GRADUATE AND POST-GRADUATE INTERVIEWS AND SURVEYS:

Three students completed the M.S. degree in statistics during this academic year. Exit surveys were completed by each student, and the responses are attached in the appendix (names withheld). Students were very positive about their education and experience in the M.S. program. In particular, students reported that R.A. positions were extremely helpful in acquiring practical work experience and preparing them for jobs. Students also commented on the restrictive scheduling of classes by the department, and suggested offering certain courses more often, although they did acknowledge that scheduling of classes is largely a function of the small size of the department.

Over the past five years, the department has graduated 16 students from the M.S. program. Upon graduation, three of these students went on to pursue Ph.D. degrees in statistics (one at University of Nebraska and two at University of Iowa), three accepted biometrician positions with a government agency (two with Alaska Department of Fish and Game and one with the U.S. Fish and Wildlife service), five accepted university research positions involving statistics or data analysis (four at UAF and one at University of Oregon), one accepted an industry position involving statistics or data analysis (BP), and four pursued positions or interests in other fields having little or no statistical component. Thus, 75% of graduates in the last five years either sought an advanced degree in statistics or were immediately employed in statistics-related positions. Moreover, eight of the nine graduates who accepted positions are working in Alaska.

FACULTY EVALUATION OF EXAMS AND PROJECTS:

Two of this year’s graduates took the comprehensive exam in 2011 (the other completed his in 2010). Both students passed the exam. One student did excellently on both the written and oral portions of the exam. The other student performed less well, but still satisfactorily, on the written exam. He was able to demonstrate much better knowledge of the exam topics in the oral portion.

All three students did excellent work on their M.S. projects, and gave outstanding presentations of their research and results. Project titles appear below.

Matthew Leonawicz: A Gradient Boosting Model of Interior Alaska Summer Precipitation

Jason Waite: 3D Spatial Modeling of Oceanographic Temperatures in the Northern Kuril Basin Using Animal-Borne Sensors

Adam Watson: Using Financial Aid Support to Model Probability of Student Success, Incorporating a Comparison of Predictive Accuracy of Logistic Regression and Gradient Boosting
STATISTICAL CONSULTING:

All graduates successfully participated in statistical consulting activities. Students completed the consulting seminar (STAT 654), in which they provided statistical advice to graduate students and researchers with questions. In addition, two of this year’s graduates worked as R.A.’s, gaining additional consulting experience.

GRADUATE CERTIFICATE PROGRAM:

One student completed the requirements for and earned the new graduate certificate in statistics in 2011. At this time, a number of students have expressed interest in the certificate, but none are officially seeking it.

TIME TO COMPLETION:

Two of this year’s graduates completed their degrees in the expected two years. One required an additional semester to finish his research project, largely due to the fact that he was working on his biology Ph.D. concurrently. Two students entered the program in fall of 2010. One of these students left after the first year due to the fact that her spouse took a job in Taiwan. The second is on track to graduate within the expected two years.

In the last five years, 10 of the 16 graduates completed their degree in two years. The remaining six took one additional semester (five of these completed their requirements during the summer).

CURRICULUM AND COURSES:

We have continued to deliver courses via distance delivery, depending on student demand and room availability. In the 2010-2011 academic year, STAT 641 Bayesian Statistics was taught via distance delivery with students at three remote locations in addition to those in Fairbanks.

Other courses continue to be updated or redesigned. STAT 401, Regression and Analysis of Variance, is now being taught primarily with the software R, instead of SAS. R has probably become more widely-used than SAS among professionals, and so may be a better skill for students to acquire. In addition it’s free so students have easy access to the program. Student response to this change has been very positive. Discussions will continue the coming semester concerning a change of the STAT 200 Introductory Statistics textbook. We are looking for an option that is more accessible to students both in terms of price and content, and has more available online resources (e.g., Web Assign).
APPENDIX ONE: EXIT SURVEY RESPONSES FROM 2011 GRADUATES

UAF Statistics MS Program Graduate Survey Spring 2011

1. Please respond to each of the following statements with
1 = strongly agree 2 = agree 3 = neutral 4 = disagree 5 = strongly disagree
Please feel free to write comments on any of these questions.

