

**Program Review Report
For
MS in Statistics
2005-06**

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3. Student projects must be written in a scientific journal format. This recently implemented requirement has resulted in one student publishing a paper and another submitted. Both papers were coauthored with faculty members. It is very uncommon for MS students in statistics to publish papers so we view our recent success as a good indication of project quality.

4. The MS program requires four core courses and a selection of electives. Many of the elective courses commonly have a majority of non statistics graduate students enrolled. This is the case, for example, in categorical statistics, spatial statistics, time series, and environmental design. Thus, the statistics graduate program is relatively uncompetitive in

terms of required courses only utilized by our majors. Furthermore, other programs, such as fisheries and wildlife engineering, have some of their students take statistics

Needs

We need to recruit and retain well qualified statistics faculty.

An organized sustained student recruiting effort is needed. Students hear of the statistics

MS program by word of mouth or find it on the web. This program has the capacity for additional students. Thus we should grow this program. There are two limiting factors

for growth in student numbers; 1) space for graduate students and 2) research or teaching assistantships. We have had great success in finding RA funding for previous students.

To better balance course loads among semesters we changed the offering frequency of

Because only Biology and Wildlife faculty members had taught, STAT 680, Data Analysis in Biology, which was cross listed with BIO 680 and WLF 680, we dropped STAT 680 in conjunction with the Biology and Wildlife faculty effective fall 2004

Appendix 1 – List of MS Statistics Graduates by Year

1998

- Bob Sutherland works as a Biometrician for the Alaska Department of Fish and Game in Anchorage, AK
- Brian Taras, works as a Biometrician for the Alaska Department of Fish and Game in Fairbanks, AK
- Pam McNeley, unknown
- Alex Richard is employed as a Biometrician at Alaska Biological Research in

Fairbanks, AK

- Gordon Bower worked at the Geophysical Institute, UAF and then took a job in Juneau.

1999

- Amy Blanchard is employed as marine ecologist and environmental statistician at

2003

~~Reed Muller is employed as a Biometician for the Alaska Department of Fish~~

and Game in Juneau, AK.

- Colleen Ianuzzi works for Institutional Research at the University of Alaska Statewide Office in Fairbanks, AK.

~~Anton Antonovich is employed as a Biometician for the Alaska Department of~~

Fish and Game, Anchorage, AK

- Xiang Fang worked for the Water and Environmental Research Center Institute of Northern Engineering and UAF's Institutional Research for two years then in 2005 went to University of Nebraska for a Ph.D in Statistics

~~Shawni Drossel completed a Ph.D in Fisheries at UAF and now works as a~~

Appendix 2 – MS Statistics Outcomes Assessment Plan (Revised, Nov. 2003):

statistical theory and methods

Goal: To assure that our students have the skills to successfully compete for and excel in jobs in applied statistics. Our students will be highly qualified, in particular, as biostatisticians for

Written and oral part of
the comprehensive exam.

statistics faculty, oral
assessed by graduate

Follow the careers of graduates. Survey graduates to see if curriculum was satisfactory.

continually maintained by the statistics program coordinator.

APPENDIX 3 – 2005 Outcomes Assessment Summary

MEMORANDUM

To: Susan Henrichs
Dean of the Graduate School and Vice Provost for Instructional Affairs

From: Dana Thomas (Department Chair)
Ron Barry (Program Coordinator)
Department of Mathematics and Statistics

SUBJECT: Progress Report on the MS Program in Statistics

Attached is an assessment plan on MS Program in Statistics. Also attached are the 2004

| | |
|--|---|
| <p>programming skills in applied and core statistics courses</p> <p>2) Applied statistics portion of the comprehensive exam</p> <p>3) Report by the student's advisor on student's research and consulting outside of class.</p> <p>4) Student Project review</p> <p>5) Student's achievement in the statistical consulting seminar</p> <p>6) Written and oral part of the comprehensive exam.</p> <p>7) Report by the student's advisor</p> | <p>3) YES</p> <p>4) YES</p> <p>5) NO, except for grades.</p> <p>6) YES</p> <p>7) NO</p> |
|--|---|

ASSESSMENT OF THE MASTERS PROGRAM IN STATISTICS
Fall 2005

EXIT INTERVIEW:

We gave the College of Science, Engineering and Mathematics Exit Interview for

valuable. Our students have generally been successful in obtaining jobs in statistics, with seven of nine 2003, 2004 and 2005 graduates in statistical positions (I do not know that employment status of the other two graduates). Our program was originally instigated to help supply biostatisticians for the State and Federal government in Alaska, and it has continued to fill that role, with four of the nine recent graduates taking positions as biometricians with the Alaska Department of Fish and Game. In fact, about a third of all

of the students to ever graduate from the MS program in Statistics have biometrician positions in the Alaska Department of Fish and Game. One of our graduates has

completed a PhD in Statistics. This student thought that the MS program was a good preparation for doctoral study.

