to yield the total of $\sim$$2500. It is also worth noting that of all the Colleges, College of Engineering has the lowest difference in wage between Master's students and PhD students.

Figure 2c) and d) take a closer look at the schools in CoE. Mechanical Engineering and Aerospace Engineering have the highest wage of $2000- $2500 of the schools in CoE and moreover the rate is similar for Master's students and PhD students.

Comparing wages Vs number of hours spent

In this section, we combine the information in the previous two sections. For each respondent we divide the reported monthly wage by the number of hours per week extrapolated to a month for respondents who have answered both questions and compute the effective hourly wage. The result is reported in Figure 3. This is done in order to normalize variations in pay across schools against the actual number of hours spent by students and compare the resulting trends.

From Figure 3a) it is clear that there is a discrepancy in effective wage for Master's students across colleges with College of Computing, Ivan Allen College and College of Design having the lowest rates at around $20/hour while CoB has the highest at around $90/hour. Given the high number of respondents from CoC and the fewer respondents from other colleges, one expects that these numbers are demand-supply driven.

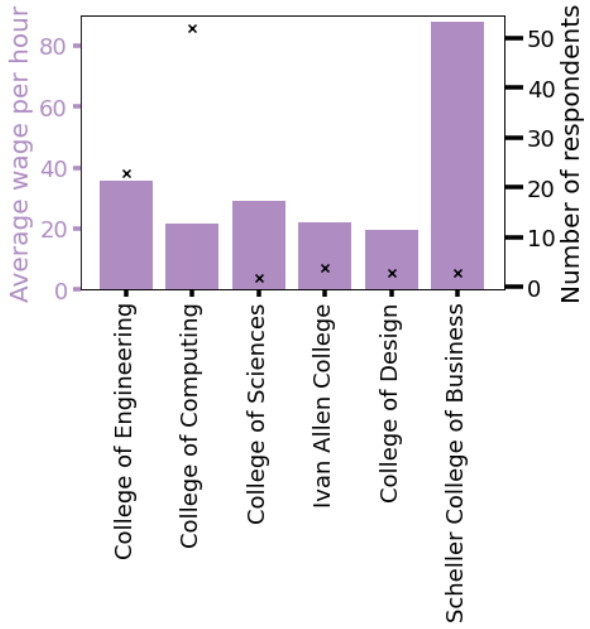
All PhD TA's (Figure 3(b)) have a comparable effective wage of around $ 40/hour across colleges.

TAShips without pay - A closer look

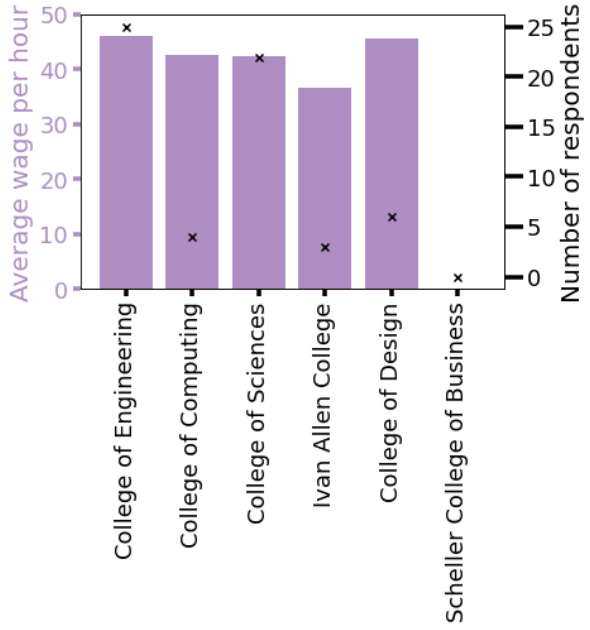
The survey asked respondents whether their TAship was compensated by their school. The answer to this question highlighted that three schools within the College of Engineering namely, the School of Materials Science and Engineering (MSE), School Of Biomedical Engineering (BME) and School of Chemical & Biomolecular Engineering (ChBE) do not compensate their PhD TA's but instead make TAships a part of the degree requirements for PhD students. As per Georgia Tech Catalog, the requirements are three semesters for ChBE [2] and two semesters for BME [1]. MSE does not list their requirements explicitly in the GT Catalog [3] but students in MSE reported in the comments that they are required to TA for five semesters without pay which is the highest among all schools at Georgia Tech.

The official language in the Georgia Tech Catalog of all three schools indicates that the purpose of this requirement is to further the professional and scholarly development of students through this requirement. It is worth noting however, that in response to Open Records request #12271 (included in the GitHub link), ChBE and MSE acknowledge that they do not typically hire GTA's and BME states that they have very few GTA's. This indicates that all Teaching staff requirements for courses in these 3 schools is being met through their respective degree requirements.