a) I would recommend the statistics MS degree program to others. _______1
b) The quality of instruction by statistics faculty is excellent. _______2
c) The core MS statistics courses (STAT 651, 652, 653) provided a solid foundation.2
d) I had access to modern computing equipment and statistics software. _______1
e) Statistics faculty members were accessible and involved in my education. _______1
f) I learned a lot in completing the MS project. _______1
g) Sufficient elective courses were offered. _____3 (but I know it’s a small
department and there aren’t a lot of students either)
h) Statistics elective courses were at an appropriately challenging level. _____3
(interestingly, I found that electives, usually if popular among non-stat majors,
were unjustifiably easy. Not that I couldn’t use an easy class in my schedule, but
sometimes I felt like I wasn’t learning nearly enough to walk away with anything
very useful. And on the other hand, some electives were made surprisingly and
needlessly challenging to the point of non-majors dropping the class and the class
becoming too academic and mathematical so as to still not really be able to walk
away with a suite of practical skills. I think it depends on lot of the instructor,
even if the type of class itself partially determines the difficulty level.)
i) Degree requirements were well communicated. _______1

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2. Please provide a narrative response to each of the following:

a) How should the statistics MS program be changed to improve it?

Expectations of students vary widely across professors. This can be a bit frustrating
when there are only a few instructors and yet the amount of effort required to earn a
grade can range from next to nothing to virtually everything I’ve got. Each instructor
takes their own approach and has their own expectations and that is fine, in fact a
good thing. But the extent of this variation is surprising for such a small department
and it gives the impression that the faculty don’t get together and "compare notes,"
opening the possibility for each professor to have little or no idea how little or how hard their coworkers push students when covering similar material. I think things could be standardized a bit more in this regard. Not sure how. I’m just kind of speculating. I doubt this is really a helpful narrative.

b) What components of the statistics MS program worked particularly well?

Being given a real job. I was as unwilling to do the program with a TA position as I was unwilling to do it without funding at all. If a real RA position had not been available for the duration of the program, for which I could get real job experience, I would absolutely not have done the program.

Incidentally, 99% of the applied statistical skills, techniques, procedures, methods, the R programming skills, how to deal with the messiness of real data and challenges of real problems, all came from my time at my RA position. Disappointingly, though understandably, even the applied elective courses were not really directly relevant and applicable to real problems, the exercises tending to be convenient text-book problems. This is all important for many pedagogical reasons and not without its value. But in the end, it really was the job where I learned how to do 99% of the, well, amazing things I can do now. I think in the future it is important to be able to offer a real RA position to every student that is accepted, right from the first semester. Unless they are truly interested in remaining in academia, teaching, getting their PhD, or whatever, do not do them the disservice of having them TA a math or stat class. If they want to be able to get some real experience before leaving school and they want a good chance at getting a decent job afterward, they really should have an RA position. For the good of the students, the professors will just have to run labs and grade homeworks themselves. It’s unfortunate, but I feel that’s partly the nature of this kind of program. It’s not going to be in most students best interests to be a TA.

The theory courses are really important. Several students have complained at times, "why is there so much theory in an applied stat program?" (I don’t even know if that is true or not, but I know we’ve all had the impression this program is intended to have an applied, practical, job-oriented slant to it, as opposed to just prepping us for PhD school). But the reason it is so important is that no matter how many applied electives we can squeeze in, learning how to do everything we’ll ever need to know how to do is simply not even close to possible. It is the theory courses which give us the ability to teach ourselves and understand new material as needed outside of school. I wish we’d had more theory. But we did have enough of it to reach a self-sustaining point where I can now continue to acquire it on my own.
UAF Statistics MS Program Graduate Survey Spring 2011

1. Please respond to each of the following statements with
1 = strongly agree 2 = agree 3 = neutral 4 = disagree 5 = strongly disagree
Please feel free to write comments on any of these questions.

