



University of Wisconsin-Madison

Department of Statistics

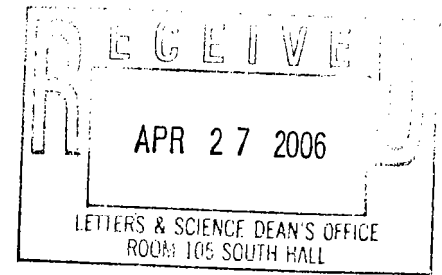
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April 24, 2006



MEMO

To: Dean Gray Sandefur, L&S
From: Jun Shao, Chair, Department of Statistics
Re: **Assessment Report**

The Statistics Department carried out an assessment for its Ph.D., M.S., and BA/BS programs. Enclosed please find an assessment report.

There is an assessment plan of the Statistics Department approved by L&S in 1997. The Statistics Department submitted a report in May 1998. The plan was to submit a report every year. But that never happened. The reason is unknown. As a result, this current document is the Department's second assessment report.

Encl. Assessment Report

**Assessment Report
Department of Statistics
May, 2006**

The Department offers Ph.D., M.S. and BA/BS degrees. The graduate program has a strong national reputation and attracts very talented students. These statements are supported by the first positions of our graduates, as discussed later in this report, as well as by a highly publicized recent report that ranks our department as tied (with UNC-Chapel Hill) for fourth best statistics program in the US. The BA/BS program is quite small, as it has been since its inception. This reflects the national situation—Statistics is not a very popular undergraduate major anywhere, to our knowledge.

The Ph.D. Program

There are two components to this section of our report.

1. The first positions of our calendar year 2005 Ph.D. graduates.
2. The findings from our exit survey of our calendar year 2005 Ph.D. graduates.

First positions. Seven of our 11 Ph.D. recipients accepted positions as statisticians in a health related field—six at pharmaceutical companies and one in the UW medical school. Of the remaining four, one is a lecturer at UW-Madison, one has a tenure track appointment at Emory University, one is a post-doc fellow and one is working for a major company in finance.

These data support our belief that we are preparing our Ph.D. students to obtain important and good jobs.

Exit survey of 2005 graduates. Upon finishing the Ph.D. and prior to physically leaving the Department, each student is invited to complete a short exit survey; most participate. (A copy of the survey is attached to this report.)

In view of their success in finding positions, it is not surprising to find that the Ph.D. students are very happy with their educational experiences in the Department. Below is a compilation of suggestions the graduates made.

- The Department should offer more graduate courses.
- The Department should provide larger and better quality office space.
- The Department should provide better public computing facilities.
- The amount of financial support is much too low.

Regarding the last item, the Department has been frustrated by this issue for several years. Every year, nearly all of the very top applicants to our program, both domestic and international, reject our offer of admission and financial support, largely because the financial support falls far short of what other schools offer.

The M.S. Program

There are two components to this section of our report.

1. The first positions of our calendar year 2005 M.S. graduates.
2. The findings from our exit survey of our calendar year 2005 M.S. graduates.

First positions. Twenty-two persons received the M.S. in 2005. Thirteen continued their studies in our Ph.D. program; five continued their studies in some other Ph.D. program on campus; one took a full-time job as a statistician; one accepted an NIH internship; and one left without telling us his plans. Finally, one moved to Chapel Hill, NC, because her husband is starting a Ph.D. program in Statistics at UNC; the last we heard she was pursuing employment or educational opportunities in the area.

Exit survey of 2005 graduates. Only five of the M.S. graduates completed an exit survey. (We use the same survey for M.S. and Ph.D. students.) This nonparticipation seems to be linked to the fact that 59% of our M.S. graduates continued in our Ph.D. program and another 23% continued in some other Ph.D. program. The five completed surveys revealed a high level of satisfaction with the program, but did reveal some heartfelt concerns.

There is some concern that our M.S. program is too mathematical. In addition, some feel that our seminars and colloquia focus too much on research and rarely consider consulting, the perceived main activity of an M.S. trained statistician.

The BA/BS Program

Before discussing our assessment efforts, it will be useful to provide a brief overview of our undergraduate major.

The BA/BS requires six courses in Statistics, one in computer sciences and either five, for Option 1, or three, for Option 2, courses in mathematics—Option 2 also requires four courses in a related field of study. Thus, for either option, one-half or fewer of the required courses are actually in Statistics. Also, the completion of only six undergraduate courses typically does not provide sufficient training for qualification for employment as a statistician. Thus, we don't view the BA/BS program as preparation for a position as a statistician.

This naturally raises the question: Why do we have an undergraduate major? First, the existence of the major costs the university no money. Our majors comprise a small minority of the students in their Statistics courses; i.e. the justification for offering each of these courses is that it attracts a large number of undergraduate and graduate students from other departments and programs. As discussed below, a large majority of our majors have another major, often their primary area of interest. Thus, we infer that completing a Statistics major is viewed as an important addition to one's educational credentials. Finally, along with the Departments of Computer Sciences and Mathematics, Statistics provides an option as a major for persons who are interested in 'mathematical sciences.'

Thirteen students completed the BA/BS in Statistics in 2005. Of these 13, ten had a second major and one of these ten had a third major: four in mathematics; two in actuarial science; one each in communication arts, Spanish and economics; and the triple major including biology and zoology.

We now turn to the following two items.