ChBE's catalog requirement also explicitly states that students must TA for 5 hours per week [2]. The distribution of actual



(a)



(b)

Figure 3: Comparison of effective wage per hour of work for TA duties a) Across all colleges at Georgia Tech for Master's students b) Across all colleges at Georgia Tech for PhD students. All wages are reported in USD.

hours spent by students in ChBE per week on TAships is shown in Figure 4. While the majority of respondents do report spending < 10 hours per week on their TAship, about 36 % of respondents report spending more than 10 hours per week. Given that different courses

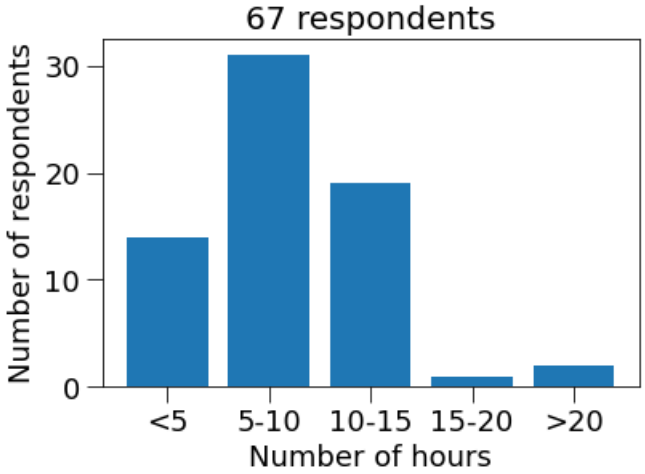


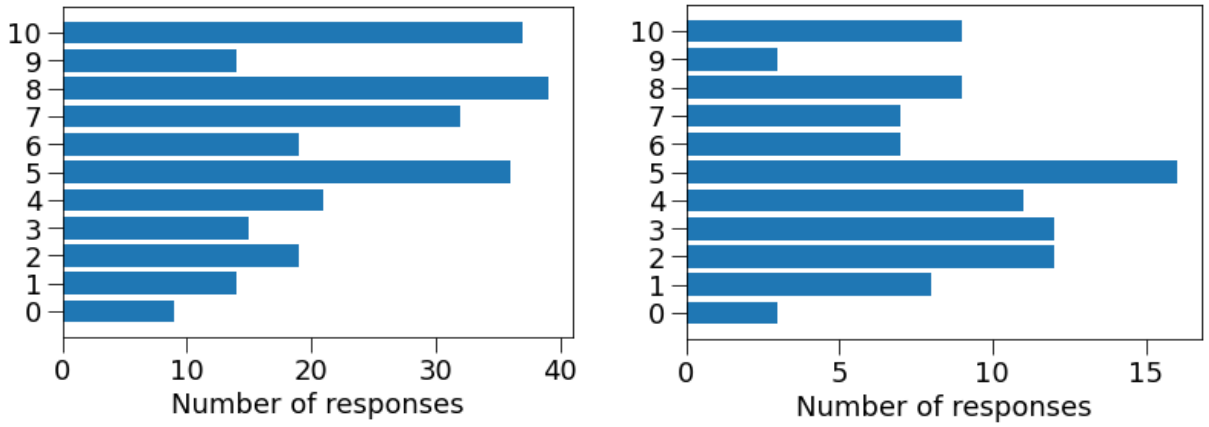
Figure 4: Number of hours spent per week by graduate students in ChBE on TAship responsibilities

are likely to have different work loads associated with them for TAs, this number reflects the reality that it is hard to ensure that all TA's for all ChBE courses would TA for fewer than 5 hours per week.

Table 2 highlights some of the comments made by students from these schools on their views regarding their TAships. Based on these comments, students appear to have a rather unfavorable view of these TAship policies and as indicated in comment 2 and 3 in Table 2, this also affects the course quality in these schools as the incentives of TA's are not aligned with that of their students.

	Is there anything further that you would like to let us know about the TA compensation policies of your school?
1	BME department is taking advantage of its PhD students by requiring this TA responsibility without paying them. This is seriously affecting their research progress (funded by outside sources).
2	If I'm not being paid extra to be a TA, why am I expected to put in a lot of work? I do it out of good will for the students and because I try not to be a terrible person. That being said, I cannot possibly care past the bare minimum and I should not be expected to. (Author's note: This is a ChBE student)
3	ChBE does not pay students extra for TAing and as a result, many students don't care to be good TA's and only care about doing the minimum. If we were paid based on the student evaluation surveys and the end of the semester, this would motivate TA's to help students more.
4	Yes - my PI felt like it was just a waste of his time that I had to fulfill my TA responsibilities for my program. Some PIs - like mine - don't see any value in teaching. This makes my job even more difficult, because in spite of the hours that I must put into my TA duties, I have to make up for them at the laboratory. Even worse, because the BME dept. is also located at Emory - where my lab is - I had to constant drive back and forth between Decatur and Atlanta, finding parking, paying for parking, and making up for huge chunks of lost time. I think that paying the graduate student is not only fair, it is morally right. What an absurdity that I had to do two jobs at once, and the university benefitted on my behalf, while I had to maintain research and my TA duties. I did not take the remainder of my required courses during this time because it was already time-taxing enough to manage the two jobs of being a TA and a graduate student researcher.
5	GT is exploiting graduate students for free labor. The idea that this is part of our "professional development" is laughable. All we do is the mundane work that professors/instructors don't want to do. (Author's note: This is a BME student)
6	The fact that we are asked to be TAs but our funding comes entirely from research grants creates a lot of stress and friction with advisors who are expecting more productive time in the lab than is possible with the TA responsibilities. (Author's note: This is a BME student)

Table 2: Textual responses to a question on additional information on TA compensation policies taken from students belonging to schools with uncompensated TAing namely: MSE, BME and ChBE



(a) (b)

Figure 5: Comparison of perceived scholastic gains from TA duties a) All schools at Georgia Tech b) In MSE, BME and ChBE only. 0 represents no benefits and 10 represents high benefits.

