## University of Washington Statistics Department Ten-Year Review Report of the Review Committee June 2009

Members of the Committee:
Leslie J Rosenberg (Committee chair) James L. Rosenberger
University of Washington
Department of Physics

Penn State University

Department of Statistics
Henry M. Levy
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## EXECUTIVE SUMMARY AND PRINCIPAL RECOMMENDATIONS

Statistics is perhaps uniquely interdisciplinary in that it has or can have a meaningful role to play in the scholarship of virtually every evidence-based discipline of the modern university.

In research, statistical thinking and methods transformed empirical investigation in the sciences and medicine in the last century. In this century, the continuing explosion of data acquisition capabilities in every subject ensures new challenges for analysis. The multidisciplinary history of statistics suggests that these analyses, while grounded in discipline-specific knowledge, may be transformed by leveraging statistical methods from other fields-as recent examples from biological and social sciences attest.

As a degree qualification, at doctoral, masters or undergraduate level, statistics graduates will find a ready reception in industry, academia and government for their skills and interdisciplinary orientation. The chief economist at Google recently gained notoriety by describing statistics as the "dream job of the $21^{\text {st }}$ century".

As part of the training of specialists in other fields, an acquaintance with modern statistical models and methods will sharpen the graduate's ability to design, conduct and interpret research.

As an indispensable component of general education, the deluge of data and uncertainty in modern society will challenge the interpretative skills of its citizens-consider, say, the rise of evidence based, personalized medicine; uncertainties around warming-induced climate events; correlations in financial markets and variations in investment returns on retirement portfolios. It can truly be said of tomorrow's citizens that "those who can't count won't count'".

It follows that a world class research university needs a strong foundation in statistics to interact with and complement its other programs. Strength in statistics also helps to attract and retain strong scholars in other areas.

The Statistics Department at UW is young-created in 1979-and vibrant. With a then novel and far-sighted model of interdisciplinary research, it grew rapidly in stature. It broke into the top ten in the 1993 NRC review of doctoral programs and ranked $5^{\text {th }}$ in Statistics and $11^{\text {th }}$ in Probability among the world's publication-producing institutions from 1986 and $2000^{1}$. Since then its faculty have achieved further unusual distinction, such as multiple elections to the National Academies, and in competition for doctoral students, its only serious competitors are top-five departments. It therefore at present has, or is close to attaining, the status of a top-five department. The US News reputational rankings currently place it sixth; the still awaited NRC rankings will use new quantitative measures and methods and so may be difficult to compare with their earlier rankings.

Statistics is central to solving challenges faced across the University. It is clear that successful research at the UW in the future will inherently require a strong Statistics Department, both to work collaboratively with other departments and to develop new statistical tools and techniques that solve data-intensive research problems. At the University of Washington, the health of this small, high-quality department is therefore crucial to the data-intensive and interdisciplinary future that the University envisions.

In allocating resources, the College and the University need to decide how dynamic a Statistics Department they want for the future. The Statistics Department has been a powerful facilitator of interdisciplinary research in the past, which is one key to its strength and quality. If the University wants to maintain a high-quality Department as nearly half its faculty FTE prepares to retire, it will need to pay attention and provide resources. We certainly recognize the dire fiscal situation that exists at the University at the moment, but we are assuming budgets will one day be brighter and we're looking beyond the immediate crisis to a ten-year horizon. We also note that since the Department is small and the discipline has modest facility needs; it requires relatively modest resources to move forward. It is much more cost effective to address issues in Statistics than in one of the large departments in the College.

We found the Department to be of high quality and in generally good health. In studying issues within the Department, we reached consensus on principal recommendations in the following areas. These recommendations are elaborated upon later in this report.

1. In collaboration with the College and University, the Department should develop growth plans that, by the next decennial review, achieve modest (25\%) to substantial (50\%) growth over current department FTE size.

