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INTERDEPARTMENTAL MAIL

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TO: Marsha Landoldt
Dean and Vice Provost
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FROM: Darrel S. Cowan, Acting Chair



RE: Response to the Report of the Review Committee for Earth Sciences

I made copies of the report available to all faculty and to the elected representatives of our graduate students and undergraduate majors. We discussed the report at the faculty meeting of 8 October. I requested comments from all constituents. A few faculty privately spoke to me about parts of the report, and the graduate representatives communicated their constituents' consensus regarding a professional Masters degree.

Our general response is to commend the Committee for acknowledging and affirming the overall strength of the earth-science programs at UW. Some of the specific comments and recommendations made by the report are addressed below.

Strategic Planning and Faculty Hiring

Dean David Hodge of the College of Arts and Sciences has called on all departments to produce strategic plans by June 2000. We have begun planning in Geological Sciences; the faculty have already met in a retreat on October 15, and I have held private conversations with some of my colleagues to obtain their frank views about where the department should aim in the next decade. Some of the points in the report will be specifically addressed in our strategic plan.

The most important part of the plan will speak directly to the issue, emphasized in the report, of how and when to replace the faculty who will retire in the next few years. Seven of our faculty, are over 60 years old. For diverse reasons, some are playing a much diminished role in research and in our graduate program. My singular goal during the next few months is to lead the department to a vision of which subdisciplines it wants to maintain or build into internationally recognized pinnacles of excellence.

Geological Sciences recognizes the need to better serve the women among our undergraduate majors and graduate students by hiring role models who are not only active and well-funded research scholars but also people sensitive to the academic and professional needs of women and minorities. Professor Shreve of the committee noted that the department has in fact tried to do

this, even though the report unfairly implies that we are laggards compared to our brethren in the other earth-science departments in our college.

Facilities

There is little I can add to the emphatic message in the report about the woeful state of our facilities. I echo Mike Brown the Chair of Geophysics, when I say that my own unequivocal preference is for Geological Sciences, Geophysics, and Atmospheric Sciences to remain where we are, on Upper Campus. At least some of my colleagues agree and see little if anything to be gained by uprooting us from our natural home. I do not, however, know what the consensus is among the full faculty.

A major goal is to try to obtain external funding for a new analytical center, built around a new instrument, a multi-collector inductively-coupled-plasma mass spectrometer. Professor Bruce Nelson envisions a facility that is supported by and shared among Geological Sciences, Oceanography, and Atmospheric Sciences. Achieving this goal would certainly foster the closer cooperation that the Committee recommends.

Undergraduate Program

The report recognizes many of the strengths of our program for undergraduate majors. The committee recommends that Geological Sciences do a better job in providing career counseling. We will try to mount seminars or colloquia toward this end each year, and I will contact the undergraduate representatives soon and invite them to take an active role in planning these endeavors. The Committee suggested that we consider hiring a non-academic staff member for advising. We actually had such a staff member until the mid-1990's but concluded that faculty are better able to advise students. The report does not note that in addition to our having a faculty member as undergraduate adviser, we also have a mentoring program in which every major is assigned to a faculty member, whom he or she can contact for independent advice on matters such as career preparation, choice of graduate schools, and which courses to take.

The report is strangely silent on the role that Geological Sciences plays in teaching earth science to non-majors and non-science majors on campus. We have a viable and well-subscribed curriculum comprising 100-, 200-, and 300-level courses; for the past few years, the 100- and 200-level courses alone have generated about 8500 student credit hours annually. One of my goals, which will be addressed in the Strategic Plan, is to re-examine our curriculum for non-majors to see if we can better serve the UW community. I have asked our departmental curriculum committee to do this in collaboration with a committee in the Geophysics Program. The chair of Geophysics and I see teaching non-majors as an obvious area where the two departments can more closely cooperate.

The report suggested that geological-sciences majors be required to take courses in geophysics. I direct you to Professor Shreve's comments on this topic and point out that the report is otherwise silent on the great strides we have made in modernizing our program for majors. I want to note here that we completely revised our curriculum for majors and the requirements for the Bachelors degrees three years ago. Our majors take courses in math, physics, and chemistry outside the department, but just as important, they are required to take courses *in* the department in geochemistry, geomechanics, and geobiology. As far as we know, at least a couple of these required core courses are unique in national undergraduate geological-sciences programs. Together with our completely new, 200-level required courses, they show students how chemistry, physics, and the biological sciences are applicable to a wide range of problems and issues in the earth sciences.

Graduate Program

The Committee's suggestion that we carefully consider a professional Masters program is well taken. This topic has been discussed off and on by our faculty for at least six years. I think that it was originally proposed by Professor Tom Dunne, before he left for another institution. At the time, he envisioned a Masters program in applied geomorphology and hydrogeology. The problem then as now is that such a program, whatever its disciplinary focus, would only involve course work and therefore require teaching at least some courses that are not part of the current curriculum.

The graduate-student representatives report that the graduate students strongly favor such a program. We will consider its nature and feasibility as we discuss our plan, all the while realizing that if adopted, it will bear on faculty hiring. At present, I view such a professional Masters program as a component of our overall graduate program, which is and will remain primarily oriented toward Ph.D.-bound research scholars. Geophysics is attracted to the idea of a professional Masters program in quantitative earth science; here is another natural area where the two department can cooperate to create something innovative and useful to a subset of the graduate population.

The issue of the proper balance of RA and TA support for our graduate students is one that has been discussed for years. We recognize the need to obtain more externally funded RA's but can probably only achieve this goal by continuing to hire new faculty who are actively writing proposals and obtaining grants. We have no intention of slacking off on our teaching to non-majors, however, and will strive to maintain the current level of TA support that we can offer our students. As noted in the report, they value the teaching experience afforded by these TA's.

Co-operation with the Geophysics Program

I note above several areas where the two departments can possibly cooperate more closely: consider a joint professional Masters degree; evaluate the current curricula for non-majors and consider new joint courses; and continue to jointly sponsor colloquia and seminars, perhaps more frequently. I have spoken with Mike Brown, the Chair of Geophysics, about how we can begin to promote these activities. It is my intention that if any faculty hires proposed in our strategic plan are in any way related to or of interest to the Geophysics Program, then faculty from that department will be invited to serve on search committees. We found their contribution to be very helpful in our searches related to the Surface Processes Initiative.