Perceived scholastic benefits of TAships

Students self-report their perceived scholastic gain from TAships, i.e., how might the skills acquired through TAhips benefit them after they graduate. A disclaimer must be added here that students may very well come to perceive TAships differently once they actually graduate and have been in the workforce for a few years. 0 represents no benefits and 10 represents high benefits.

The average value of the histogram in Figure 5(a) is 5.91 . In contrast, observe that the same number for the three schools that don't pay their TA's is lower at 4.87 (Figure 5(b)). This is likely a measure of student dissatisfaction with their TAships in these schools which influences their rating and is perhaps also reflective of the fact that TAships in these schools are in fact also have lower scholastic benefit than other schools.

On a brighter note, students who rated their TAships over 7 on a scale of 10 were asked to list the specific skills that they gained and some representative comments are reported in Table 3. The most common benefit reported is communication skills.

	What do you think were the most useful skills gained through your TAShip?
1	For instructing assignments only: public speaking. Time management. Managing people. Communication skills. Better understanding of my own subject.
2	Understanding how students think about concepts and how to facilitate the best way of learning was the most useful gained skill
3	Communication skills: both in explaining complicated/technical ideas in written form and in dialogue
4	Practice of public speaking, extemporaneous lesson planning, classroom engagement, designing fair assessments, and one-on-one teaching.
5	Building educational relationships with students and getting them invested in the subject matters that I'm passionate about.
6	I think the most important skills I gained were lesson planning for the weekly recitation sections and writing exam questions. Both of these, put together, really helped me think about and experience how to construct learning objectives for a class, cater a lesson to meet those objectives, and properly assess students' understanding of the things I taught them.
7	Ability to utilize my own knowledge to make judgements on other students' thought processes
8	Learning how to teach, which requires understanding how your audience learns best
9	The course content of the course I led labs for. My students have gone on to say that that course single-handedly landed them jobs and made them stand out in their internships; I had not taken the course before I tutored them through it and now, having taught and debugged it, my skills in that area are substantial.
10	Coming up with ways to distill complicated concepts for students and explain them in a way that's more straightforward.

Table 3: Textual responses to a question on useful skills gained through a TAship. This question was shown to respondents who rated the perceived scholastic benefit from their TAship as 7 or more

TAship responsibilities

Figure 6 shows common responsibilities of TA's and how they vary across Colleges. Respondents were allowed to select multiple options to this question which we add up to produce Figure 6. Observe that across all colleges, grading assignments appears to be the most common responsibility. In the College of Computing, 'Responding to questions on Piazza/Canvas', is relatively greater than office hours compared to the College of Engineering likely reflecting the greater use of these tools by course staff. Observe also that relative to grading and office hours/Piazza activity, the College of Computing has the fewest number of respondents who report that they are involved in in-person class room activities like teaching classes, holding recitations or conducting labs. In all colleges, the first four rows involving grading, office hours and responding to questions dominate in-class activities like teaching classes/holding recitations/lab sessions. In contrast, the College of Design has the greatest relative proportion of students reporting that they are involved in teaching classes compared with other teaching responsibilities.