1. The first positions of our calendar year 2005 BA/BS graduates.
2. The findings from our exit survey of our calendar year 2006 BA/BS graduates.

First positions. The student with a major in communication arts accepted a job in business; one is in the graduate program in population health on campus; one is in an unknown graduate program; and one (a December graduate) will enter a yet-to-be-determined graduate program in the fall. The situations of the other nine graduates are unknown.

Clearly, in the future we need to do a better job of tracking what happens to our undergraduate majors.

Exit survey of expected 2006 graduates. We did not survey our 2005 undergraduate majors. Thus, we decided it was important to obtain some information from our current majors now and not wait until 2007 to report our findings.

The seven students surveyed had some suggestions on how to improve our program. We have created a detailed report on these comments and circulated it to our faculty for consideration. Appended to this assessment report is a compilation of responses to the questions on the survey.

Overall, the students are very happy with the program. The main concerns are that we don't offer enough courses and that we require all students to complete Computer Sciences 302. In summary, the major provides a valued option to students at no cost to the university.

Appendix: 2006 Survey of Undergraduate Majors

Below is a compilation of responses from six students who plan to graduate with a BA/BS in Statistics in 2006 and one student who graduated with a BS in Statistics in December, 2005.

1. Do you have another major? If yes, go to question 2. If no, go to question 3.

Responses: Yes-5; No-2.

2. What is your other major?

Responses: One each of: anthropology, computer sciences, economics, mathematics and psychology.

Why did you choose to complete more than one major? Do you view both majors equally or is one of them more important to you?

Responses:

Anthropology major: I chose majors based on my interests. I view both majors equally. I believe in studying out of interest of gaining knowledge and not just in the hope of getting a job that pays a lot of money.

Computer Science major: I have always been interested in Statistics and it was easy to have it as a second major.

Economics major: Both of my majors are important, though at first I thought that a Statistics major is going to help my Economics major, but it turns out that I like Statistics better than Economics.

Math major: The classes were interesting in both majors. I chose a Math major to satisfy my interests and Statistics to prepare for the future (career and graduate school).

Psychology major: I'll have a choice of majors for graduate school. They're both interesting.

3. What are your plans for after graduation? How definite are they? To what extent has your major in Statistics prepared you for these plans?

Responses:

Anthropology major: No response. (Perhaps because he is not graduating until December.)

Computer Science major: Ph.D. program in Computer Science at Virginia Tech.

Economics major: [To] become an analyst in business area. I am pretty sure about this though I am still seeking for job currently.

Math major: Either study Statistics in graduate school (if not right after graduation, at one point) or find a full time job hopefully related to Statistics. Statistics major gave me some narrower options (which is good) for future plan.

Psychology major: I'm thinking about grad school at the moment, but nothing is set in stone.

Stat only (No. 1): No definite plans, but looking for a full time job. I think my choice of a major has done well to prepare me for life after college by allowing me to think analytically and work independently.

Stat only (No. 2): I have a job as an actuarial analyst at a consulting firm in Chicago. My major in Statistics is the sole reason I have this job. I was the only one interviewing for actuarial jobs that wasn't an actuarial science major and it made me stand apart. I was told that is why I got some of my interviews. I feel very prepared for it.

4. We asked a number of questions about our requirements and our courses. The following question is the only one that generated strong opinions. (The Statistics faculty will revisit this issue.)

We require Computer Sciences 302. Do you think it should be required?

Responses:

Anthropology major: I don't think it should be required. I think you can still graduate with a Statistics degree without knowing Java programming.

Computer Science major: Definitely.

Economics major: I think it is quite irrelevant to stat major. though it is a fun course . . . it is extremely hard.

Math major: Yes! . . . taking CS302 was really helpful studying statistics using computer softwares.

Psychology major: 302 is a good class to take for people like myself who haven't had previous programming experience, and it would help to understand basic programming concepts. With that said, I don't see how it directly helped me for my stats work so far.

Stat only (1): CS 302 should not be required as it does not relate to statistics and the programming learned for R, SAS, MINITAB etc. does not carry over to what is learned in 302.

Stat only (2): I DO NOT think that this class should be required for the major. It was absolutely my LEAST favorite class at this university. I actually thought about switching majors in the middle of that class. I also don't think that it contributed significantly to my understanding of any statistical software programs.

5. Did you find your advising to be helpful? Informative? Accurate?

Responses:

Anthropology major: I find my advisor to be useful.

Computer Sciences major: Very helpful. . . . has made it easy for me to do the double major and he is very very informative.

Economics major: Yes, definitely.

Math major: Yes, gave me a clear idea of possible future plans as a statistics major.

Psychology major: Yes, helpful.

Stat only (1): Informative and friendly.

Stat only (2): Yes, I thought that . . . did a wonderful job as my advisor and really tried to tell me what classes would be best for me. He also gave a nice overview of every class, the teacher, and what is expected. That was very helpful in deciding what classes to take.

Survey of Graduate Degree Recipients in Statistics

Please answer the following questions and return this form to Jude Grudzina in Rm 4352 CSSC. If you need more space, please submit additional pages. Thanks, in advance, for your participation in this important activity.

1. Graduation date (circle one):

May

August

December

2. Degree (circle one)

PhD

MS

3. Briefly describe your plans for your first three years after graduation.

4. What are your career goals for seven years from now?

5. Discuss the graduate program. What are its strengths and weaknesses? How can we improve the program? Have we served your educational needs?