EMPLOYER INTERVIEW:

We have regular conversations with managers with hiring authority in the Alaska Department of Fish and Game. They stated that they are happy with the program as designed and with the graduates of the program.

FACULTY EVALUATION OF EXAMS AND PROJECTS:

The Program Coordinator of the Statistics Program evaluated the comprehensive exams of graduates in the 2003-2004 (5 exams) and 2004-2005 (exams) school years.

1. As recommended in the previous assessment, we have been very active in encouraging our students to get their deficiencies out of the way as soon as possible. We have also used our experiences to improve courses and the timing of courses. Along with the high quality of students now entering the program, these factors may lead to improvement in the quality of the students' comprehensive exams. As part of assessment we read the

virtually finished at the beginning of their last summer. Time to completion has been good.

ADDITIONAL ASSESSMENT:

that the advisory board be dropped from the assessment. Formalizing the employer interview should suffice to give us the same information, as university Institutional

APPENDIX 4 – 2003 Outcomes Assessment Report

MEMORANDUM

To: Susan Henrichs
Dean of the Graduate School and Vice Provost for Instructional Affairs

From: Dana Thomas (Department Chair)
Ron Barry (Program Coordinator)
Shunpu Zhang
Devin Johnson
Department of Mathematics, University of Georgia

DATE: October 03, 2003

SUBJECT: Progress Report on the MS Program in Statistics

Attached is our assessment plan on MS Program in Statistics. Also attached are the 2002

2003-assessment report on the MS Program in Statistics and a feedback email from a recent graduate of the MS Program in Statistics. The assessment report summarizes comments from other graduates contacted by phone and/or email.

Here is a list of the items in our assessment plan and the status of implementation.

student's research and consulting
outside of class.

**ASSESSMENT OF THE MASTERS PROGRAM IN STATISTICS
Summer 2003**

EXIT INTERVIEW:

We gave the College of Science, Engineering and Mathematics Exit Interview for Graduating Masters and Ph.D. Students to five students who had completed their degree program in the Spring of 2003. The results are in the Table 1 (appendix). The graduate student's opinion of the program was quite high, with all students either agreeing or

strongly agreeing with "I would enthusiastically recommend my degree program to another student", "I learned a lot at UAF", "I feel prepared for the next step in my professional life", "The quality of instruction in my department is high" (all students

FACULTY EVALUATION OF EXAMS AND PROJECTS:

The faculty of the Statistics Program, Dept. of Mathematical Sciences, met in September 2003 to discuss the quality of graduate projects and comprehensive exams written to that point.

- 1 Exams were variable in quality, with the lowest scores going to graduate students who

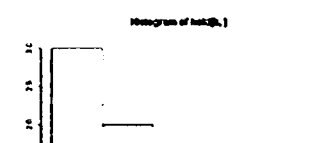
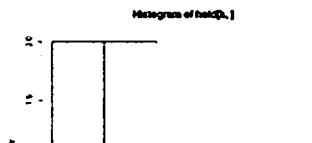
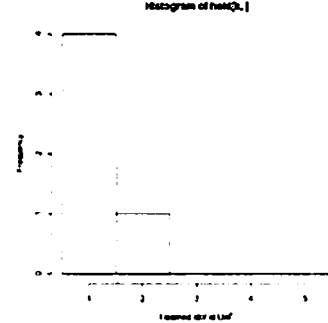
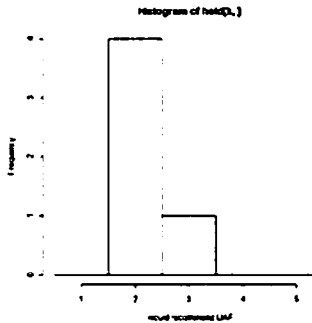
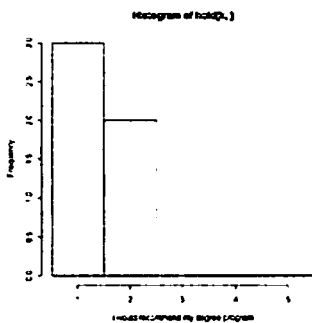
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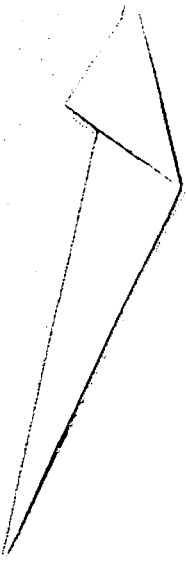
1=strongly agree 2=agree 3=neutral 4=disagree 5=strongly agree

