TO: Jennifer Davis, Dean – Graduate School
FROM: Statistics Department Faculty
DATE: June 13, 2016

In December 2015, a ten-year review was conducted for the Graduate Program in the Statistics Department at Oregon State University. This document is the action plan specifying how the Program will address each of the Review Panel’s recommendations to improve program quality.

Overall Recommendation
“The committee recommends for the present to maintain the support for the department to preserve their strengths at the MS and PhD level, but to invest and expand the department of statistics over the longer term, to meet the growing needs for persons trained in Statistics and Data Science, and to meet the growing opportunities for collaborative interdisciplinary research at OSU.”

Response to Recommendation:

Both the COS and CAS Deans are committed to this and are investing in new departmental hires. Recent hires have added breadth to our research interests, resulting in expanded collaborations across the University. In addition, our new online programs will add training opportunities for students interested in data analytics. We have started to see an increase in the number of MS and PhD students graduating from our department and expect this trend to continue.

Summary of Specific Findings and Recommendations

1. “Ecampus funds and summer support tuition should be shared at some proportion (we suggest 50:50) with the department(s) to provide an incentive for department(s) being entrepreneurial. Having this direct proportional resource, based on their success is very important for moral in the departments. This also empowers departmental leadership to seek out opportunities that improves the department’s reputation and stature. These funds could also be used to improve the staff support in the department.”

Response to Recommendation:

Our department is rapidly growing and the absence of additional resources and autonomy could threaten the integrity of our educational offerings. We agree with the external review and hope to work with the COS Dean to restructure the budget model so that faculty have incentives to work on developing online classes and other entrepreneurial activities. Developing a new class is very time
consuming; adding the additional requirements needed for an online class demands much more time than developing an on-campus class. Returning some of the Ecampus and summer tuition funds to the department and faculty members that develop online classes would provide resources to travel to visit research colleagues or purchase new computer equipment. When the online program was discussed a number of years ago, faculty were supportive under the expectation that they would see a share of the revenue which could be used for these purposes. As the external review team pointed out, an incentive does improve morale. These resources would provide us the opportunity to strengthen the delivery of educational content to a growing data-oriented student population and enhance our own research activities, which would benefit our graduate programs.

2. “Additional funds from the VP of research to supplement the operation of the consulting service should be requested. These investments could be tied to joint collaborative research with statistics faculty using the CAS model as the basis for accountability.”

Response to Recommendation:

We agree with the review panel. Currently we consult with 60+ faculty and students per year who are located outside the COS and CAS. Currently one college, CAS, supports our consulting activities. We receive no compensation for this effort from other colleges or from the Research Office. The Department Chair has contacted the Office for Vice President of Research to discuss the extensive consulting we provide for the University community and to request support for the operation of the consulting services.

3. “New faculty hires could be co-funded from other colleges (like the CAS arrangement) to support research collaborations. An alternative model would be joint appointments (with shared budget support), or courtesy appointments (without shared support).”

Response to Recommendation:

We agree with the review panel. Our current collaborations with faculty in the CAS have provided a number of successful research proposals and publications. We aim to build on this collaborative model to work with additional colleges to establish inter-college supported appointments with particular targeting towards the College of Veterinary Medicine, Engineering, and Forestry given our long standing collaboration with these Colleges. We ask the Graduate School Dean to broker the creation of these inter-college supported positions.
4. “Assistance from the dean of CAS was offered in our discussion to provide staff support for grant pre-award. This offer should be accepted to learn how this could be done efficiently. Faculty members could be more efficient in soliciting grant support if the barriers are lowered for the routine aspects of applying for funding. Other universities benefit from having staff dedicated to performing the routine aspects of preparing the grants, such as budget preparation, preparing outreach and facilities statements, and maintaining existing support statements.”

Response to Recommendation:

We agree with the review panel. Liz Etherington and Leah Corma, CAS Sponsored Research Program Representatives attended our faculty meeting to discuss the opportunities they can provide. They generously offered their support to all faculty in pre-award and grant applications.

5. “If the statistics option in mathematics is maintained, then COS should provide resources to develop the new courses needed for the statistics option. This should be an additional faculty member at minimum, to provide additional sections to keep enrollment levels at a reasonable level. In the long term, and more helpful for the statistics profession, would be to have an undergraduate statistics major, rather than a statistics option in mathematics. A statistics major could have two tracks – a graduate studies option, which would have a strong mathematics component (equivalent to the current math major with a statistics option), and an applied option with a minor in another discipline.”

Response to Recommendation:

In the long term, we agree that a statistics or data science undergraduate major would be attractive to students. Presently our focus is on the development of the Data Analytics program. Generation of additional resources into the Department, especially from entrepreneurial revenue streams, is essential to the successful execution of our current objectives, and similar investments are required for a long term expansion of an undergraduate program.

Courses for the statistics option in Mathematics are already taught by the department. However, with the adoption of this option in the Mathematics Department, the class size has been dramatically increasing. We would like to offer extra sections of these classes but would need additional support to do that.

6. “To satisfy the increasing need for high-performance computing, faculty members should apply for time on NSF supercomputers. They should also apply for computer resources in their NSF or other grants (with
computer intensive needs) to potentially contribute to the COS shared compute cluster."

Response to Recommendation:

We are aware of this issue and are increasing the computer power by expanding the cluster currently in our College. We will continue to expand according to our needs.