[^0]-The expanding scope of data collection and analysis throughout research in academe, and in particular in priority areas at UW, means that growth is necessary for Statistics to achieve the leveraging role for UW that can reasonably be expected of it,
-As the smallest public university statistics department in the top tier, UW Statistics is very vulnerable in an era of growth in statistics departments nationally:
-enrollments in undergraduate statistics courses grew nationally by 70 percent from 1990 to $2005,{ }^{2}$ the number of U.S. doctoral programs in statistics and biostatistics is growing substantially ${ }^{3}$, and in particular, a number of other major public university statistics departments are growing rapidly in size, quality and hence stature; on a smaller scale there is growth in some of the top private university departments as well,

- Therefore staying constant in size will plausibly lead to a decline in UW's ranking and ability to grow into new areas,
-Dire finances at UW (and competitors) in the short term mean that the plan may need to be spaced out, but it should nevertheless be developed and launched, and then reviewed regularly.
-A consistent strategy of advertising with the goal of hiring one new faculty member per year over the next decade would bring vitality and energy and lead (with anticipated retirements) to the desired incremental growth in FTE without threatening the existing culture of excellence.


## 2. Use open search as the primary mechanism for faculty recruitment.

-The quality of faculty is the single most important factor in maintaining a department's stature, and since UW's Statistics faculty, even with growth, is likely to remain smaller than its public university competitors, every appointment is vital.
-While "core" appointments are critical in rebuilding in the face of pending retirements, individual searches should ideally not specify this restriction a priori.
-While joint appointments are equally critical to the Department's mission, the "narrow candidate pool" problem suggests a multi-year approach, based on opportunistic use of several years' national open search pools. Advertisements of course should indicate areas of interest for planned joint appointments.
-Occasional senior hires, still at the early-career stage, may be needed to balance the faculty age distribution and provide depth in leadership capability, given ongoing vulnerability to loss of even a few key faculty members.

## 3. Clarify expectations for joint appointments of junior faculty.

—Joint appointments between units can work well when well structured and understood by all parties, but having three masters-whether academic or budgetaryseems a recipe for potential disaster.

[^1]—Policies to avoid "double jeopardy" should be developed and clearly communicated. For example, at some universities, the assistant professor is free to change primary affiliation (among the appointing units) at any time, apparently not always possible at UW.

## 4. Continue to expand the Department's campus-wide instructional role at both undergraduate and graduate levels.

-Continue efforts to have introductory statistics courses in other departments brought under the umbrella of Statistics Department offerings.
-In case of a move to "per-student reimbursements" put in place safeguards to remove incentives to retract statistics courses back into other departments.

## 5. The University and College should give immediate attention to de-fragment and improve the Department space in Padelford.

- Existing space is poor quality and will likely have negative impacts on attracting quality researchers, students and grant support.
- This is a relatively low cost opportunity to boost morale and improve the dynamics of the Department.

6. We recommend the next Department review be at the nominal 10-year interval.

## THE REVIEW PROCESS

The Review Committee was appointed in February 2009. An early Committee member (Charles Laird) withdrew in April 2009 due to a conflict with a NIH site visit. The Committee received our charge letter from Gerald Baldasty (Vice Provost and Dean) and James Antony (Associate Dean for Academic Programs) in mid April 2009; their letter is attached as Appendix A. An organizational meeting was held late April; the external Committee members participated by telephone. Shortly thereafter, members of the Committee received the Self Study prepared by the Statistics Department, and documents from the previous Ten Year Review. One member of the Committee (LR) informally met with self-selected members of the Statistics Department the afternoon of May 15. The site visit was held on May 18 and 19 with all of the Committee present. The agenda of the site visit is attached as Appendix B. Several informational memos were sent to the Committee. We were graciously received by the Department leadership and staff and we were well cared-for. The report that follows outlines our findings and recommendations.