a) I would recommend the statistics MS degree program to others. ___1____
b) The quality of instruction by statistics faculty is excellent. ___1____
c) The core MS statistics courses (STAT 651, 652, 653) provided a solid foundation. _2_
d) I had access to modern computing equipment and statistics software. ___2____
e) Statistics faculty members were accessible and involved in my education. ___1____
f) I learned a lot in completing the MS project. ___2____
g) Sufficient elective courses were offered. ___2____
h) Statistics elective courses were at an appropriately challenging level. ___1____
i) Degree requirements were well communicated. ___1____

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2. Please provide a narrative response to each of the following:

a) How should the statistics MS program be changed to improve it?
The timing of certain courses (i.e., some courses offered only every 2 years, etc) made scheduling a challenge. However, this is probably due to my specific situation (I entered the program after having completed most of the elective requirements, so my scheduling was a bit different than it may have been for students who started from scratch). I also understand that this is likely due to the program size, both in terms of students and faculty numbers. I also feel that some of the electives could have been offered as multiple courses, as many of the topics were only touched upon when multiple weeks would have been useful (e.g., Introductory {insert elective here} and Advanced {insert elective here}). Again, perhaps this is a result of the generally small program size.

b) What components of the statistics MS program worked particularly well?
The small size of the program was actually beneficial in a number of ways. It allows the students to work closely together, as many of them were taking the same courses at the same time. The rotation (?) of the faculty members through the various courses was also very useful. Although there were certain professors with obvious specialties (which was great!), it seemed that most of the professors had some degree of exposure to most of the other courses offered, partially through having taught the course at some point in time.
UAF Statistics MS Program Graduate Survey Spring 2011

1. Please respond to each of the following statements with

1 = strongly agree 2 = agree 3 = neutral 4 = disagree 5 = strongly disagree

Please feel free to write comments on any of these questions.

a) I would recommend the statistics MS degree program to others. ____1__

b) The quality of instruction by statistics faculty is excellent. ____1__

c) The core MS statistics courses (STAT 651, 652, 653) provided a solid foundation. __1__

Students have talked about the desire for a more practical foundation, in addition, but also concluded that the program prepared us to teach that to ourselves.

d) I had access to modern computing equipment and statistics software. ____1__

Being barred from the computer lab on the first floor of Chapman was annoying, especially after having had stat labs there in the past. But I did everything on my own or work computers anyway, so it didn’t really affect me.

e) Statistics faculty members were accessible and involved in my education. ____1__

f) I learned a lot in completing the MS project. ____1__

g) Sufficient elective courses were offered. ____1__

h) Statistics elective courses were at an appropriately challenging level. ____1__

i) Degree requirements were well communicated. ____1__

-----------------------------------------------------------------

2. Please provide a narrative response to each of the following:

a) How should the statistics MS program be changed to improve it?

   i) Theory classes, in order (!!), semesters 1, 2 and 3. Focus on project and comps, semester 4.
   ii) Instructors who aren’t Ron Barry should wear fake beards while lecturing.

b) What components of the statistics MS program worked particularly well?

The consulting seminar was, for the most part, a good behavioral modeling exercise for students, demonstrating ways to deal with a variety of confused and/or confusing investigators.

I should add that the amount of effort you guys put into placing students in RAs is fantastic. It really made the difference, especially when I compare it to the kind of "support" I got in the Biology department.
APPENDIX TWO: LIST OF GRADUATES

1998: Gordon Bower, Pam McNeley, Alex Prichard, Bob Sutherland, Brian Taras
1999: Arny Blanchard, Peter Dillingham, Julie McIntyre, Franz Mueter
2000: Gwen Gruenig
2001: Kelley Cadman, Xinxian Zhang
2002: Helen Nute
2003: Anton Antonovich, Colleen Ianuzzi, Randy Mullen
2004: Sherri Dressel, Xiang Fang, Joseph Liddle, Mark Olson, Yongmei Qin
2005: Randolph Phillips
2006: Xi Chen
2007: Shuo Jiao, Yingte Zhang
2008 [Summer 2007]: Kun Chen, Steve Houston, Alan Shay, Xian Yu
2008: John Bannister, Jim Jasper, Jennifer Kreinheder
2009: Jiaqi Huang, Hui Liu
2010: Anna-Marie Benson, Lisa Beattie, Luosha Diou, Feiran Jiou
2011: Matthew Leonawicz, Jason Waite, Adam Watson