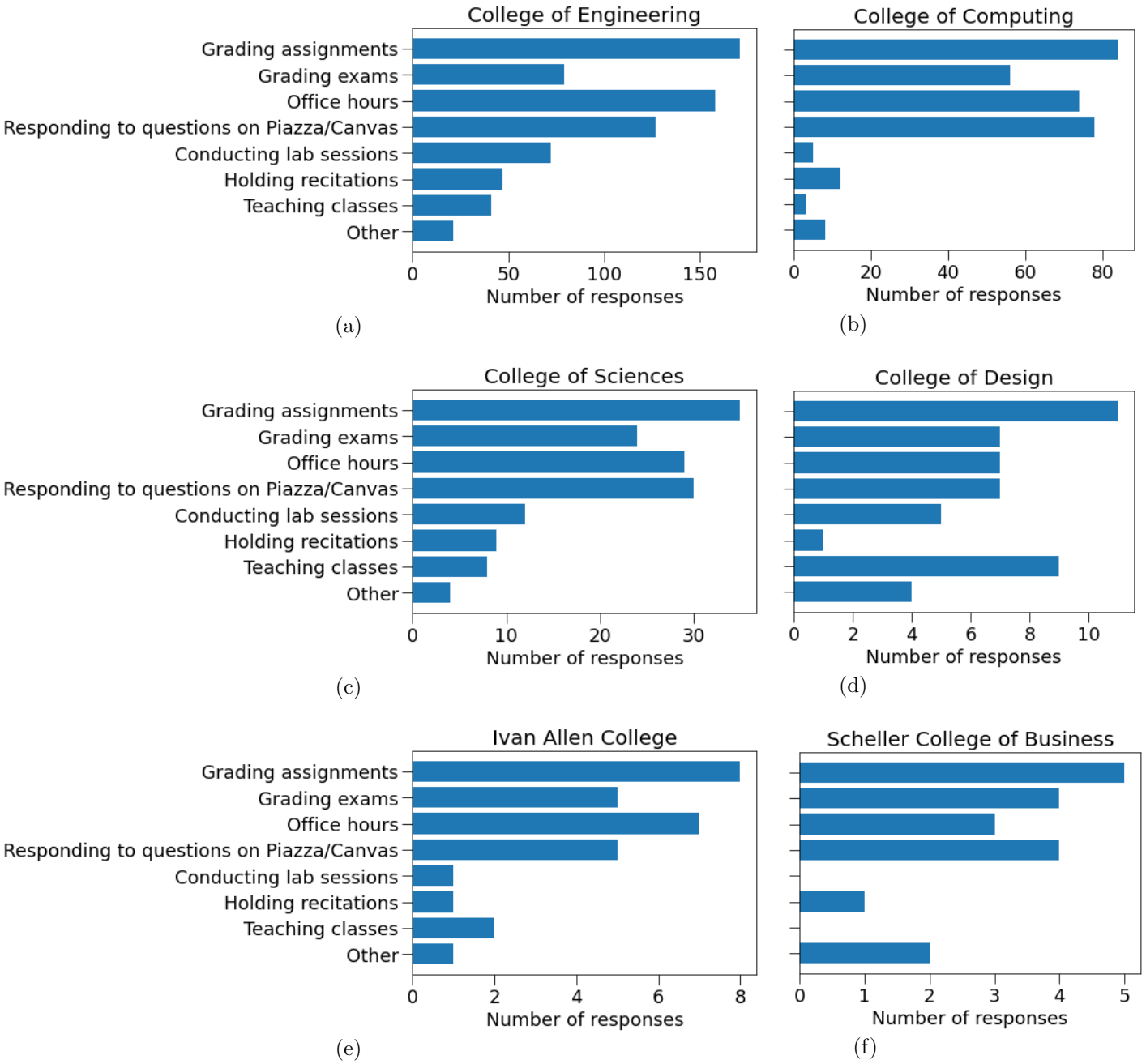


Figure 6: Bar chart of distribution of TAship responsibilities by respondents from different colleges on the Atlanta campus a) College of Engineering b) College of Computing c) College of Sciences d) College of Design e) Ivan Allen College f) Scheller College of Business

Tuition Waivers

The majority of respondents report receiving full waivers as shown in Figure 7. Nearly all of the respondents who reported that they did not receive a tuition waiver belonged to MSE, ChBE or BME. 13 respondents report receiving a half waiver. All of the respondents from CoB reported a half waiver while three students from the Schools of Computer Science also reported the same. One student each from ISyE, ME and CEE also reported this.

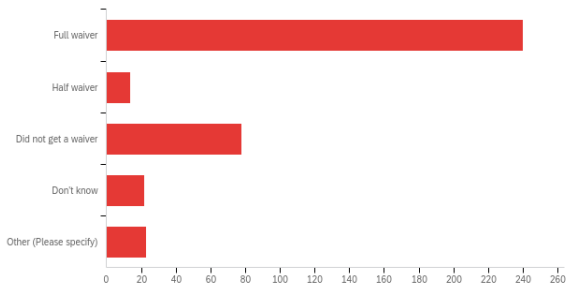
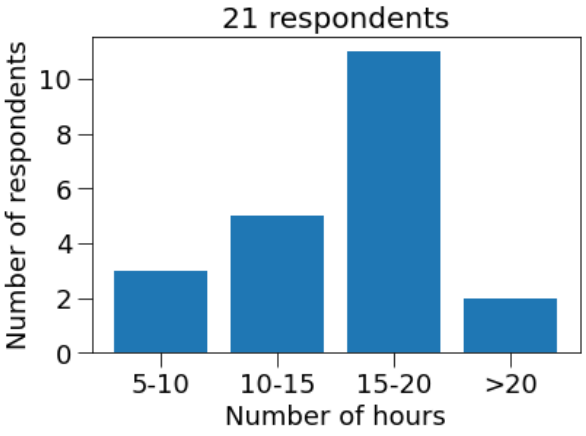


Figure 7: Distribution of tuition waivers

Analyzing the Online program

We analyze the OMSCS (Online Masters of Science in Computer Science) program in Figure 8 as we had the maximum number of respondents from this program from the Online campus. The median number of hours per week was 15-20 hours which is higher than the corresponding number from the College of Computing, Atlanta campus which is closer to 12 hours per week. Of note also is the variation in reported monthly salaries. In contrast to CoC Master's students who near unanimously report a salary in the $1000 range (Figure 2(a)), OMSCS TA's have a much wider range of reported salaries ranging from $1000 to $2000.



