During the past year, the CS Program has a change of leadership. New EO, Prof. Ping Ji, has utilized the time to consolidate the resources and records of the CS program. Below is a summary of her findings so far.

**Overall Student Records – Current Students**

Student’s academic progress was evaluated by the following steps:

- The “**Academic Progress Report**” form [1] was put up online through *qualtrics.com*, with which GC has an institutional license. A sample form is attached with this report.
- The survey form is filled and signed by the students online first, which will then automatically be forwarded to the student’s mentor specified in the form, and the department email account. This way, if a student does not currently have a mentor, the department can notice it right away.
- After reviewing the filled form, the corresponding mentor will sign the form online to complete the review process. The department will automatically receive a notification upon the completion of the review.

From the (incomplete) data set\(^1\) collected from 79 current students (while the program has a total of 122 active students shown in CUNY First as of June 2020), the following observations can be conducted, and more details are shown in Figure 1:

- 33% of the surveyed students have spent more than 10 semesters (5 years) in the CS program
- 22% of the surveyed students have spent more than 13 semesters (6.5 years) in the CS program
- And 15% of the surveyed students have spent more than 17 semesters (8.5 years) in the CS program

![Figure 1: Distribution of # of semesters spent in the program, current GC-CS students](image)

\(^1\)The student progress report survey was first launched on June 4\(^{th}\), 2020. Thus, it is still an on-going activity by the time of this report. Our target deadline for future annual reviews, following the same procedure, will be April, 1\(^{st}\).
Figure 2 further shows the amount of time that the students of different levels of their study have spent in the program, which indicates that for each of the three academic levels, there are students spending more time than what the program suggests (maximum 4 semesters in Level I, maximum 8 semesters in Level II, and maximum 14/16 semesters to degree depending on whether a student had Master’s degree before joining the program).

![Figure 2: Distribution of # of Semesters Spent in Program for Different Levels of Students](image)

While trying to understand why many of our students spend more time to finish the PhD study than the suggested duration by GC’s guideline (14/16 semesters with or w/o Master’s degree), it is also worth noticing that the overall time for a Computer Science doctoral student to finish the degree has been high historically. As shown in Table 1 from the Computer Research Association’s web report [2], the national median time to degree for CS PhD students is roughly 9 years since the completion of bachelor’s degree, and between 7-8 years since first graduate enrollment. Although no new statistics were found for recent years after 2012, it is reasonable to assume that the number stays steady.

| Table 1. Median Time to Degree in Computer Sciences and Related Broad Fields. |
|---|---|---|---|---|---|---|---|---|
| | Since completion of bachelor's | | | Since first graduate enrollment | | | |
| | Computer Sciences | Physical Sciences | Engineering | Computer Sciences | Physical Sciences | Engineering |
| 2004 | 9.3 | 7.8 | 8.4 | 7.8 | 6.7 | 7.2 |
| 2005 | 8.9 | 7.8 | 8.3 | 7.7 | 6.7 | 7.2 |
| 2006 | 8.9 | 7.7 | 8.1 | 7.8 | 6.7 | 6.9 |
| 2007 | 8.8 | 7.8 | 7.9 | 7.4 | 6.7 | 6.7 |
| 2008 | 8.8 | 7.7 | 7.9 | 7.3 | 6.7 | 6.7 |
| 2009 | 8.8 | 7.5 | 7.9 | 7.6 | 6.7 | 6.9 |
| 2010 | 8.9 | 7.6 | 7.8 | 7.6 | 6.7 | 6.9 |
| 2011 | 8.9 | 7.6 | 7.8 | 7.7 | 6.7 | 6.8 |
| 2012 | 8.8 | 7.5 | 7.5 | 7.4 | 6.7 | 6.7 |

With these statistics and observations, it is worthwell to re-evaluate the rationality of five years funding requirement set by the Graduate Center for the Computer Science program when admitting new students. As in a research field largely supported by research funding from
government agencies and private companies, the CS program has the capacity and great potential to provide financial support with external funding. While most of research funding in CS field are ranging between 2 to 5 years, very few single funding source could guarantee for five years support. However, most of the research active faculty members in the department obtain research funding continuously over time. Furthermore, when the time-to-degree in our field is significantly greater than 5 years, by setting a five years goal does not help in motivating the students and reducing the time that they spend in the program, since the quality of research and academic development are more important than rushing the students to graduate.

