

*From the Graduate Association of Aeronautics and
Astronautics (GA³) on behalf of the graduate student body,*

PRELIMINARY SUBMISSION TO THE VISITING COMMITTEE
FOR THE DEPARTMENT OF AERONAUTICS AND
ASTRONAUTICS

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1 Introduction

This report serves as a summary of the quality of life, opinions and issues of the graduate students in the Department of Aeronautics and Astronautics. In the past year, a combination of events have brought significant change to the graduate student body in the department and future events might drastically alter the entire AA community. The search for a new Department Head in the Spring of 2003 and the formation of a departmental graduate student group, the Graduate Association of Aeronautics and Astronautics (GA³), reflect a different graduate community than when the Visiting Committee last came to the Department. While issues and concerns commonplace to the entire graduate student body point to some room for improvement and the need for attention to the graduate program by the Department, the overall quality of life of the AA graduate student is good, morale is generally high and students are satisfied with their education.

This report details the Department Head search that organized the graduate students and uncovered many shared issues and opinions. These issues, coupled with medical insurance policy changes for the entire graduate community at MIT precipitated the formation of the GA³. Once organized, the GA³ performed two initial surveys that culled valuable information from the graduate students. First was a comprehensive survey on the quality of life of the graduate students in the Department. Second, a discussion and survey of opinion of the dominating issue of a potential merger with the Department of Ocean Engineering. This report includes summaries of the results of both of these surveys.

2 Department Head Search of Spring, 2003

In the spring of 2003, the Aeronautics and Astronautics Department conducted a search for a new department head. Graduate student representatives were chosen from each department laboratory and were asked to meet with their labs and get feedback on the a series of questions posed by the search committee. In addition to asking for candidates for department head, the graduate students were asked what they thought of the current mission statement and vision of the department and what issues and challenges the department should address over the next five years. Not surprisingly, many graduate students had similar concerns about the direction the department was taking and their role in the Aero Astro community. In general, the graduate students were looking to have more input in department decisions involving them, and wanted better and more consistent communication regarding changes in policies and procedures. Other common issues included the qualifying exam, career services, and social events.

It was recognized that the structure put in place to gather graduate student feedback for the department head search could be used in the formation of an Aero Astro graduate

group. The need for this kind of group was made more apparent in late spring of 2003 when the graduate students were informed of a large increase in the health insurance premium. The Graduate Student Council went to work immediately with the administration to try to lower the premium. Several of the graduate students involved in the department head search recognized that having an advocacy group within the department could give graduate students a representative, unifying voice with which to work with the department head and graduate committee to address important issues. Much of the organizational work was done in the Summer of 2003 which culminated in the GA³ receiving Association of Student Activities (ASA) recognition in September 2003.

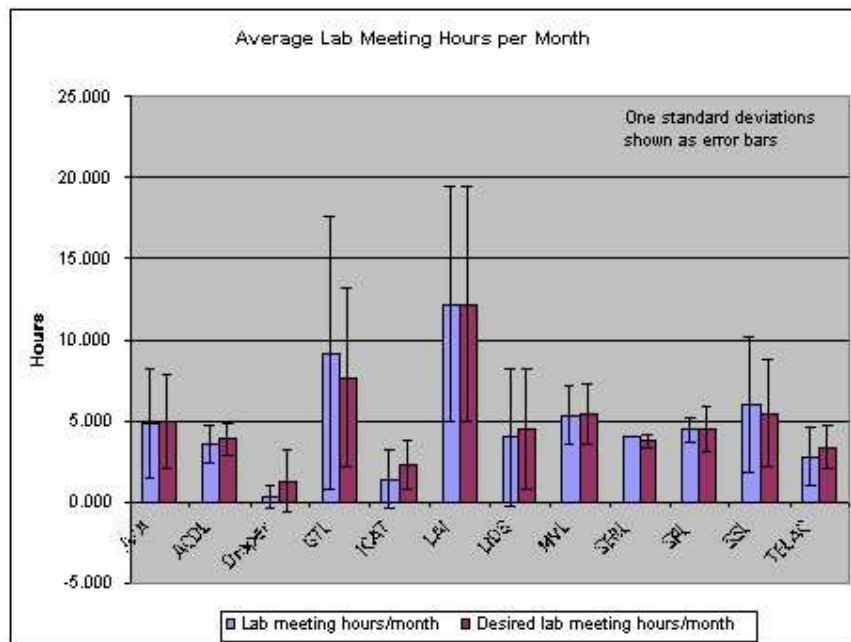


Figure 1: Average Lab Meeting Hours per Month - reported and desired. Averages per department and by lab shown. Error bars are one standard deviation of the data set.

