

A survey of graduate and post-doctoral students at the University of Maryland Department of Chemistry and Biochemistry was conducted by the Graduate Student Organization (GSO) in December 2010. The objective of the survey was to gain feedback from students regarding the Department's performance in four key areas: academics, research, teaching assistantship and professional development. Thirty-six percent of the graduate student body responded to the survey, consisting of 37 pre-candidacy students, 29 post-candidacy and 2 post-doctoral students. Major contributors to the survey were Organic, Biochemistry and Analytical students (~20% each) followed by Materials, Inorganic, Physical and Multidisciplinary students (~10% each).

Key Findings

- Students reported a high level of satisfaction with the student seminar and Independent Proposal processes, research facilities and instrumentation as well as the intellectual, professional and social climates of the Department. Students felt well informed about academic advising and advisor selection, further, they received regular feedback from their research advisors.
- Conversely, students indicated an insufficient number of course offerings and seminars related to their research area, fellowships, awards and mentorship opportunities. Additionally, those who reported that cumulative exams were not administered or graded fairly also felt that cumulative exams were not an integral part of the PhD process. Students expressed strong interest in receiving feedback on TA evaluations.
- In the essay portion of the survey, the comments provided closely reflected the results of the survey. Students also revealed that there were many opportunities for interdisciplinary research and that the graduate student office, loading dock and chemistry stores staff were very helpful. Students indicated dissatisfaction with salary, building security and the number of classes and seminars offered per research area.

Students responded to seventeen questions (Table XX) according to the Likert Scale (1-5) where a score of 1 indicates that the student strongly disagrees with the question and a score of 5 indicates strong agreement. The results were compiled and then the average response (dark circle) was calculated for each question (Figure 1). Two trends are observed in the data, shown by the solid horizontal lines in Figure 1. Based on these trends, it can be interpreted that responses falling within the upper line centered at approximately 4 on the Likert Scale corresponded to topics which were well-received by the students (**emboldened** in Table XX). Those responses that fell along the lower line centered at about 3 on the Likert Scale were less well-received by students. For all questions, the standard deviation was consistently ~ 1.00.

Table XX. 2010 Chemistry and Biochemistry Graduate Student Survey.

Academic

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|---|---------------|
| 1. I have been provided with adequate and effective academic advising. | (3.85) |
| 2. There are a sufficient number of course offerings related to my research area. | (3.12) |
| 3. The department maintains a strong intellectual climate. | (3.83) |
| 4. Cumulative exams are an important component of the PhD process. | (3.06) |
| 5. Cumulative exams are administered and graded fairly and in a timely fashion. | (3.02) |

6. Student seminars or Independent Proposal (IP) are important to the PhD process (3.97)

Research

7. I was well informed about the process of selecting an advisor. (4.03)

8. There are adequate research facilities and instrumentation to complete research. (4.07)

9. I obtain regular feedback from my advisor regarding my progress. (3.85)

10. There are an appropriate number of seminars related to my research area. (3.16)

Teaching

11. I have received sufficient teaching assistant training (3.74)

12. My teaching assistantship workload is reasonable (3.55)

13. I have received feedback regarding my teaching evaluations (3.16)

Professional Development

14. The department maintains a professional climate. (3.96)

15. Sufficient number of fellowships, scholarships and awards (3.13)

16. I am aware of mentorship opportunities (graduate student, faculty, professional) (3.09)

17. I network (am social with) with graduate students who are not in my group (3.81)

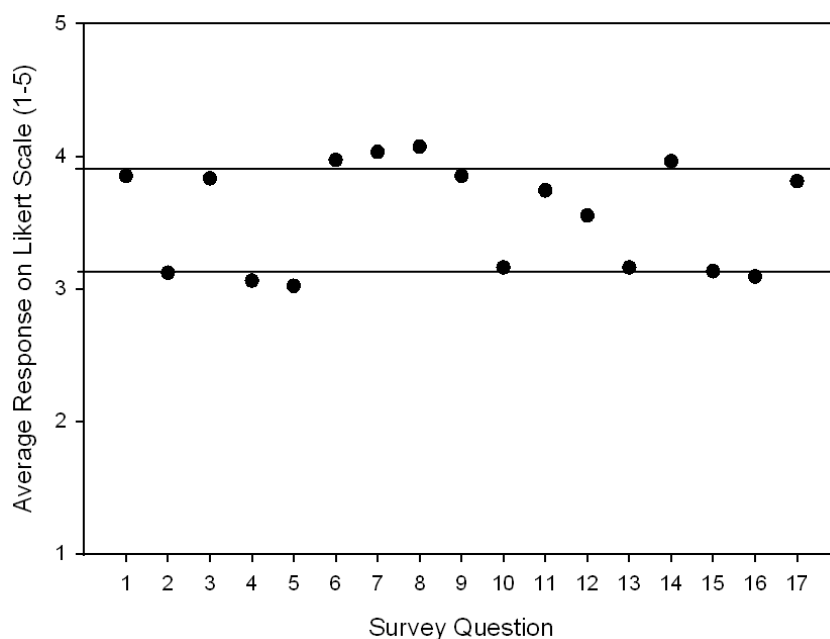


Figure XX. Average Likert Scale response for each survey question. Questions 1-6 pertain to academics, questions 7-10 pertain to research, questions 11-14 correspond to teaching and questions 15-17 relate to professional development.

The survey topic of Research received the highest marks (3.8 units) from both Chemistry and Biochemistry students. Within the Academic, Teaching Assistant and Professional Development topics, Chemistry students generally provided more positive responses than Biochemistry students (+0.9 units) notably on the topics regarding teaching assistantship workload, professional climate and the number of available fellowships and awards. No significant trends were observed for pre-candidacy students compared to post-candidacy students.

The written responses to two essay questions regarding areas in which the department was doing well or areas in which improvement was needed were compiled. The aggregate responses supported the responses received in the numerical portion of the survey. Selected, representative responses to both essay questions are shown below. Students highlighted the diversity of students and events as well and opportunities for interdisciplinary research as well as the need for student study areas and improved process for advisor selection for first year students.

What is the Department doing well?

- Instrumentation is top notch and well maintained. Professors are intelligent and are good teachers. High quality research and publications, diverse membership of students, events.
- Tia and Diane are doing a great job! There is good communication via email from Tia, GSO. Everyone in the business office is very competent.
- Seminars (outside speakers have been great). I have great communication with my advisor. I am not left wanting for any equipment in my lab.
- The department provides a great amount of tools needed to complete research. Many opportunities for collaboration and interdisciplinary research.

What are some things that the Department can improve?

- Seminars (caliber of speakers) need improvement. Classes offered are too limited. Study areas for graduate students are needed. Wings 1, 2, 5 need upgraded facilities. Increased salary for graduate students (cost of living is very expensive).
- Cumulative exams are not equitable between research areas; students are not provided with material in advance and are graded slowly. Tension between faculty and (at times) unwillingness to collaborate. Not enough analytical seminars (none!). There should be a winter class on preparing for candidacy. The credit system is very confusing.
- Split organic and inorganic into two seminars. For the entire term, there has only been one relevant seminar. I would like to receive feedback on my teaching evaluations. Selection of labs for first years - the process itself is inefficient.
- Keep good track of the students during their career. Prepare students for a career in the industry. Promote interaction between older and younger students. Promote interactions between Chemistry and Biochemistry.