## DETAILED FINDINGS AND RECOMMENDATIONS

Issues called out in the previous 10-year report
We found overlap between our findings and the findings of the previous 10-year report. Hence, for perspective, we summarize key findings from that earlier report, submitted in January 1999, and add our commentary. The view from that report showed a Statistics Department having ".. achieved a level of international, national, and institutional impact that places it among the top units at the University of Washington." That review also observed "... the current situation of the Department is precarious. Extreme opportunity is coupled with extreme vulnerability, ...". The key issues from that 1999 report are "faculty retention, space, and critical mass." Our review committee likewise felt the Statistics Department was of very high quality, and still at risk from these same issues. To those risks identified in 1999, which remain serious, we are also concerned with looming retirements, the relationship of the Department with CSSS vis a vis joint faculty appointments and searches, and the limited role of the Statistics Department in teaching statistics campus-wide.

In more detail, the Principal Recommendations from that 1999 report are noted here with our comments on the current status of these issues.

1. "Establish the Center for Statistics and the Social Sciences ...". This has happened. The vision of CSSS was to "... transform the social sciences at the University of Washington, changing the nature of research and significantly increasing the level of research funding. There is much evidence these positive outcomes have indeed happened.
2. "... expand the department's campus-wide instructional role at both undergraduate and graduate levels." This has happened to some extent. For instance, the Department recently took over teaching undergraduate statistics service courses in Sociology. Also, CSSS, closely affiliated with Statistics, teaches mostly graduate statistics courses in the social sciences, often jointly with Statistics. However, a considerable number of units across campus teach their own statistics course sequences. This makes sense for highly specialized courses, but introductory courses and basic methodology should be taught by faculty contributing to the statistics discipline and over time these courses should be folded into the Statistics Department's service teaching.
3. "Strengthen the foundations of the field by encouraging the other mathematical science units to hire in the core of the stochastic and data analytic subjects." This outcome has not happened. If anything, Department demographics will leave behind a very weak core if impending retirements are not replaced. A weak core would have serious negative repercussions for attracting the best scholars and students, and on the Department's reputation, based to a large extent on the quality of its graduate program.
4. "Address retention issues aggressively." Our committee, as well, identified this as a serious issue. Further, the demographics of the Department over the next few years are severely affected by retirements. Regarding retention, several high-profile faculty
members have been lured away (including Gneiting, Madigan and Stephens). Addressing retention calls for resources from the College and University, which is surely difficult in the present budget climate. But retention can also be addressed less expensively by reallocating space in Padelford Hall to improve the research and education environment. Having graduate students in contiguous space improves the community research environment, which will also help retention. As the previous report noted, by having a sufficient amount of quality contiguous space, "The institutional payoff will be very significant."

New issues in this 10-year report

1. Lack of growth. We noted the stagnation in the number of faculty FTE since the last review. Although there have been several joint hires involving Statistics, CSSS and social-science units, there has been only one Statistics Department hire from an unrestricted search. The lack of growth concerns us because this low number of hires, coupled with impending retirements, will leave Statistics below critical mass in the Statistics core ("core" in this context signifies the development of understanding and "tools" with applicability across a large set of research fields). New hires into the Department will bring vitality and refreshes the culture with the latest research, while building on the current strength of the faculty. And given the expanding areas where the development of new methodology is so vital, without a strong Statistics core faculty, these developments will not be anchored to the foundations of statistics. From the last 10year review, "With reasonable support from the University, there is every reason to believe that the department can move into the top five nationally within the next few years." This may not have happened, and certainly one proximate cause is the stagnation in growth, when other statistics departments were expanding their faculty FTE.
2. Impending retirements. There are retirements, recent or looming, of several key faculty (Besag, Martin, Perlman, Shorack and Wellner). Within the next 5 years or so, there will be only one faculty member doing research primarily in the statistics core. A strong core attracts the very best researchers and educators, and accounts for a large portion of a department's stature. Hence, this impending hollowing of the core is very serious. In our discussions with the Statistics faculty, we also saw their concern as to whether these retirements would be retained or would be lost; the Department certainly deserves whatever clarity the College can muster on this issue.

The Department now has incredible opportunities for growth, which will also benefit the growth areas of the University. For instance, campus initiatives in the environment, global health, "E-science" and machine learning will be stillborn without Statistics Department collaboration. Also, the strong reputation of the Statistics Department means collaboration with them adds considerable intellectual weight to any joint endeavor.

