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TO: Su Swarat, Director of Assessment and Educational Effectiveness

FROM: David Bowman, Interim Dean
College of Natural Sciences and Mathematics

SUBJECT: Dean's Evaluation: Department of Geological Sciences Program
Performance Review

The Department of Geological Sciences conducted a thorough Program Performance Review in AY 213-14; the department's self-study, the external Program Performance Review Committee Report, and the Chair's Response are attached to this document.

The PPR includes a comprehensive review of Department staffing and operations, as well as a thoughtful review of the three degree programs offered by the department: the BS in Geology, BA in Earth Sciences, and MS in Geology. The external review committee included four highly qualified individuals representing diverse viewpoints relevant to the Department's mission and goals. The review committee included one member from another department at CSUF (Dr. Binod Tiwari, Civil and Environmental Engineering), one geology faculty member from a comparable CSU (Vicki Pedone, Geological Sciences, CSU Northridge), one geologist from a non-CSU institution (Kevin Furlong, Geosciences, Penn State University), and industry representative (Kay Pitts, Aera Energy, and a CSUF Geology alumna). I wish to particularly commend the department for including an industry representative and department alumna. The presence of a reviewer from industry brings an important added perspective to the department review.

Commendations

- The Department has a clearly articulated vision of itself and its role in the college, university, and larger society. The department goals are appropriate and aligned with the University Strategic Plan.
- The Department is a model for the engagement of students in High-Impact Practices. The capstone BS thesis and summer field camp are both widely recognized for their impact. The engagement of students in field-based experiential learning from the very earliest courses in the major are also well aligned with the university's call for increased participation in High-Impact Practices as outline in Goal 2 of the Strategic Plan.
- The Department has a strong reputation for producing students who are well prepared for both industry and graduate school. The undergraduate curriculum aligns well with the university's overall mission and goals. There is a strong rapport between students and faculty.



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- The BA in Earth Science represents a strong departmental commitment to supporting science teacher preparation. The recent hire of a faculty member specializing in geoscience education will help focus the ongoing discussion about how to better focus the BA's role in science education.
- The Department has undergone tremendous growth since the last PPR. Although total FTES have grown by 21% to 413 FTES in AY 1012-13, the total number of undergraduate majors has grown from 39 students in Fall 2005 to 163 in Fall 2013, a phenomenal growth of 452%.
- The Department has begun a process of assessing student learning in the undergraduate degree programs. Although the assessment exercises are at present focused on the capstone experiences, they provide a strong foundation to expand assessment into other points in the curriculum.
- The Department is to be commended for its leading role in the Cooper Center.

Recommendations

- The Department should identify a subset of research strengths that can guide development of the program. As the university and college move into a "zero-growth mode", the department should find ways to use tenure-track faculty hiring to build research strengths that connect with other departments and centers on campus and in the college. The department should consider focusing tenure-track faculty hiring on this subset of research strengths.
- The External Review Committee suggested the creation of a "Professor of Practice" position for industry leaders to teach courses in the department. This is an interesting idea that should be explored as a way to broaden career-focused classes while maintaining the department's research foci.
- The Department should strengthen mentoring of new tenure-track faculty and lecturers. This mentoring should help faculty develop as teachers and scholars, as well as providing guidance through the RTP process. Although the department makes a reasonable argument about the unique staffing problems caused by the recent rash of sabbaticals and departures from the tenure-track ranks, the expected increase in hiring needed to replace these losses will further underscore the need for effective mentoring. This is a watershed moment for the department, and it is incumbent on the existing faculty to carefully mentor new faculty to be the sorts of colleagues that the department wishes to have for the decades to come.
- The committee recommends the creation of concentrations or other recommended course sequences for the BA. I agree that this is a reasonable next step in the development of the BA, and is consistent with the original conceptualization of the degree.



- A long-standing problem for the department has been to find ways to manage the thesis requirement of the BS degree in the face of increasing enrollments. Although the External Review Committee advocated exploring a different model of achieving the learning outcomes of the undergraduate thesis, I do not think such a move would be consonant with the university's emphasis on high-impact learning as enshrined in Strategic Plan Goal 2.
- The unprecedented growth of both the BS in Geology and the BA in Earth Sciences has exceeded the capacity of the department and is a major stressor for the faculty. Rather than eliminating high-impact practices from a strong degree program as recommended by the review committee, the department should consider what the "best size" should be for both the BS and BA. As the university moves away from FTES-based funding and towards an outcomes-based funding model, ongoing student success in an already well-regarded degree should be more highly valued than increasing numbers in a degree with fewer opportunities for high-impact practices.
- The Department and the External Review Committee both identify graduate student funding, including fee waivers, as a critical issue for the health of the graduate program. I agree that this is a critical issue, and will work with the department to find ways to address this issue, including both external fundraising and discussions at higher levels in the university.