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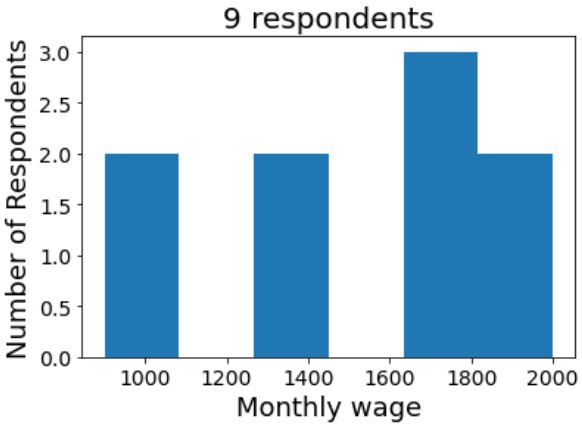

(b)

Figure 8: Some key metrics for TA's hailing from the OMSCS program a) Number of hours devoted per week b) Histogram of reported monthly compensation

Textual responses

Discrepancy

Selected textual responses to the question, 'Is there a discrepancy between the number of hours you are hired to work for and the number of hours that you actually worked for? If so, please describe' are provided in Table 4. 128 responses were received and 77 of the responses mentioned that there was no discrepancy.

	Is there a discrepancy between the number of hours you are hired to work for and the number of hours that you actually worked for? If so, please describe
1	Maybe. The load fluctuates every week, e.g., it is high during finals week but low during the thanksgiving break. Plus, it also depends on several external factors like the instructional team dynamics and of course, the pandemic. So what I am maybe trying to suggest is overtime pay, i.e., if you happen to work more than what you're paid for, you rightfully be allowed to apply to get paid for it instead of everybody sharing the pie.
2	Needed slightly less than 20h (I'm paid for) to fulfill duties
3	Being a Head TA is easily 30+ hours each week. Even if we're hired as a TA for 20, we almost always need to work more than that. Additionally, our advisors expect us to spend as little time TAing as possible so that we can do research. So TA semesters are basically an exercise in failing everything as gracefully as possible (can't dedicate enough time to research or TAing or classes).
4	Yes, I regularly spent over 8 hours per on my TAing, and I was not going above and beyond, just doing the bare minimum that was required of me.
5	Tremendously. I am required to do at most 10 hours a week, but I have been doing a consistent 17.5 hours per week. Most of the time is taken up by a combination of grading and reviewing the class content so that I can help the students.

Table 4: Textual responses to a question on discrepancies between number of actual hours spent Vs number of hours one is hired for

TA Compensation

Selected textual responses to the question, 'Is there anything further that you would like to let us know about the TA compensation policies of your school?' are provided in Table 5. The majority would like to see higher stipends on account on recent inflation and rise of rents in Atlanta. Some have reported that their pay is consistently delayed which is concerning as many graduate students do live from paycheck to paycheck (Comment 6 and 8).

	Is there anything further that you would like to let us know about the TA compensation policies of your school?
1	ISyE does not provide GTAs with tuition waiver to masters students which seems unfair when compared to other schools such as CoC that employees several TAs for a course with similar responsibilities and a tuition waiver.
2	TA compensation is not reflective of the hours that we work, but then again nor is our RA stipend (in both cases, the school pretends that we only work 20 hours/week despite demanding > 40 or else we are put in bad standing and kicked out).
3	As TA, my gross income for a year is $25044, out of which I pay about $3000 in fees to Georgia Tech. After taxes, I'm earning less than $20000/year, which is not enough to live by myself or sustain myself without debt in Atlanta. Please waive the institute fees for TAs, and increase TA compensation across schools to match the cost of living in Midtown Atlanta. We are students in our mid to late twenties, living with roommates should not be a necessity.
4	I would like a cheaper insurance option with a higher deductible (I don't want a higher deductible, but I realize that's how it works). Pay needs to keep up with the cost of food and housing around Atlanta (not the CPI or general inflation). Atlanta has grown considerably in the last 10 years and it has gotten extremely expensive. My apartment in SF was cheaper than Atlanta.
5	1/4th of the compensation I have to pay back to the school and every semester there is a payment delay of at least one month at the beginning. it halts my daughter's ssi and medicaid.
6	I haven't yet received any compensation for the semester even though I've been employed since the start. (Author's note: Student is from the School of Cybersecurity)
7	Monthly deposits can be tricky when they don't line up properly with the bills I have to pay. Even if it's the same dollar amount I'm being paid, a biweekly payment schedule would give me much more security
8	Processing with HR and OIE is too tiresome. My file is is still not processed even after two months of this semester and thus I haven't received my salary. (Author's note: Student is from the School of Electrical and Computer Engineering)
9	The TA compensation per month has been $2166.66 for the past 8 years or so. It was increased to $2400.00 just from Fall 2021. However, these numbers are applicable only for GTA-I position. There are other positions such as GTA-II which includes the same number of working hors but lower pay, which does not seem fair. Additionally, Head TAs of courses are required to put in more hours and effort but the compensation does not reflect proportionally.th (Author's note: Student is from the School of Aerospace Engineering)
10	It is very hard to make ends meet on the psychology stipend, whether as an instructor or TA. As a single man in atlanta living on my own, rent, phone, utilities and car payment alone come to $1700 pcm. The normal TA stipend is $2000 approx. I have to get a student loan every semester in order to survive, and so am going $30000 further into debt EVERY YEAR. I'm scared, i won't lie!
11	Not sure how to answer this. Econ sucks. We are assigned GTA/GRA roles less than 3 weeks before the terms begin. Also, PhD students have to teach full courses but are still listed as "GTAs." Moreover, we only get a $500/SEMESTER pay bump for teaching an entire 75-student course over being a GTA for the same course. Also, we're told not to spend more than 20 hr/week on teaching, which is impossible the first time someone teaches a course.