7. "The committee had considerable discussion about the MS degree without a thesis. Is this essentially a professional degree? Department could investigate identifying more students for entry directly to the PhD program and prioritizing funding for those students. However, given that the department uses the MS program to attract high quality students, they do attract some students who eventually decide to pursue the PhD who may not otherwise attend OSU."

Response to Recommendation:

The MS is not a professional degree. Although most students do not write a thesis, they are required to pass two comprehensive exams and conduct a research project. This project requires the student to prepare a 10 to 15 page paper and present this work to members of the master's committee as part of the final oral exam. Other universities such as NC State University, University of North Carolina, Iowa State University follow this same model for a MS degree without a thesis.

We feel our student support should be split between the MS and PhD students. We are not sacrificing funding for our PhD students since all have full support. We feel strongly that a MS degree has marketable value. We obtain stronger applicants to our MS program since we offer teaching assistantships to some MS applicants.

8. "Opportunities exist for funding joint faculty appointments, which would broaden the base of expertise in the statistics faculty. The review schedule did not afford the chance to meet with faculty in other departments. The review team suggests finding ways to incorporate them into the life of the department, perhaps with occasional colloquia, and focused research groups formed for the purpose of applying for joint grants. These 'adjunct' faculty members may be interested in more interaction."

Response to Recommendation:
See our response to Point 3 regarding joint appointments. All adjunct faculty receive weekly seminar announcements. We propose to sponsor a gathering once a quarter and invite all statisticians and adjunct faculty across campus to meet informally and discuss areas of collaboration. We will encourage these faculty to attend the seminar in the fall where all faculty present a short overview of their research interests.

9. “We heard discussion that the consulting course should be a 3-credit course, given the workload. We feel the department curriculum committee should address this, and decide how much credit it is worth. We also heard that the exposure and experience working on consulting projects was very valuable, and the students derived much benefit from it. To improve the benefit to the research portfolio at OSU, graduate students from other departments should be encouraged to visit the consulting service earlier in their program, so they can get advice at the design stage of their research.”

Response to Recommendation:

We will consult with students and faculty members to investigate expanding this to a 3 credit course and developing strategies for incorporating clients earlier in their project. This course is also in transition since the faculty member supervising this course recently retired.

10. “Math should provide a one-quarter measure theory course for the stat department. We heard that the regular measure theory sequence taught by the math department, aimed at the math majors, has been quite variable in how it is taught, and not a reliable course for the Statistics graduate students. A one-quarter course, designed for Statistics majors, probably taught by one of the probabilists in the Math department would be more appropriate.”

Response to Recommendation:

The Math Department recognizes that this is an issue. We are under discussion with the department to modify course structure.

11. “Students don’t all have adequate computing skills for a modern statistics course, when they arrive at OSU. It was suggested that maybe an R course could be offered in their first year, first quarter, to provide some basic computing skills. This could be broadened to also teach basic algorithms and programming techniques.”
Response to Recommendation:

A two credit R course will be offered in fall 2016 for all students. In future, a computer science class offered in the Data Analytics program will be available for students needing more computing background.

12. “Instructors feel as an integral part of the program, not exploited, and are given funds for professional growth activities.”

Response to Recommendation:

We all feel that instructors are essential to our program. Instructors have a challenging task teaching undergraduates at OSU. The department has been supportive for the number of changes introduced in our 200 and 300 courses to improve student success. The department has encouraged all instructors to participate in workshops and meetings on undergraduate teaching to learn about new teaching pedagogy. We feel this is very important to keep up with new teaching developments.

13. Page 6: Recommendation to improve research and teaching infrastructure. “Other colleges maintain computer laboratories for students to use and also for teaching courses. The College of Science may want to invest in setting up and maintaining computing infrastructure for teaching as well as research.”

Response to Recommendation:

We agree that a teaching classroom for our students would be a great asset to a number of methods courses. We will discuss the costs of buying additional computers with the COS Dean and hope we can obtain resources to expand the computer laboratory in the Statistics Department to use as a teaching classroom.

14. Page 7: Quality of organizational support. “The Statistics Graduate Program has one full time staff person (as graduate student coordinator, scheduling), and two half---time persons each with a split appointment with Biochemistry and Biophysics. One of the half time appointments is for the office manager (budget analysis and some grant budget support) and another is for institutional research that supports faculty searches, the P&T process, GTA appointments, among others. Previously they had two full---time FTE staff persons within the program, but recent restructuring resulted in split appointments with Biochemistry and Biophysics. So even though they effectively have the same FTE of staff as before, the split appointments present difficulty in providing quality support. The split
appointments are not necessarily due to staff skill sets, but more related to funding. The split appointments require these staff members to move from one office to another making it inefficient for them to support the two departments. Student advising is handled by an Associate Professor. Due to the split appointments, some of the office jobs are done directly by the department chair overloading her responsibilities. Student work-study workers are not being used, which would be very cost effective help for some of these tasks. Discretionary funds generated by Ecampus courses are no longer being provided to the department chair. There was considerable concern expressed by the staff that the growing Data Analytics online program will create additional challenges and burden the already understaffed office."

**Response to Recommendation:**

It has been frustrating for faculty to secure assistance in the office at various times. We feel a full time office manager is needed to address the needs of our growing Department and the administration of our two new graduate programs.