3 Summary of Graduate Quality of Life Survey

GA³ conducted a survey of the graduate student population in order to gather information on the quality of life in our department. Almost 100 graduate students participated in the survey, with representations in all affiliated laboratories. What proceeds are the highlights of the results of the survey.

In the center of every graduate student life is their relationship to their lab and advisor. We wanted to find out how many hours were students spending with each and if this number was satisfactory. Figure 1 details the time spent and time desired spent with the labs, while Figure 2 focuses on the one-on-one advisor time.

On average, there is little difference between the reported average number of lab meeting hours per month and the number of hours they think there should be. We can thus assume that most labs are content with the number of meetings they have. Most labs are also close to the department average of 5 hours. However, there are a couple of labs that deviate from the norm, in both directions. For example, ICAT only meets on average 1.5 hours a month while LAI meets around 12 hours a month.

On average, it appears that most students are meeting with their advisors once a month or

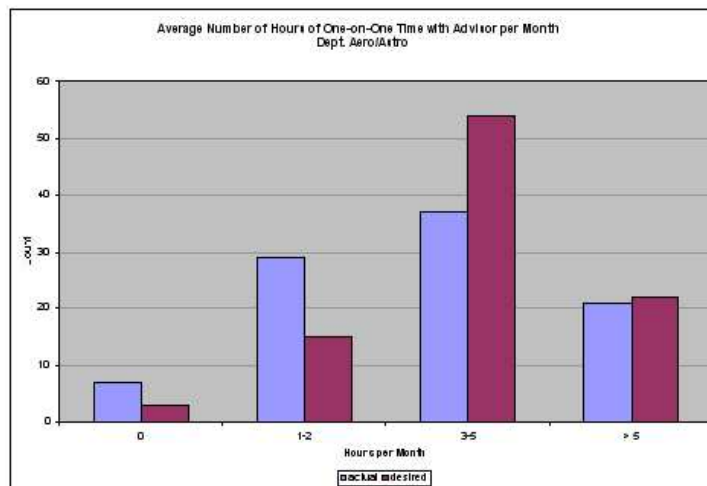


Figure 2: Average Number of Hours of One-on-One Time with Advisor per Month - reported and desired. Department Aero/Astro averages.

once a week and most wish to hold this average. Unfortunately, there is a significant amount of students that are either not meeting with their advisor or do so infrequently. Individual lab reports can be found in the Appendix. For example, a few of the labs that show a larger number of students meeting less than 2 hours instead of 3–5 hours are SSL, LIDS, and MVL.

In terms of the number of hours students are working per week, the averages are within the norm. Most students are working between 20 - 40 hours a week.

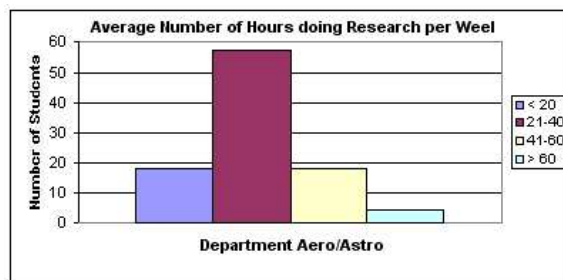


Figure 3: Average Number of Hours doing Research per Week – department averages.

On similar lines, the number of hours students are working a second job is minimal.

Average cost of living is about the same across all labs (\$1700) - which means students are not working other jobs in order to pay for their expenses either.

Another positive result from our survey is that graduate students are getting the opportu-

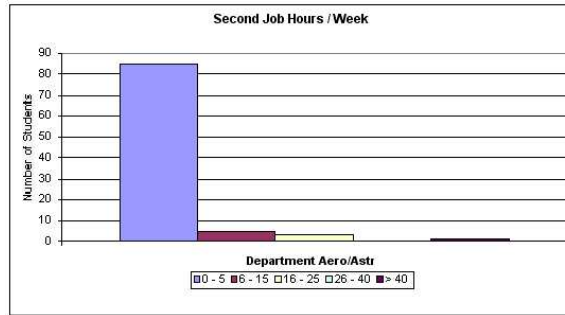


Figure 4: Number of hours working at a second job (aside from research work) – department averages.

nities to publish their research. Most students are publishing once or twice per year. About 20% of students surveyed did not have any publication opportunities. However, we must keep in mind that this may be the response of first year (starting their second year) students.

