

EXECUTIVE SUMMARY

**Academic Program Review  
Chemistry**

EXTERNAL REVIEWERS

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CAMPUS VISIT: March 30-April 1, 2005

The review team read the self-study written by the faculty in the department; reviewed the curriculum, course syllabi and evaluations; conducted class visits; interviewed students, faculty and staff; and met with the Dean, Associate Dean, and other relevant members of the campus community. Prior to their visit, the reviewers were provided with USF's Vision, Mission, Values Statement, the department's self-study, and other university materials.

- 1. How did the external review committee rate the quality of the program- excellent, very good, good, adequate, or poor? How does the program compare with benchmark top-tier programs nationally? Please provide a brief rationale for the external review committee's rating.**

The external reviewers gave the department a rating of ADEQUATE to GOOD. While praising the dedication of the faculty to their students and the high quality of faculty research, the reviewers pointed to poor physical facilities, resistance to change and a lack of shared vision, inflexible curriculum and pedagogical approaches and deficiencies in research funding as weaknesses to be addressed if the program was to compare to "top-tier" programs else where.

- 2. What are the most important general issues that emerged from the external review process?**

a) *Facilities*

- The reviewers stated candidly that "the physical structure housing the department was inadequate" but recognized that planning was underway for a new building.
- They argued that the operating budget and capital budget were low.
- The reviewers also commented on the striking lack of support staff.

b) *Curriculum and Instruction*

- The reviewers observed "very little pedagogical innovation in the undergraduate curriculum".
- They argued that new approaches stress an active learning component, something that both gave students "hands-on" experience with real world problems and that was particularly beneficial to female and minority students.
- They emphasized that there should be more student involvement in undergraduate research, since "one hallmark of a top liberal arts institution is the institutionalization of a vibrant undergraduate research program".
- The undergraduate program was coherent and appropriate and enrollments were reasonable but all aspects of the curriculum could be strengthened.

- The reviewers commented on the lack of curricular collaboration between Chemistry and Biology when compared to other institutions.
- There was some concern with the selectivity of the institution.
- The graduate program was identified as the most divisive issue in the department. The reviewers noted the differential levels of participation by faculty in the program and the lack of adequate stipends for graduate students. Faculty disagreed vehemently about the role, impact, and quality of the graduate students.
- The reviewers felt that it was “absolutely essential” for the department to come to some agreement on the graduate program’s future, though they did not render any judgment on the program’s continuation.

c) *Faculty*

- The mix of specialties in the department was not ideal.
- Since the discipline is moving in a more interdisciplinary direction, future hires should be ‘synergistic’ hires, overlapping with either sub-disciplines in chemistry or other science departments.
- The reviewers noted a lack of internal departmental assessment of curriculum.
- The reviewers noted an overall lack of grant activity, when compared to premier liberal arts chemistry programs.

3. **What specific recommendations for improving the program’s quality has the external review committee made to the Dean?**

- The physical facilities must be improved.
- The reviewers recommended hiring at least two full-time support staff.
- The Chemistry Department should develop a strategic plan that includes a collaborative curricular assessment and a consensus vision for the department’s future. @
- The department needs to employ a greater variety of teaching strategies and more curricular variety (e.g. using technology, partnering with biology, emphasizing pre-medical options, etc.). @
- There needs to be greater student involvement in undergraduate research. Summer research support for students was offered as one significant step. ▶
- The Chemistry Department needs to come to an agreement on the graduate program’s future as soon as possible. ▶
- The next faculty position should be in organic chemistry or bio-organic chemistry with a strong interdisciplinary character. ▶
- The administration should establish an incentive program that rewards faculty for success in procuring grants.

▶ *Completed* \* *Ongoing* @ *Underway* # *Under Consideration*

4. **In the opinion of the external review committee is the program following the University’s strategic initiative in that it is;**

- a. Recruiting and retaining a diverse faculty of outstanding teachers and scholars.
- The reviewers repeatedly refer to the “generally excellent teaching and concern for the students” among the faculty.
  - The reviewers observed that “the diversity of the faculty does not match that of the student body;” they noted the low number of women (just two) and the lack of faculty of color.

- However, the reviewers noted the recruiting barriers of inadequate facilities, low start-up funds and the high cost of living.
- b. Enrolling, supporting and graduating a diverse student body that demonstrates high academic achievement, strong leadership capabilities, a concern for others, and a sense of responsibility for the weak and vulnerable.
- The reviewers made a number of recommendations for improving the quality of students.
  - The reviewers note the concern for students by the faculty and how much this is recognized and appreciated by the students themselves.
- c. Providing the environment necessary to promote student learning in the program.
- The reviewers generally believe that the department is trying hard to promote student learning but is severely hampered by poor facilities and lack of support staff.
5. **In what way is the program contributing to the goal of making the University of San Francisco a premier Jesuit, Catholic urban university with a global perspective that educates leaders who will fashion a more humane and just world?**
- The reviewers emphasized that both faculty and students in the department were well aware of the mission and priorities of the institution and were comfortable with these goals.
6. **What is the timetable for the response to the external review committee's recommendations for program improvement? What can the AVP's office do to appropriately respond to the review?**
- The inadequate office and laboratory space and dated equipment are hindering faculty teaching and research and must be addressed.
  - The reviewers recommend hiring a new tenure track faculty member in organic chemistry or bio-organic chemistry.
  - Resources need to be provided for a faculty retreat to discuss mission, goals and direction.
  - The department needs, "at the very least", two full-time support staff.
7. **What general comments or issues, if any, are crucial to understanding the reviewers report?**
- It would be unfair to evaluate the department without recognizing the deficiencies in their facilities.
  - The reviewers stressed the overarching importance of the department developing a long-term strategic plan.