Table 5: Textual responses to a question on additional information on TA compensation policies

Conclusions and next steps

From the data collected from the survey, the most salient challenges that the Student Government Association believes need to be addressed are as below:

1. **Unpaid TAships as degree requirements**: This issue specific to three schools in the College of Engineering is perceived poorly by the graduate students subject to these requirements. Students are required to perform teaching duties which are unpaid while being funded by other sources to do research. This activity is not perceived as aiding their scholarly development and is likely used by these schools to fill all course staff requirements without having to pay for it. In addition, students in some schools like MSE are required to do this for 5 semesters.
2. **Higher wages for College of Computing Master's students**: Out of all Master's students, the ones in the College of Computing have the lowest monthly wages as well as the lowest effective hourly wages of around $20/hour. The corresponding number for Master's students in the College of Engineering is $38/hour which is nearly twice of what students make in the College of Computing and is a disparity that should be addressed.

Code and data availability

The code and data used in this survey are available at `https://github.com/pranav-s/GeorgiaTech_TAship_survey`

Contact details

The author may be contacted at pranav.shetty@gatech.edu

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3. Departmental student organizations: Hayri Dortdivanlioglu, Joseph Kern, Amalie Atassi, Sun Yueyi, Tiffany Tsui

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Appendix

Survey questions

1. Have you served as a graduate teaching assistant or grader in the past or currently serving as one?
2. Which campus of Georgia Tech are you enrolled in?
3. Which College are you in?
4. Which School are you in?
5. What is the primary program that you are a part of?

6. Select the role below that is closest to your most recent TA role
7. What kind of tuition waiver did you get for your most recent TAship?
8. How many semesters does your school require you to TA?
9. If instead of a fixed number of semesters, your school has a different system with respect to teaching requirements, please tell us about that here
10. On average, how many hours per week were you required to devote to TA responsibilities for your most recent TAship?
11. Is there a discrepancy between the number of hours you are hired to work for and the number of hours that you actually worked for? If so, please describe
12. Are you paid for your TAship by the school?
13. Is your compensation hourly or monthly?
14. What is the dollar amount of compensation received for your TA duties?
15. Is there anything further that you would like to let us know about the TA compensation policies of your school?
16. How beneficial do you think the skills that you gain through your TAship will be to you after you graduate? 0 indicates not useful at all and 10 indicates very useful
17. What do you think were the most useful skills gained through your TAShip? This is the last question of this survey

The survey was conducted using the platform Qualtrics and was distributed using several different mailing lists. Some of the mailing lists were institute specific such as the Grad Communications newsletter and Office of Graduate Studies Newsletter. Others were more department specific such as the OMSCS slack channel, ChBE and Aerospace mailing lists and many others. Senators from various schools and departmental student organizations helped with circulating the survey. For archival purposes, the survey will continue to be maintained at the link `https://gatech.co1.qualtrics.com/jfe/form/SV_dnxnQ1QB5CTNSm2`