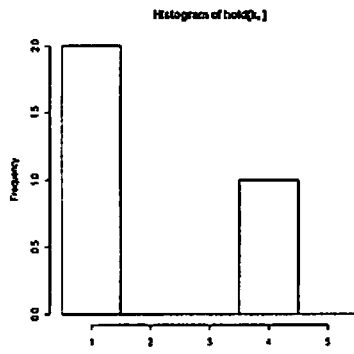
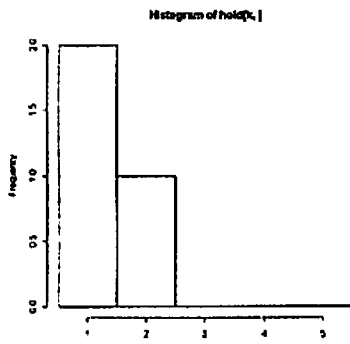
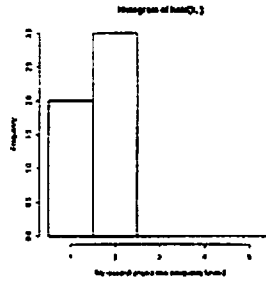
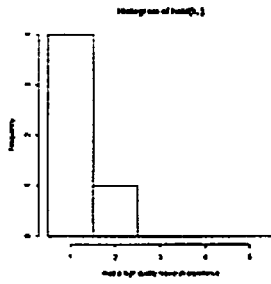
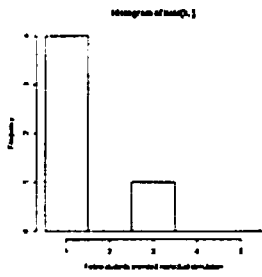
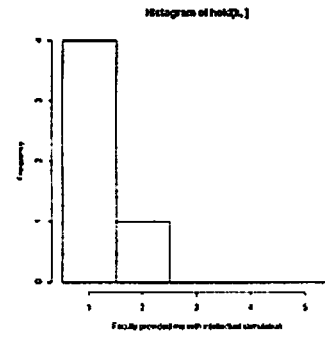
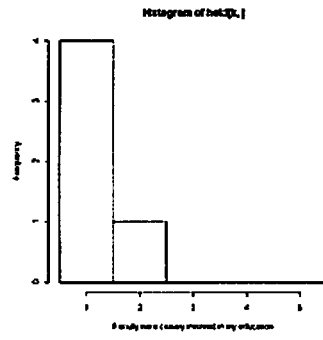
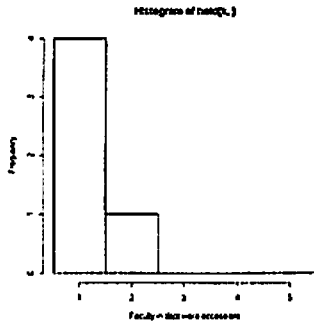
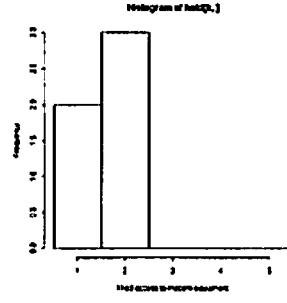
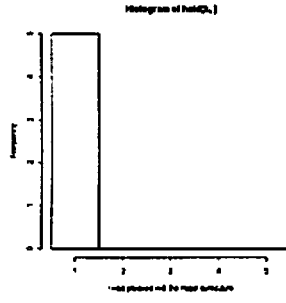
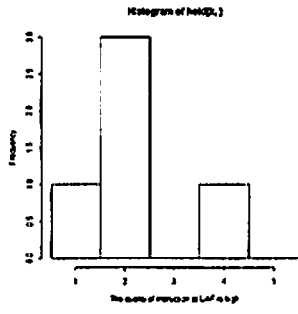
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|-------------------------------------|---|---|---|---|---|
| I would recommend my degree program | 1 | 2 | 2 | 1 | 1 |
| I would recommend UAF | 2 | 2 | 2 | 3 | 2 |
| I learned alot at UAF | 2 | 1 | 1 | 1 | 1 |