Hence, Statistics needs to hire in the core as well as in cross-disciplinary areas. We realize again this is not a message the College wants to hear in this budget climate, but consider the alternative. Without hiring in the core, this small, young, highly ranked
department will wither away; you will have lost a gem developed over the last three decades. Furthermore, affiliated units will decline. For instance, one of the School of Social Work's nationally-recognized strengths is its quantitative inference of intervention outcomes. This strength would dissipate without its connection to Statistics.

In addition, since the Department is relatively small, a small number of hires or losses can have a huge impact. This would not be the case in the College's larger departments, where a decline of, say, two in the number of faculty wouldn't trigger a collapse. Starkly, one or two hires or losses can make or break this department.

Although the Department recognizes the importance of hiring, we did not hear from them an adequate strategic plan for growth into new opportunities. In fact, the Department's focus seems entirely on averting near-term shrinkage. The vision for the future of this highly successful department should be to both maintain its core strengths and develop the quality of collaborations through new initiatives that match, for example, the quality of the connections with biostatistics and social science statistics. Growth may seem implausible in the present fiscal climate, but planning must look forward. Where would the Department like to be 5 and 10 years from now? What will the Department look like? How will the Department collaborate with the initiatives across campus? We believe that the Department needs to develop in the very short term a written strategic plan that lays out the key areas and potential initiatives for growth in the next 5 and 10 years.

## GRADUATE EDUCATION

The Statistics Department has one of the nation's leading doctoral programs. This is clearly demonstrated by the impressive number of graduates placed in strong academic departments and leading industries. The external Review Committee members felt the Department was competitive in graduate student recruiting with all but perhaps the very top schools. The Statistics faculty feels that graduate recruitment is held back by the lack of adequate funding for TA and fellowship awards. They felt that in competing for the very best students, they lose out to fellowship offers from other institutions. We did not hear how the Department would create new fellowships, but we see the benefits of creating them. Students seem generally happy and speak very positively about the Department. They feel they are getting a good education and are excited by the research opportunities. The Committee was particularly impressed by how the Department weaves a project-based curriculum into graduate education. For instance, the coursework and graduate exams address real-world problems brought to the Department through its consulting program. We feel this project-based curriculum contributes much towards producing these very capable graduates.

The current MS program seems primarily an exit-ramp from the $\mathrm{Ph} . \mathrm{D}$. program for those who decide they don't have the commitment or perseverance to complete the Ph.D, though some do go on to Ph.D.'s in other disciplines. However, in today's employment environment, with ever-growing number of jobs requiring strong data analytic and statistical skills, the workforce needs of the region in government and industry would be
well-served by larger number of graduates trained at the Masters level, with perhaps a new professional type degree. (Nationally, the number of statistics MS degrees awarded almost doubled from 2000 to $2007^{4}$ ). These could be students who elect to append it to their bachelor's degree, or employees already in the workforce in Seattle or environs that would pursue the degree part time. This need could be met with service courses already taught primarily for students in other disciplines, and possibly by the development over time of online courses.

## UNDERGRADUATE EDUCATION

As is common in Statistics departments nationally, the undergraduate Statistics major has few students. In our interviews with them, we found they are generally satisfied with their major. While some students enter the program as freshmen, many others enter later. Several students thought the undergraduate major had a too low profile on campus. Further outreach and publicity would improve the major's visibility. Several students noted that the Department's web site is not very useful or inviting for undergraduates. The web site concentrates on research and graduate programs, and pages and links that might interest undergraduates are difficult to find or absent. The specific course web sites (under academics/courses) are of uneven quality and some links are broken. Overall, the Departmental web site is dated and needs to be refreshed.