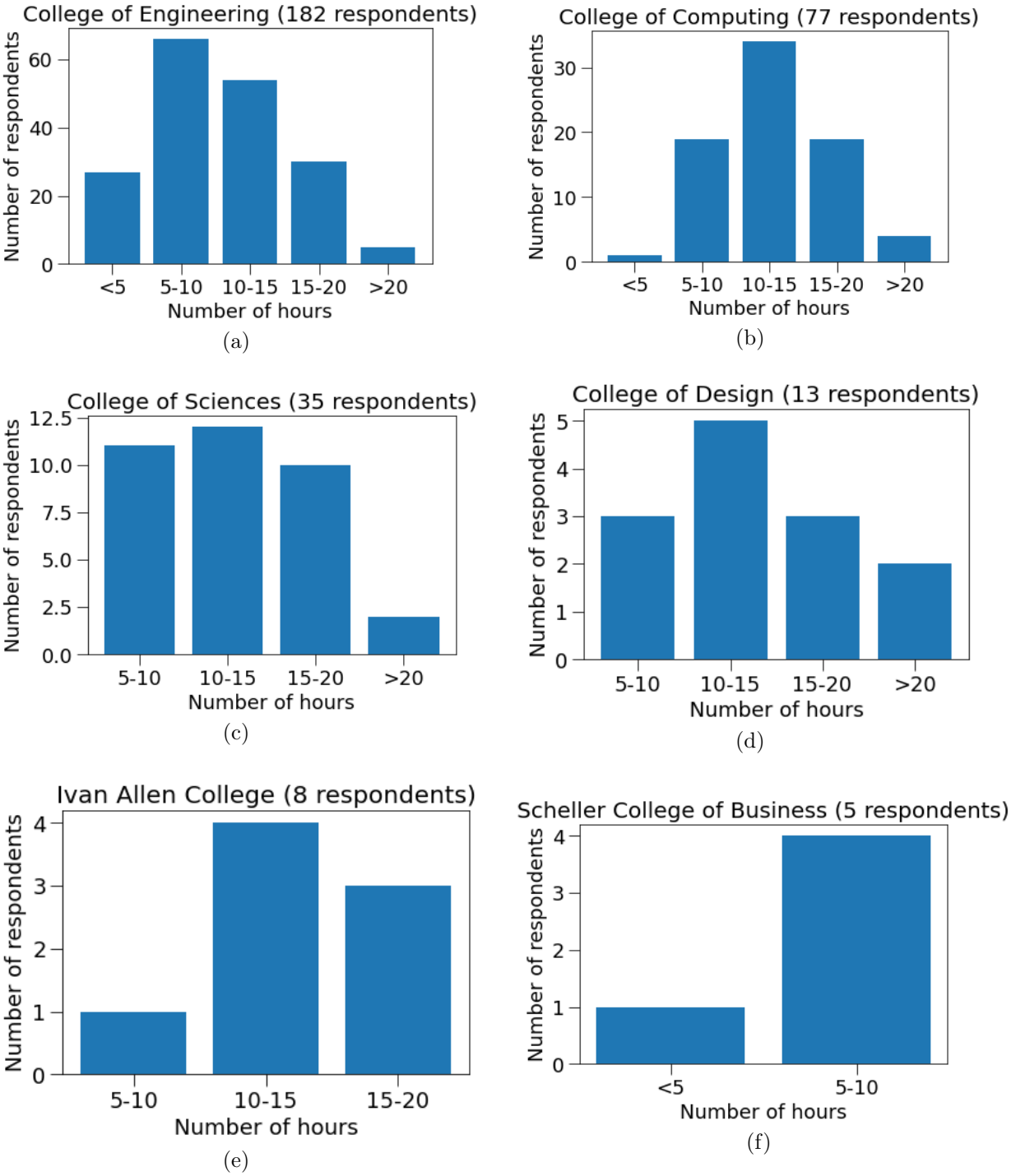

Figure 9: Bar chart of number of hours spent per week by respondents from different colleges a) College of Engineering b) College of Computing c) College of Sciences d) College of Design e) Ivan Allen College f) Scheller College of Business

