Assessment of Student Mentorship

Goals

The goal of the faculty is to mentor students as they transition from student trainees to professional independent scientists. The intellectual and technical skill development guided by their research mentor and supported by their collaborators and network with the community of scholars, is augmented with lessons in professional development delivered by the Program, the Subdiscipline Chair, and the dissertation committee, as well as, the research mentor. Both the technical skill set and level of professional maturity are required for a successful independent research career in Chemistry.

Description of Student Mentorship

Student mentorship comes in many guises in the PhD Program in Chemistry as the Program guides the student into a professional independent scientist. Mentorship starts early with the setting of expectations in the first-year class upon arrival. The Executive Officer begins with an orientation to the program including a discussion of the importance of research mentor selection. The Executive Officer is aided in this by the seven Subdiscipline Chairs who serve to advise students on their research rotation selections that ultimately lead to their research mentor selection. The first-year students all take a professionalization course taught by the Executive Officer, Chem 79500. This course includes active learning exercises in professional communication, professional behavior and ethics, reading scientific literature, writing and reviewing grants, and leadership skills. These lessons are augmented by the Graduate Center’s training in the Responsible Conduct of Research and safety training at the Advanced Science Research Center.

The two required research rotations provide students with a glimpse of the mentorship style and approach of potential faculty research advisors as well as a chance for the students to experience the culture of the research laboratory. Students are required to perform two rotations at two distinct CUNY campuses to get an idea as to the breadth of research opportunities available at CUNY. The students discuss their choices and experiences with the Executive Officer and their Subdiscipline Chairs as they narrow down their search for a research mentor. Student are advised to maintain positive relationships with the rotation faculty that they did not chose as research advisor so that the rotation faculty might serve on their dissertation committee.

When students join the laboratory of a research advisor, he/she becomes the primary mentor in terms of technical skills and day-to-day mentoring of the student intellectual and professional development. This mentorship is supported by the dissertation committee which meets annually to ensure the student’s progress to degree. The Executive Officer and Subdiscipline Chair also play a supporting role in mentorship with the former being more directly involved with conflict between the student and research mentor arises. Lastly, senior lab mates and collaborators play a role in mentoring students to a greater or lesser degree depending on the situation.
Assessment Student Mentorship

Mentorship of students in the Chemistry PhD Program is somewhat uneven in style, content and impact since it is largely delivered by the research mentor. The demands on research mentors in terms of teaching load, service to their Department/School/College/the PhD Programs and research productivity stress the ability of well-intentioned research mentors to focus on student mentorship. The same is true for dissertation committees which largely defer to the wishes of the research advisor and do not actively seek to mentor the student unless specifically approached to help resolve an issue. Subdiscipline Chairs do a good job mentoring the students as to the requirements of the PhD Program in Chemistry, but don’t have sufficient interaction with the students to provide lasting mentorship impact. Likewise, the Executive Officer concentrates his/her focus on the first year students, without a research mentor, and acute issues that arise between faculty advisors and students.

The greatest issue arises when a student and their research mentor can’t resolve their issues and dissolve the mentorship arrangement. This places the student in immediate peril which the Executive Officer must assess and resolve in a timely manner to ensure that the student remains on the path to degree. This includes, but is not limited to, facilitating a search for a new research mentor as well as negotiating with the campus Chair for financial support.

In reviewing the students between 2012-2017, it is observed that ~10% of students-mentor relationships dissolve in the PhD Program in Chemistry. Of these, the majority are one-time events where the student completes their PhD under the new advisor, perhaps with a split-thesis based on research from the labs of both research mentors. There are instances where a student cycles through several mentors before they find a long-term research mentor. The causes of these mentor-mentee separations are varied from interpersonal conflicts between the student and mentor, student and other members of the research group, to students inability to meet the expectations of the research advisor, to financial issues on the part of the research advisor, to departure of the faculty advisor from CUNY or this Earth. Each of these is dealt with on a case-by-case basis by the Executive Officer and some come with some prior consultation, others without.

The PhD Program in Chemistry has several students whose mentors have retired from CUNY. These students intended to complete their dissertations shortly after the departure of the faculty member from CUNY, but were delayed to the point where it is unclear whether the student will ever complete and successfully defend the dissertation. The mentorship of these students falls to the Executive Officer.

Suggestions

The mentorship model of the CUNY PhD Program in Chemistry follows practices of the national norms. Dissertation committees should be reminded of their role in student mentorship prior to each annual committee meeting. Chemistry should consider implementing a specified student mentor outside of the research mentor and/or dissertation committee. Lastly, the PhD Program in Chemistry should consider codifying practices for the separation of the student-mentor relationship to provide additional protections for the student.