Some undergraduates are in the Applied and Computational Math Sciences (ACMS) program, with a statistics concentration. This can be a good preparation for graduate work in statistics, as it provides broad training in a number of relevant disciplines. Indeed, at UW this seems a fruitful collaboration, and ACMS students were generally satisfied. While the undergraduates were generally happy, they did not "hang out" much in Statistics. One student reported an advisor who was "completely uninterested and useless or worse" in the student's education; this was an atypical report, but it was not uncommon to hear the students report a neutral advising experience. It was also common for students to take their core Statistics courses out of sequence. It was therefore not unexpected to hear those students report they felt the core curriculum was incoherent. It was more surprising to hear students who did take the recommended order of core courses to report the same incoherence. This raises a number of issues: Why do students take courses out of order? Is student advising given appropriate attention? Should Statistics enforce the prerequisite requirements? Can Statistics ensure topics in the core sequence are better organized? These are questions the Department must address to improve this aspect of their mission. Finally, many Statistics undergraduates reported on their wonderful interactions with June Morita. June is clearly a University treasure, whose energy, warmth and excitement about statistics infuse the students with enthusiasm for the subject.

[^2]
## SERVICE TEACHING

Statistics is taught by many units at the University of Washington. The Statistics Department by their calculation is responsible for about $30-40 \%$ of those service courses. This raises several questions: Should Statistics teach more of the undergraduate service courses? For instance, Stat 390/391 is a sound introduction to probability and statistics in engineering and physical sciences disciplines. A variant would do well for biological sciences and another for the social sciences. By Statistics enlarging their service teaching in this way may utilize more efficiently campus teaching resources and it would very likely raise the perhaps uneven quality of undergraduate statistics courses across the University. This issue was also flagged at the last 10-year review. The Statistics Department is also unusual in its teaching of service courses at the graduate level. This graduate service teaching includes engineering, physical, biological and medical sciences, as well as the social sciences. The Statistics Department graduate program is divided into several emphasis areas tailored to these diverse educational missions. This seems to work well and graduate students from other programs are satisfied with their graduate statistics courses.

There was some concern expressed by the faculty-and the Committee concurs-that a change to a per-student teaching reimbursement to Departments would have a negative impact on the Statistics Department. The worry is that an incentive would be in place to retract statistics service teaching back to other units. This could simultaneously bankrupt Statistics and set back the goal of consolidating Statistics service teaching. This concern is not simply hypothetical-a recent Australian national review ${ }^{5}$ found their statistics and mathematics departments have suffered gravely from this phenomenon in recent decades. The committee suggests that if this reimbursement scheme is implemented, safeguards be put in place to inhibit such "retracted" courses and fragmentation of service teaching.

## ADVISING, TUTORING, OUTREACH AND TEACHING COORDINATION

There are a huge number of tasks involved in coordinating the academic functions (teaching, advising, tutoring, outreach, etc.) in Statistics. The Department has broad responsibilities; the tutoring service, in particular, is open to students in all statistics courses across campus. These coordination tasks are largely handled by June Morita, one of only a few Principal Lecturers at the University. By all accounts, she does this fantastic amount of work incredibly well.

The Committee was surprised that these academic functions do not have secure administrative funding within the Department. The Department is proposing a $50 \%$ statefunded faculty position ("Director of Teaching \& Learning in Statistics") be created for this administration and coordination role. This is one solution, there are likely others. We recommend the Department and the College find a way to ensure these tasks are properly supported.

[^3]
## SPACE

This issue was flagged at the last 10 -year review, and it is now more acute. The Department is fragmented and the quality of the space needs to be upgraded. The last $10-$ year report called the space "pathetic" and little has improved overall. We add that graduate students are typically shoehorned into tiny rooms in locations remote from the faculty. The Chair reports that the recent modest refurbishing of some space, which we applaud, was supported solely out of Department funds that took years to accumulate. Much of the space remains poor quality and this will likely have negative impacts on attracting quality researchers, students and grant support. Further, one of the key outreach elements of the Department, the Consulting Program, is squeezed into a tiny, inhospitable space.

As a start, the University and College should give immediate attention to the straightforward rearrangement of existing space in Padelford in order to de-fragment and expand the Department. This will significantly boost morale and improve the dynamics of the Department and is a case where the cost is relatively low, but the payoff is large.