Student/Mentor Relationship:
In the past, the CS program usually assigns a thesis mentor when a student is admitted to the program. This practice is largely due to the requirement for five years funding commitment at the beginning of a CS student’s study, and yet only 3 GCF lines are allocated to the CS program annually. To ensure five years funding, the CS program is forced to ask faculty members to commit their research funding from the beginning years of newly admitted students while the students might know little about the field yet and while they have to spend most of their times working on course credits. This practice has also been largely abandoned by research active Computer Science departments around the nation. Although efforts have been made to pair up a new student with a potential mentor from the very beginning of a student’s study, the risk for the mentor/student relationship to break up is very high. The heavy tail distribution in the longevity of study shown in Figures 1 and 2 also reflects problems in student and mentor bounding. On one hand, new students need time to learn about CS program in general, finish their course credit requirements, and establish true interests in a particular research direction; on the other hand, faculty members need time to know the students better and find the rightly motivated students for their research labs. This is another strong reason for re-evaluating the rationality of five years funding requirement set by the Graduate Center for the Computer Science program when admitting new students.

Although the procedure for connecting students with mentors from the very beginning could be fundamentally questionable, with the newly established online Student Progress Report survey system, the CS program has been able to track and maintain the existing student/mentor relationships. This new online tool is an excellent channel for the students, the faculty members, and the administrative members of the department to communicate and collaborate to improve the status of the program collectively.

Faculty Support:
To better engage doctoral students for PhD level research, having outstanding research faculty to teach and mentor at the Graduate Center is a key! The Computer Science PhD program has over 100 faculty members listed on record with GC’s provost office. Many of these faculty members are active Computer Science researchers, with a significant portion of faculty members having Applied Mathematics background. With the current momentum of research in Advanced Data Mining, Machine Learning, Artificial Intelligence, and other Information and Systems aspects, the joint strength of Computer Scientists and Applied Mathematicians forms a unique edge in CS research of the GC CS community.

However, with the overwhelming needs for Computer Science faculty members across the nation due to the undeniable and unignorable demand for the CS disciplines in education and
job market, it is hard for CUNY campuses to recruit new CS research faculty successfully. Over the past year, the CS PhD program at GC welcomed three new Computer Science research professors to the team, with two faculty members from Hunter College and one faculty member from Queens College.

When CUNY Graduate Center should be representing the highest level of academic research in education system, the support for PhD faculty members of GC CS community is way below it of other research active institutions. For example, Figure D4 from [3] shown below lays out the average number of students per faculty member in CS PhD programs across the nation. When our GC CS PhD program, which has over 100 faculty on record, is restricted to only recruit 14 students each year, with a mere 3 full scholarships (GCFs) provided by the GC, the contrast between our program and other similar programs, and thus the disadvantages that the hardworking CUNY CS research professors are obvious and disturbing!

![Figure D4. PhD Enrollment Normalized by Tenure-Track Size](cra.org/crn)

**Summary:**
Over the past year, the GC CS program is rejuvenated with various of research and social events. Our revised website contains newsletters for the year, and other events such as seminars & colloquium talks, news & announcements including faculty and students’ awards, etc. For more details about recent development of the GC CS program, please visit [4].

Overall, if given better support and recognition from GC administration, the CS program has the talents and great potential to grow into a leading research department in CS field!

More detailed assessments on the examinations of each academic levels will be explored over the next year.

**Reference:**
[1] https://gccuny.az1.qualtrics.com/jfe/form/SV_51kxxx0fwo8HikF