

EXECUTIVE SUMMARY

Academic Program Review
College of Arts and Sciences

DEPARTMENT/PROGRAM

Chemistry BS, MS

EXTERNAL REVIEWERS

Lambert A. Doezema, PhD.

Professor, Chemistry and Biochemistry
Loyola Marymount University

Timothy E. Elgren, PhD.

Chief Research Officer
University of North Carolina at Asheville

CAMPUS VISIT

October 28 - 29, 2021

Prepared by: Ella Frazer, Associate Director of Assessment and Osasere Evbuomwan, Associate Dean of Sciences

Draft reviewed and approved by: Chemistry faculty and the Dean of the College of Arts & Sciences

The review team read the self-study written by faculty in the Chemistry department, reviewed the curriculum, course syllabi and evaluations; interviewed faculty, students and staff; and met with the Dean, Associate Deans and other relevant members of the campus community. Prior to their visit, the reviewers were provided with USF's Vision, Mission, Values Statement, 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 review team did not provide a rating, but noted that “there is much for the University of San Francisco to be proud of in their Department of Chemistry.” They observed that “this is a department (faculty and staff) that are deeply committed to serving the department’s and University’s diverse student body,” and “there is strong evidence of outstanding productivity” exemplified by the “active publication record” of the faculty, who currently have secured “more than \$650k in external funding.” This ultimately creates more opportunities for research for all Chemistry students. The report acknowledged that “these colleagues remain productive despite significant systemic

challenges that threaten their productivity, including profound issues with the building, instrumentation, and institutional support.”

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

The external review team cited a number of challenges, including faculty attrition, the structure of the Chemistry Chair position, infrequent curricular offerings in the MS degree, and lack of options for MS students to adjust their research endeavors after enrolling in the program. They also noted that “the department struggles with infrastructure issues, including inadequate instrumentation and instrumentation support and the challenges of delivering a modern curriculum within the limitations of an aging Harney Science Center.” Specifically, the reviewers detailed the need for a working, on-site NMR instrument, which is also a requirement of the American Chemical Society (ACS). The review team also mentioned policies that “have a detrimental effect on the department,” such as a lack of clarity around equipment that can be purchased each year and the strict course enrollment policy that limits the ability to offer upper-division and graduate-level courses.

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

The external reviewers provided the following recommendations:

- Fill vacant faculty positions with tenure-track faculty
- Support the purchase and ongoing maintenance of an NMR
- Address the physical plant issues in the Harney Science Center
- Initiate a robust assessment strategy and identify peer and aspirational institutions with proven records of success in the areas which USF chemistry and biochemistry can compare themselves.
- Use internal resources to better support a summer research program that can give some sort of financial support for undergraduate and graduate students.
- Improve graduate program by committing to regularly teach graduate level classes and adding other measures to make the graduate program more equitable for all students

4. In the opinion of the external review committee, is the program following the University’s strategic initiatives?

According to the external reviewers’ report, “the faculty represents a key strength of the USF Chemistry Department. They are a committed group that is intentional about working at an institution such as USF. They have a strong commitment to students, and in helping students succeed... Students, both undergraduate and graduate, list

faculty as one of the greatest strengths of the department. Students laud the quality of instruction and the knowledge of faculty members.” As previously mentioned, the reviewers found research output as a Departmental strength and “several faculty members have acquired major external grants” that increase research opportunities for both undergraduate and graduate students. In line with the University’s strategic goals, many of the Chemistry faculty “expressed how proud they are to be teaching at USF and working with such a diverse student body,” and that “junior faculty discussed pursuing external funding to support the advancement of inclusive excellence practices in the department.”

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?

As mentioned above, the reviewers describe a department that is “invested in their students’ success” and “dedicated to teaching the diverse USF student body.” The program demonstrates care for students at all levels and invests in professional relationships between students and faculty in order to prepare students for postgraduate opportunities.

6. What is the timetable for the response to the external review committee’s recommendations for program improvement? What can the Office of the Provost do to appropriately respond to the review?

The next step is for the Dean, Associate Dean, and Associate Director of Assessment to meet with the faculty (full-time) of the Department of Chemistry and discuss the action plan based on the self-study and external reviewers’ report. Based on the reviewers’ suggestions, the Office of the Provost could assist the program by: allocating funds to reinstate the NMR instrument, address issues related to the Harney Science Center, and increase financial support for graduate students.

7. What general comments or issues, if any, are crucial to understanding the reviewers report?

No additional information is necessary to understand the report.