## FACULTY JOINT HIRES

We found that the jointly-hired junior faculty we interviewed are caught in a confused role. Some joint appointees wore three hats, with three-way appointments among Statistics, CSSS and a third unit. They felt pressure to attend all the department meetings and social gatherings, and pressure to tie into research, academics and administration among all their departments. Further, they reported lack of adequate mentoring and guidance throughout their career here. Care must be taken by all the involved units to make expectations clear as to the junior faculty responsibilities and the promotion process.

As noted earlier, the Statistics Department is staring at a reduction in the number of faculty in core statistics. This is a crucial issue. At the same time, most of the appointments in recent years have been joint hires through CSSS. This is a source of tension, articulated to us as a conflict between "narrow" (joint) and "open" searches. It is certainly the case that open searches have a larger pool of good candidates. It doesn't necessarily follow that joint searches result in poorer hires. But it is the case that patience is called for in joint searches; it will generally take longer to find good candidates. The Committee was sympathetic to the pressures behind the need for joint searches, but we favored the potential higher quality applicant pool from open searches. Ultimately, it is up to the Departments and the College to ensure high standards be maintained. The College can reduce this tension by helping to maintain a robust statistics core and clarifying to the extent possible a policy of allowing unsuccessful searches to carry over to the next year.

## DEPARTMENT STAFF AND ADMINISTRATION

From our discussions with staff and faculty, the staff of the Department appears to be excellent and serve the Department well and efficiently. Mark Handcock appears to have the trust and confidence of the faculty and is managing the Department effectively, while also maintaining an active research and teaching schedule.

## SUMMARY

We find the Statistics Department is of very high quality and vital to the future programs of the University. Yet we see risks. The Department needs to ensure both its core and interdisciplinary programs remain robust. This will require continuously reinvigorating the core as faculty retire while maintaining the successful collaboration with interdisciplinary programs. Both are essential to maintaining the Department's strength and hires in both should be a priority in the College as budgets recover. Hiring in one over the other will either weaken the core or dilute the interdisciplinary strength of the Department. Care should be taken so that junior-faculty joint appointments are not pulled in multiple directions by the various units. Overall, the Department's education component is of very high quality. The Department teaches a broad array of courses, from formal statistics through applied statistics in the social sciences. Their evident excellence at teaching this diverse set of courses suggests the Department broaden their undergraduate teaching role, with more statistics service courses across campus consolidated into Statistics. A reorganization of the Department space to make it contiguous and more attractive should be a high priority in the near term. One often hears the term "investment" in this fiscal climate. But this is genuinely a case where modest investments in this Department will pay off handsomely in the interdisciplinary future of the University.

## APPENDIX A: CHARGE LETTER



The Graduate School.
University of Washington
Box 353770 ( B - Communications Seattle, WA 98195 -3770


April 28, 2009
Department of Statistics Review Committee
Leslie J. Rosenberg, Professor, UW Physics (Committee Chair)
Henry M. Levy, Professor, UW Computer Science and Engineering
Iain Johnstone, Professor, Department of Statistics, Stanford University
James L. Rosenberger, Professor, Department of Statistics, Penn State University
RE: Charge to Committee for the Department of Statistics Review
Dear Review Committee:
Thank you once again for agreeing to serve on the committee to review the degree programs offered in the Department of Statistics at the University of Washington (UW). Now that the members of the review committee have had the opportunity to meet with the administrators involved with this review, we are writing to present you with a more detailed charge for the review process.

As background information, the Department of Statistics currently offers Bachelor of Science (BS), Master of Science (MS), and Doctor of Philosophy (PhD) degree programs. The last comprehensive review of the School occurred in 1997-1998.

For this review, the possible recommendations range from suspension of student entry into the department's degree programs to a recommendation for continuing status with a subsequent review in 10 years. Shorter terms can be recommended if you deem it appropriate. Equally important to this status recommendation, your review can offer the department and the administration an independent assessment of the "health" of the unit and advice on how it can be improved.