| | | | | | |
|---|---|---|---|---|---|
| I enjoyed myself | 2 | 2 | 3 | 1 | 1 |
| I feel prepared for the next step in prof life | 2 | 1 | 1 | 2 | 1 |
| The quality of instruction in dept is high | 1 | 1 | 1 | 1 | 1 |
| The quality of instruction at UAF is high | 2 | 2 | 1 | 4 | 2 |
| I was pleased with the major curriculum | 1 | 1 | 1 | 1 | 1 |
| I had access to modern equipment | 1 | 2 | 1 | 2 | 2 |
| Faculty in dept were accessible | 2 | 1 | 1 | 1 | 1 |
| Faculty were closely involved in my education | 1 | 1 | 1 | 2 | 1 |
| Faculty provided me with intellectual stimulation | 1 | 1 | 1 | 2 | 1 |
| Fellow students provided intellectual stimulation | 1 | 1 | 1 | 3 | 1 |
| I had a high quality research experience | 1 | 1 | 1 | 1 | 2 |

| | | | | | |
|---|---|----|----|---|---|
| I was well informed of my duties | 2 | NA | NA | 1 | 1 |
| The amount of assigned work was appropriate | 1 | NA | NA | 4 | 1 |







E-mail from Julie McIntyre (Smith) giving feedback on MS program in Statistics: March

Julie:

Thanks for the note. You were a great candidate for the position here so I am sorry to see you take another

job. However, I think a position at Carnegie Mellon will be great for your career and look forward to your application here when we have another opening. I certainly wish you the best for your position there.

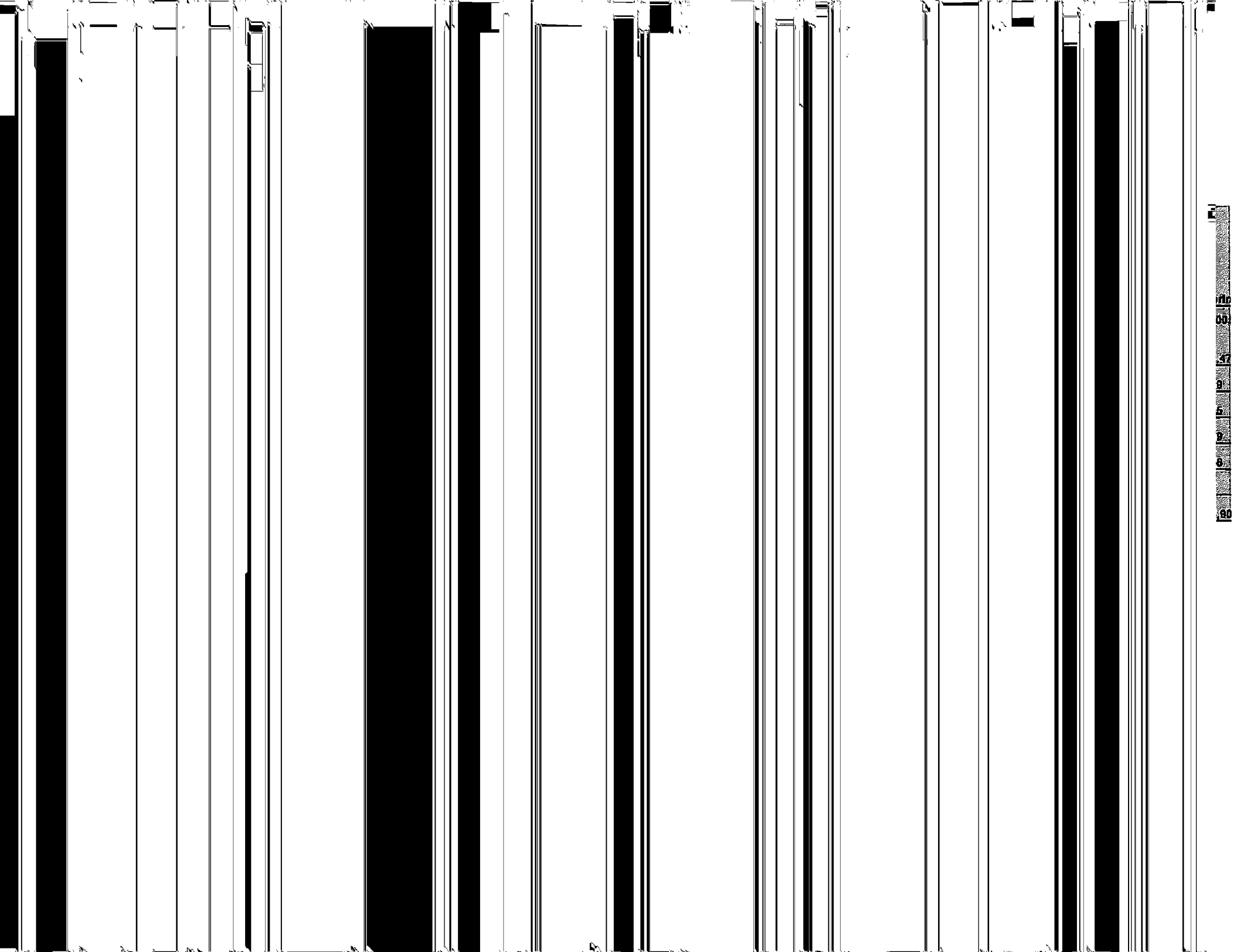
Thank you also for the information on the two other books. I am familiar with and have Bickel and