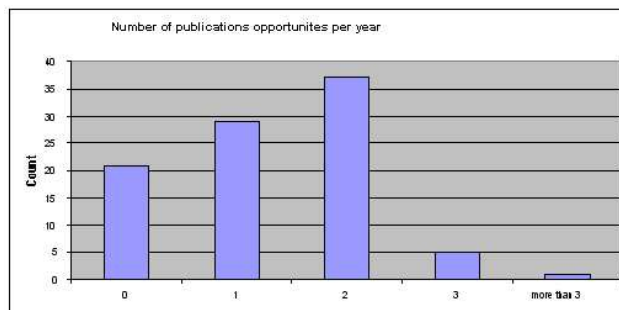


Figure 5: Number of Publications Opportunities per Year.

Finally, graduate students were asked how they felt about the relative difficulty of the Ph.D. process in comparison to other MIT engineering departments. The results are as follows:

A majority of the students feel that the Ph.D. process in this department is relatively hard or very hard. Only about 17 students felt the process was "just right". This result is a reflection of the frustration students voiced in their comments (there were comment sections). In particular, students commented on improving the organization of qualifying exams and the dissemination of information about it. Some students suggested no general examinations as well.

Positive comments about graduate students' academic life are:

- The flexibility in schedule and classes

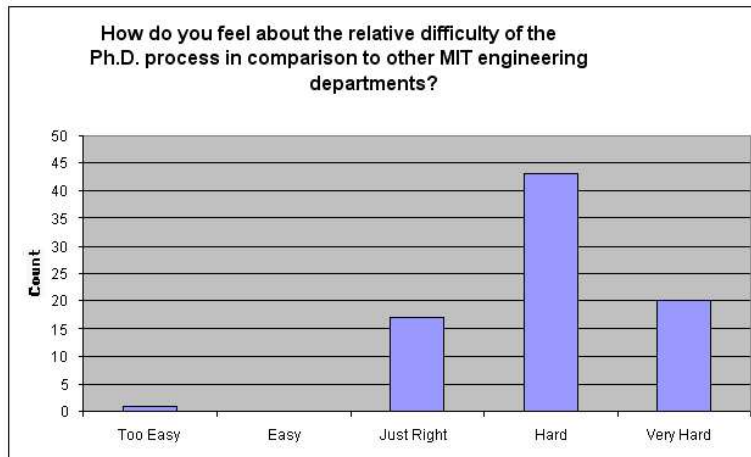


Figure 6: Relative Difficulty of Ph.D. Process in Comparison to other MIT Engineering Departments.

- The variety of classes
- Interesting research, great advisors, and faculty
- A sense of community within lab

Improvements that could be implemented with our department, as voiced by the graduate students are:

- Improving department sense of community at the graduate level
 - Learning about other student projects and laboratories
 - Help with faculty-student interactions
 - More graduate student activities
 - Acquiring a common lounge
 - Improve/update website
- Implementing certain courses
 - More classes, particularly in structures
 - More flexibility in math requirements
- Improving office space and increasing stipends
 - Covering student life fee
- Bringing M.Eng. program back

- Create more opportunities to attend and publish in conferences
- More meetings with advisor and structured research

4 Summary of Ocean Engineering Merger Discussion

To gather information about the graduate student response to a possible merger between the Ocean Engineering and Aero/Astro departments, an informal discussion was held within each lab in the department. At this meeting, the members of the lab were given some basic background information about the Ocean Engineering department and the reasons that it is being dissolved. The students then discussed possible pros and cons for the merger and the responses were collected and summarized by the department graduate student council. There was no clear consensus from the graduate student body on whether or not the department should proceed with the merger. Many questions about the merger remained unanswered and students expressed a desire to know more detailed information about the changes that would occur in the department if a merger took place. However, most of the labs were willing to support the merger provided that their questions would be answered, and some of their concerns addressed. In addition, all but one lab expressed an interest in being involved in whatever process would take place if the merger occurs.

While there was no clear consensus about the pros and cons of the merger, a few comments were raised by most labs. The primary concern was regarding the name of the degree offered by the department. None of the graduate students wanted Ocean Engineering to appear on their degree name. However, most labs progressed that this problem can be easily fixed by offering two separate degrees. In addition, some labs were worried that adding another topic to our department would further fracture the culture of the graduate student body. Finally, a few of the labs expressed the feeling that they would not be very affected by the merger, but rather that the biggest changes would occur at the undergraduate level.

Many of the labs agreed that since the Aero/Astro department is focused on systems engineering and already has labs working on very diverse topics, Ocean Engineering would easily fit into the department. The students also felt that a potential benefit of the merger would be an increase in fluids and structures classes offered by the department. They expressed interest in taking those classes even if they included both Ocean and Aero/Astro problems.

Overall the graduate students were happy that the department asked for their opinion and involvement regarding the Ocean Engineering merger. The feelings toward the merger were tentatively positive, but the students expressed a desire for information before they could make a final decision on whether or not they support the merger.

A Hours of One-on-One Advisor time per Month - Per Lab