Based on our experience, we suggest that the external reviewers be relied upon as content experts who can evaluate the quality of the unit from a national perspective. They are also likely to be able to comment on recent developments in the field and their incorporation into the department. You may wish to initiate your work before the site visit to ensure a thorough and rigorous review. We encourage you to communicate with Mark Handcock, Professor and Chair of the Department of Statistics, so that he knows your interests and expectations, particularly for the site visit, and to communicate with other key faculty, if time permits.

The two-day site visit on May 18-19, 2009, will culminate with an exit discussion, divided into two portions. The Associate Dean of the Graduate School, the Dean of the College of Arts and

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Sciences, the Associate Dean for Undergraduate Academic Affairs, and the Executive Vice Provost will participate. The first portion of the exit discussion will include the Department Chair and other faculty members he may invite, while the second portion, the executive session, will include only the review committee and administrators. We will request your formal recommendation regarding the continuance of the degree programs early in the second portion of the exit interview. We will also ask you to describe your plan for completing the written report in a timely manner.

The Graduate and Professional Student Senate (GPSS) participates actively in the program review process. The GPSS will send a survey to current graduate students, and a GPSS representative will join the graduate student meeting during the site visit. At the conclusion of the review the GPSS will submit an independent report to the Graduate School based on its findings.

We request that your committee submit its written report within 4 weeks of the site visit. Specifically, the written report is due June 16, 2009. A written response will then be provided by the unit and is due on July $\mathbf{1 5}, \mathbf{2 0 0 9}$. When the response is available, the report and response will be considered by the Graduate School Council. The Dean of the Graduate School will then write a letter outlining the review and recommendations to the Provost for her consideration and action.

Please note that upon completion of program reviews, the primary review documents become public documents and are placed on the UW Office of the Provost's web site. These documents include the self-study, the review committee report, the unit's response to the report, and the Graduate School Dean's letter to the Provost.

The most important objective of your review is an assessment of the academic and educational quality of the unit. Important questions include:

1) Are they doing what they should be doing?
2) Are they doing it well?
3) How can they do things better?
4) How should the University assist them?

Additional questions you may consider in your discussions include the following:

1) Taking into account the current fiscal situation, in what ways might the College best support this program in the short and long term?
2) How can Statistics best maintain a critical mass of faculty, as well as the appropriate faculty balance, as it strives to preserve its theoretical core while continuing to actively engage with other units?
3) What ongoing strategies might the department use to establish partnerships for new initiatives, both within the College and across campus? Specifically, how can the department best find ways to aid and enhance evolving initiatives such as the College of the Environment and Global Health?

Thank you for your time and effort. Please contact David Canfield-Budde, Academic Program Specialist, at dacan@u.washington.edu with any questions you may have about the review.

Sincerely,


Gerald J. Baldasty
Vice Provost and Dean

cc: Douglas J. Wadden, Executive Vice Provost, Office of the Provost John D. Sahr, Assoicate Dean, Undergraduate Academic Affairs
Ana Mari Cauce, Dean, College of Arts and Sciences
Mark S. Handcock, Chair, Department of Statistics
David Canfield-Budde, Academic Program Specialist, The Graduate School
Jake Faleschini, President, GPSS

