

UNIVERSITY OF WASHINGTON

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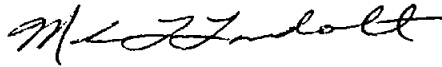
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June 8, 1999

To: Lee L. Huntsman
Provost

From: Marsha L. Landolt
Dean and Vice Provost



Re: Department of Statistics 10-year Review

Recommended Action: At its meeting of April 1, 1999, the Graduate School Council recommended that the BS, MS and PhD degree programs in the Department of Statistics continue. Moreover, the Council found this to be a highly meritorious department. I concur with the Council's recommendation and agree that the department is indeed exceptional.

The self-study, the report of the review committee, and the Group's response to the report are attached.

Background. The Department of Statistics was formed in 1979 with just three original faculty. Two more joined from other UW departments the following year. The department now numbers 11.5 professorially ranked faculty. Its degree programs are fairly small, 18 BS majors with 10-15 graduates per year, and 38 graduate students, with 4 to 7 annual MS graduates and 4 to 6 annual Ph.D. graduates. The department admits students with the expectation that they will pursue the PhD. In practice, many opt to stop with a Master's and an equal number are not encouraged to continue toward the PhD. The PhD theses are judged to be of high quality and the graduates of the program are highly sought in academic and other sectors. The undergraduate Applied Computational and Mathematical Sciences degree program, to which the department contributes, currently enrolls 52 students. The department is highly collegial and interactive. It does not suffer from a competition among fiefdoms.

Two primary suggestions were made for improving the graduate program. First, better advising is needed early in the graduate career. Second, service as TAs is currently discouraged after the first year. This practice may work to the detriment of some students, particularly those who come from outside statistics and are not yet ready to commit to a specific research path. Regarding the undergraduate program, it was suggested that the department improve the availability of course materials through the Web as a means by which to aid students and their advisors in identifying course content. Also, improved standardization among consecutive courses was recommended so as to link the courses more efficiently.

Through the University Initiatives Fund, the department has proposed to enhance its impact on campus through the creation of the Center for Statistics in the Social Sciences. The Center has the potential to transform quantitative methodology in the Social Sciences. Other opportunities for

very successful collaboration also exist. For example, the department is considering a program in computational finance.

The department seeks greater involvement in the teaching of statistics across campus. For example, the proposed Center for Statistics in the Social Sciences could contribute to teaching at all levels as well as to research. The department has played an important role in the Applied and Computational Mathematical Sciences (ACMS) program and in the NSF VIGRE grant. Indeed, the department has encouraged the development of ACMS in place of an undergraduate major in statistics, feeling that the ACMS major in many instances is more appropriate. Expanded involvement by the department is certainly appropriate, was endorsed by the review committee, and is likely to occur over time as statistics faculty continue to demonstrate their abilities as outstanding teachers with a focus on problems encountered in other disciplines. The review committee made useful suggestions for additional undergraduate involvement on the part of the department, including the development of additional tracks in the ACMS program (e.g., Statistical Finance). The University should encourage this outreach while recognizing that expertise in statistics is dispersed through the campus (the most outstanding example being Biostatistics in the School of Public Health and Community Medicine). There is no consensus that a single department should lead the teaching of statistics. Indeed, it is the opinion of some that the Center for Quantitative Science provides students in many majors with appropriate statistical offerings. Others disagree strongly with that view.

The department's most valuable contribution to the University is its focus on application-driven research. The result is a natural partnering of statistics faculty with researchers whose work benefits from sophisticated statistical tools. A major impact of this is that investigators in many disciplines are able to develop sophisticated stochastic models of the systems they study in place of classical and severely limited deterministic models. Such models have applications from the physical sciences to the humanities (e.g., in analysis of music). In the course of their work, the Statistics faculty make important fundamental contributions to their own field. The NRC rankings place statistics on this campus in the top 10 nationally and rank it as the "most improved since 1988". The department clearly has the potential to be among the top five nationally. The department's international stature was confirmed by the outside reviewers, from Stanford and Berkeley, who enthusiastically stated that this clearly is one of the top statistics departments in this country and the world, in large part due to the collaborative bent of their research. Departments that have adopted such an outlook have soared, while those that have not have declined to virtual obscurity.

The department is small relative to its national peers, which typically have approximately 20 professorially ranked faculty. These departments reside in universities that are substantially better funded than our own. The review committee suggested that the department would benefit from a growth in the number of faculty in the stochastic and data analysis fields. The committee also commented very favorably on the hiring decisions of the department.

The main threat to retaining a Department of Statistics of the quality that we now enjoy is loss of faculty through competitive offers. The fact that the department as a whole, and many of its faculty individually, are viewed as international leaders would make it susceptible to raiding even if the financial condition of the University were strong. The review committee report describes the *possibility of losing more than half the faculty* from recent inquiries and offers. The faculty are unusually under paid and are housed in space that, per faculty, is about 65% to 75% that at peer departments. The department houses the National Research Center for Statistics in the Environment in space that is small, inappropriate and located at a distance from the department itself.

This is a period in which exploding amounts of data are being generated in many fields. The need to appreciate the probability of certain events occurring (as opposed to the ability to simply calculate or pick the one most likely with deterministic models) is increasingly apparent. Prominence in many fields of critical importance to the University will not be maintained without an outstanding statistical core. This department has demonstrated that it is a fine foundation for that core. A strong case exists for its expansion through additions directly to the department and to complimentary units on campus.

Attachments

c: Richard L. McCormick, President
Werner Stutzle, Professor and Chair, Department of Statistics
Debra Friedman, Associate Provost for Academic Planning
John Slattery, Associate Dean for Academic Programs
David C. Hodge, Dean, College of Arts and Sciences
Gary Christian, Divisional Dean, Sciences
Frederick L. Campbell, Dean, Undergraduate Education
Members of the Review Committee
Graduate School Council
Augustine McCaffery, Assistant to the Dean
Beatrice Greenwald, Assistant to the Dean
(All without attachments)