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February 21, 2001

To: Lee L. Huntsman
        Provost

From: Marsha L. Landolt
        Dean and Vice Provost

Re: Computer Science and Engineering 10-year Review

Summary and recommended action

      At its meeting of November 1, 2000, the Graduate School Council met with the members of the Department of Computer Science and Engineering review team and representatives from the Department and Colleges of Engineering and Arts and Sciences. The Department offers a BS in Computer Science through the College of Arts and Sciences, a BS in Computer Engineering through the College of Engineering, MS (two programs, one traditional and the other distance/evening) and a PhD. The Graduate School Council recommended continuation of each degree program and echoed the review team's assessment that this Department is "stellar" and "absolutely central to the University." The outside reviewers were "thunderstruck" by the range, quality, interdisciplinarity and amount of activity supported by the Department. Both the review team and the Council noted that, due to the interactions of this faculty with so many units across campus and the importance of the specific field, the Department is unique in that it should be considered a Department of the University as a whole rather than as specific to a College. Maintaining the strength of this Department clearly will improve the University as a whole.

      The self-study, the report of the review committee, the Department's response and correspondence to the Department prior to the meeting of the Council are attached.

Background

      The Department was last reviewed in 1989. It graduates approximately 160 BS recipients annually (equally divided between Computer Science and Computer Science and Engineering) and has 400 undergraduate majors. It graduates approximately 12 PhDs and about 50 MS students annually, housing approximately 250 graduate students, roughly 100 of whom are part-time. Major growth steps in educational programs occurred in 1967 (inauguration of the BS program), 1975, 1983, 1989, 1996 and 1999. There currently are 42 faculty; 6 were hired in 2000 and 4 in 1999. This is a dynamic Department.

The Department views its mission to be leadership and impact in information technology institutionally, regionally, nationally and internationally through education, research and service. It clearly hits its mark. The reviewers were amazed with the dynamism and reach of the Department. They rated it not quite among the top 5 nationally, but clearly able to join that group with support from the University. The new hires are strong additions and are moving the Department in that direction. The Department maintains an extremely high level of excellence in virtually all aspects of computer science. Faculty are highly interactive with counterparts in several units across campus, notably Medicine, Art, Ocean and Fishery Sciences, Statistics, Astronomy, Math Sciences, ACMS, Business, Information School, Law, and Architecture. The Department contributes importantly to the growing University strength (including branch campuses) in information science in all its guises. Faculty, staff and students are all seen to be unusually productive in relation to resources (even by UW standards). Due to demand for its programs and expertise and its energetic response to the demand, the Department's dynamism stretches it very thin, creating a tension that clearly will wear with time.

The undergraduates are a highly select group who receive a "blue ribbon" education (in the words of the review team). This program clearly attracts outstanding undergraduates to the University, recently graduating a student selected for a Rhodes scholarship. Excellence in undergraduate teaching is highly valued by the faculty. More and better teaching laboratories is the single recommendation for improvement. The demand for access to the undergraduate program is extreme and the Department has responded by close cooperation with other information technology programs that may be more appropriate for students first presenting to CSE. Although recent coordination efforts have improved this situation, this continues to be a drain and the review team and Graduate School Council recommend the hiring of an information technology counselor assigned to counsel incoming students regarding their options and aspirations.

The graduate program is flourishing. Currently, seven students hold new ARCS fellowships and 12 are NSF predoctoral fellows. There had been concerns regarding possible conflicts between faculty and students regarding entrepreneurial activity (External Advisory Committee June 1999); these have been resolved with a new Departmental policy. The Department has responded to its External Advisory Board's recommendations to diminish time to the PhD by altering the format of its general exam. Students are highly satisfied with the program, mentioning only the facilities as in need of significant improvement. The review committee recommended that the Department enrich an already outstanding research program by taking advantage of other Departments in the College of Engineering and elsewhere on campus to develop long-term research centers.

The review team particularly cited the highly regarded Professional Master's Program, which reboots practicing computer science and engineering professionals with the latest skills, as and example of the Department's importance, interaction with and contribution to the local economy. This program has about 120 students and graduates about 50 per year. It is offered through evening and extension modes. It was regarded as more successful in responding to the needs of practicing professionals than the programs of other universities.

The review team and the Graduate School Council strongly recommend that the University continue to aggressively see to the needs of this absolutely outstanding department. It is unsurpassed in its combination of (1) quality education at all levels, (2) collaborations with other educational programs within the University (all campuses), (3) service to the local educational and professional communities, (4) contribution to the local economy and (4) its research and research collaborations. Investments made here will pay off both locally and elsewhere. The greatest need, by far, is space. Space constrains the Department in all its missions. There is too little of it for this rapidly growing department, and the space they have is

simply unsuitable for the educational and research programs – particularly unsuited to what the Department must undertake in the next decade to continue to have the impact it has had. Both the review team and the Council view it as essential that the Department remain at the top of the University's priority list for new space and that interim provision of 4000 ft^2 be addressed aggressively.

Enclosures

c: Richard McCormick, President
         Denise Denton, Dean, College of Engineering
         David Hodge, Dean, College of Arts and Sciences
         Gary Christian, Divisional Dean, Sciences, College of Arts and Sciences
         Debra Friedman, Associate Provost for Academic Planning
         John Slattery, Associate Dean for Academic Programs
         Edward Lazowska, Professor and Chair, Computer Science and Engineering
         Members of the Review Committee:
            Professors Tom Daniel (Chair), Deirdre Meldrum, Charles Hill, Jeanne Ferrante (UC
            San Diego), William Wulf (National Academy of Engineering and University of
            Virginia)
         Graduate School Council
         Augustine McCaffery, Assistant to the Dean
         Danielle LaVaque-Manty, Assistant to the Dean