## APPENDIX B: SITE VISIT AGENDA

## UNIVERSITY OF WASHINGTON <br> The Graduate School <br> Department of Statistics <br> May 17-19, 2009

| Version: May 13 |  |
| :---: | :---: |
| Sunday, May 17 |  |
| 6:30 p.m. | Review Committee working dinner: <br> Nell's Restaurant (6804 E Greenlake Way N; 206-524-4044) |
| Monday, May 18 |  |
| C 301 Padelford |  |
| 8:00-9:00 am | Introduction |
|  | Mark S. Handcock, Chair |
| 9:00-9:30 | Statistics Staff |
|  | Vickie Graybeal (Administrator), Ellen Reynolds (Programs), Chris Henry (Computing Infrastructure) |
| $9: 30-10: 15$ | Undergraduate Education - Undergraduate Major, ACMS, and Statistics Service |
|  | Courses. Galen Shorack (Undergraduate Advisor), Tilmann Gneiting (ACMS |
|  | Director), June Morita (UG Teaching), Kevin K. Mihata (Assistant Dean for |
|  | Educational Programs) |
| 10:15-10:30 | BREAK |
| 10:30-10:45 | Facilities tour (offices, public space, computing) |
| 10:45-11:30 | Coffee with Graduate Students (Stat Lounge B-302) |
| 11:30-12:15 | Graduate Program |
|  | Michael Perlman, Graduate Program Coordinator |
|  | Jon Wellner (theory sequence), Jon Wakefield (methodology sequence), Vladimir |
|  | Minin (stochastic modeling sequence), Thomas Richardson (computing sequence). |
| 12:15-1:45pm | Lunch - Electrical Engineering Building, Room 403 (catered) |
|  | Affiliated units: Adrian Raftery (CSSS), Bruce Weir (Biostatistics), Loveday |
|  | Conquest (Quantitative Ecology and Resource Management), Sara Curran (Center for Studies in Demography and Ecology) |
| 1:45-2:30 | Untenured Faculty (Dobra, Erosheva, Minin, Sirakaya) |
| 2:30-3:15 | Strategic Directions: Environmetrics |
|  | Peter Guttorp |
| 3:15-3:30 | BREAK |
| 3:30-4:15 | Faculty Group Meeting (Hoff, Percival, Richardson, Wakefield) |
| 4:15-5:00 | Collaborative research on campus |
|  | Elizabeth Thompson (statistical genetics), Peter Guttorp (environmetrics), Martina |
|  | Morris (demography, statistical epidemiology), Marina Meila (computer science, machine learning; via skype) |
| Monday, May 18 | Review Committee working dinner: |
| 6:30pm | Ponti Seafood Grill (3014 3rd Ave N; 206-284-3000) |


| 8:00-8:45am | Campus Impact on training and research <br> Paul Sampson (Consulting), Elizabeth Thompson (statistical genetics), Peter Hoff (social sciences), Fred Bookstein (psychology, law, anthropology), Doug Martin (computational finance) |
| :---: | :---: |
| 8:45-9:10 | Revitalizing the Core Jon Wellner, Mark S. Handcock |
| 9:10-9:30 | Teaching and Learning Initiatives June Morita |
| $9: 30-10: 00$ | Coffee with Undergraduate Students (Stat Lounge B-302) |
| 10:00-10:15 | BREAK |
| 10:15-11:00 | Overview of Issues - Current and Former Chairs Michael Perlman, Doug Martin, Galen Shorack, Elizabeth Thompson, Mark S. Handcock. |
| 11:00-2:30pm | Review Committee executive session/lunch (Boxed lunches catered to C301) |
| 2:30-3:30 | Exit Interview (C301 Padelford) <br> James Antony, Associate Dean for Academic Programs, Graduate School Douglas J. Wadden, Executive Vice Provost, Office of the Provost John D. Sahr, Associate Dean, Undergraduate Academic Affairs Ana Mari Cauce, Dean, College of Arts \& Sciences Mark S. Handcock, Chair, Department of Statistics David Canfield-Budde, Acadernic Program Specialist, The Graduate School |
| 3:30-4:30 | Exit Interview (C301 Padelford) <br> As above; no program representatives. |
| 4:30-5:00 | Review Committee Debriefing Session (review committee only) |


[^0]:    ${ }^{1}$ Genest and Quay, Can. J. Stat. 30:329-342, 2002

[^1]:    ${ }^{2}$ from 223,000 to 377,000 according to the latest Conference Board on Mathematical Sciences survey
    ${ }^{3}$ from $\sim 65$ in the 1993 NRC review to 100-120 in the 2009 list at
    http://www.sci.csueastbay.edu/~mwatnik/statlist/

[^2]:    ${ }^{4}$ from 960 to 1765, source: IPEDS database at National Center for Education Statistics

[^3]:    ${ }^{5}$ National Strategic Review of Mathematical Sciences Research in Australia, 2006, p 57