nt of Majors By Year

w 2005-

ice and

| | | Fiscal Year 2001 | | | Fiscal Year 2002 | | | Fiscal Year 2003 | | | Fiscal Year 2004 | | | Fiscal Year 2005 | | |
|-------------------|-----|------------------|-----------|-------------|------------------|-----------|-------------|------------------|-----------|-------------|------------------|-----------|-------------|------------------|-----------|-------------|
| | | Fall | Spring | Fiscal Year | Fall | Spring | Fiscal Year | Fall | Spring | Fiscal Year | Fall | Spring | Fiscal Year | Fall | Spring | Fiscal Year |
| Degree | | 2000 | 2001 | 2001 | 2001 | 2002 | 2002 | 2002 | 2003 | 2003 | 2003 | 2004 | 2004 | 2004 | 2005 | 2005 |
| atics | BA | 5 | 8 | 6 | 7 | 7 | 9 | 4 | 5 | 6 | 9 | 5 | 9 | 5 | 7 | 7 |
| | BS | 25 | 24 | 36 | 26 | 35 | 36 | 39 | 38 | 45 | 33 | 34 | 41 | 37 | 30 | 42 |
| | MS | 4 | 8 | 6 | 8 | 7 | 8 | 6 | 3 | 8 | 2 | 1 | 4 | 5 | 5 | 6 |
| | PHD | 1 | | 1 | | | | 1 | 2 | 2 | 4 | 5 | 5 | 6 | 6 | 6 |
| s | BS | 2 | 2 | 2 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | MS | | | | 4 | 6 | 7 | 9 | 9 | 10 | 4 | 5 | 8 | 4 | 5 | 5 |
| r - atics | BI | | | | | | | | | | | | | 2 | 2 | 3 |
| r - Statistics | BI | | | | | | | | | | 1 | 1 | 1 | 1 | 1 | 1 |
| Total | | 37 | 36 | 49 | 44 | 55 | 61 | 60 | 58 | 72 | 53 | 52 | 69 | 58 | 51 | 69 |



18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

Appendix 7 – Degrees Awarded By Year

UAF Program Review 2005-06 College of Natural Science and Mathematics *Degrees Awarded*

| Department | Degree | Major_Description | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|----------------------------------|--------|-------------------|------|------|------|------|------|------|------|
| CNSM Mathematical Sciences | BA | Mathematics | | | 1 | | 1 | 1 | 2 |
| | BS | Mathematics | 5 | 8 | 8 | 3 | 9 | 10 | 8 |
| | | Statistics | 1 | 1 | 1 | 1 | 1 | 1 | |
| | MS | Mathematics | 1 | | | | 4 | 1 | 2 |
| | | Statistics | | | | 1 | 3 | 5 | 1 |
| CNSM Mathematical Sciences Total | | | 7 | 9 | 10 | 5 | 18 | 18 | 13 |

Year

Enrollment (sections; J = Juneau) by semester 2000-2005

| Spring 2002 | Fall 2002 | Spring 2003 | Fall 2003 | Spring 2004 | Fall 2004 | Spring 2005 | Fall 2005 |
|----------------|--------------|----------------|--------------|----------------|--------------|----------------|--------------|
| 114(2) | 104(2) | 124(2) | 125(2) | 123(2) | 104(2) | 123(2) | 106(2) |
| 46 | | 41 | | 47 | | 44 | 31 |
| 19 | 34 | 27 | 19 | 36 | 31 | 28 | 27 |
| | 28 | | 20 | | 16 | | 15 |
| 12 | | | | 7 | | | |
| 10 | | | | | | | |
| | 9 | | | | 11 | | |
| 13 | | | | 11 | | | |
| | | 13 | | | | 12 | |
| 2 | | | | 4 | | | |
| | | | 11 | | | | 8 |
| | 6 | | 6 | | 7 | | 6 |
| | | 7 | | | | 6 | |
| 9 | | | | 8 | | | |
| | | 7 | | 1 | | 1 | |
| | | | | | | | 10(J) |