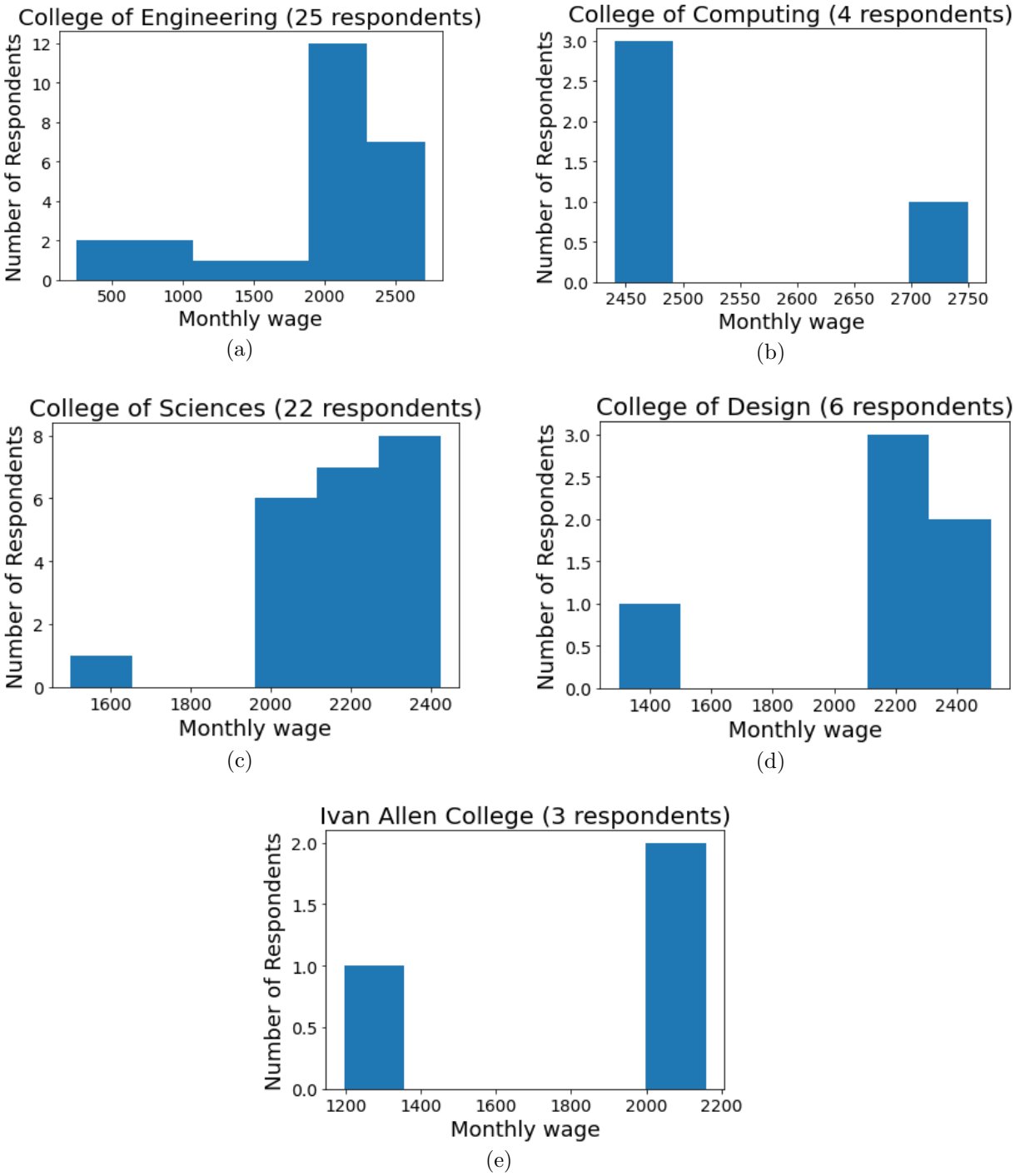

Figure 10: Histogram of monthly wages by PhD respondents from different colleges a) College of Engineering b) College of Computing c) College of Sciences d) College of Design e) Ivan Allen College

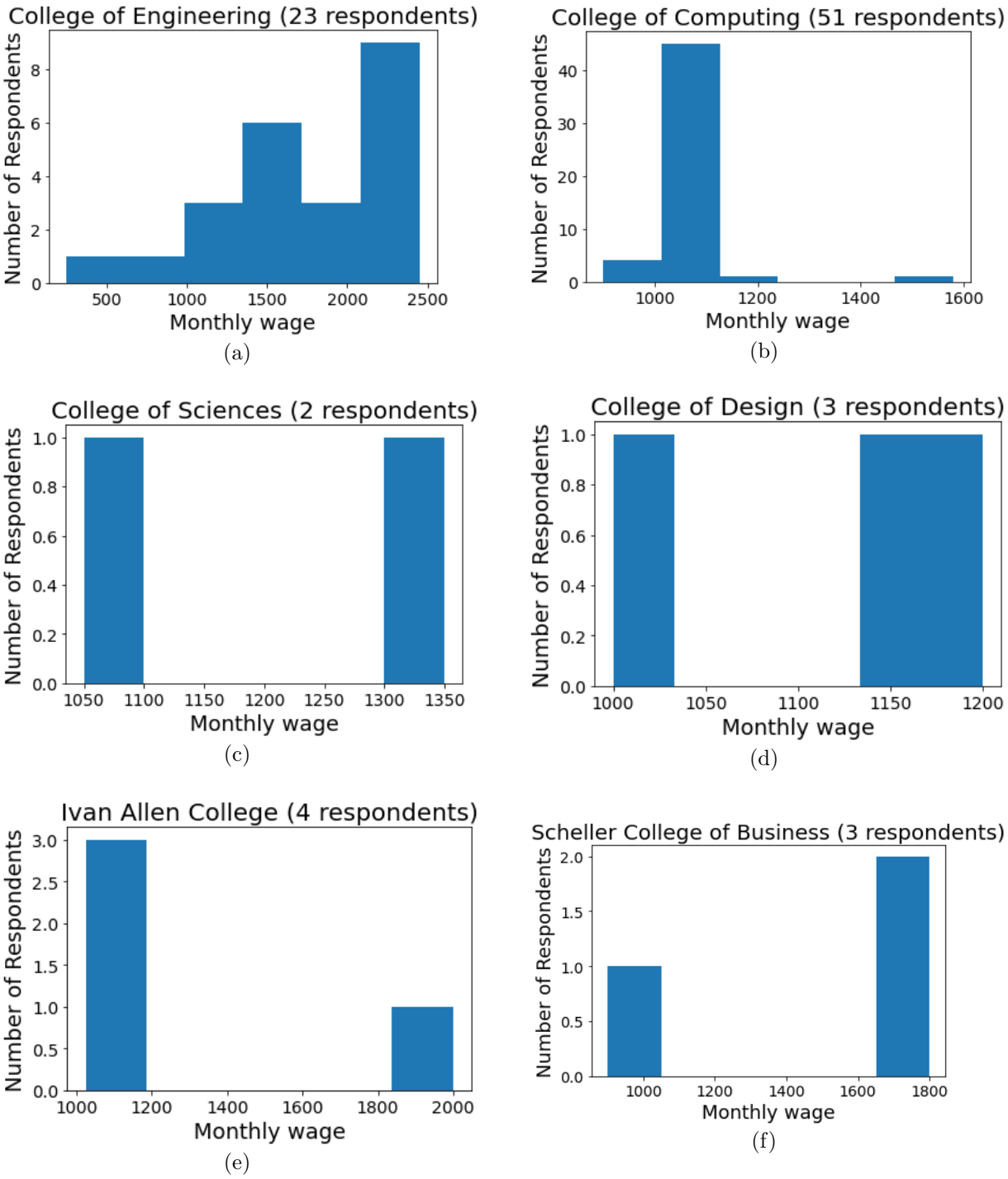

Figure 11: Histogram of monthly wages by Master's respondents from different colleges a) College of Engineering b) College of Computing c) College of Sciences d) College of Design e) Ivan Allen College f) Scheller College of Business