**Executive Summary of Program Assessment**

**Campus:** St. Louis

**College or School:** Arts & Sciences

***(If applicable)***

**Academic Unit:** Chemistry & Biochemistry

**Date Submitted:** August 1, 20013

**Person Responsible for the Success of the Program:** Christopher D. Spilling, Professor and Chair

**Submitted by:** Pat Dolan, Special Assistant to the Vice Chancellor for Academic Affairs

**Degree Programs Reviewed**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Degree (e.g., BS, MA, PhD)** | **Program** | **Enrollment** | | **Number of Degrees Awarded** | |
| **Most Recent Fall Semester**  **(*2012*)** | **5-Year Fall Semester Average** | **Most Recent Academic Year**  **(*provide year*)** | **5-Year Average** |
| **BA + BS** | **Chemistry** | **129** | **119** | **13** | **13** |
| **MS** | **Chemistry** | **17** | **20** | **18** | **12** |
| **PhD** | **Chemistry** | **45** | **40** | **5** | **6** |
| **BS** | **Biochemistry & Biotechnology** | **141** | **124** | **22** | **19** |
| **MS** | **Biochemistry & Biotechnology** | **57** | **53** | **11** | **13** |

**Changes Since Last Review**

The budget cuts have forced some painful changes, particularly to the technical personnel in chemistry. We are dangerously close to having no help with equipment maintenance or to perform odd jobs around the Department. This has already had an impact on the delivery of lab classes.

**i) Human Resources-Faculty**

**Joyce Corey** retired March 2008 and was replaced by **Alicia Beatty** August 2008.

**Lawrence Barton** retired March 2007 and was replaced by **Stephen Holmes** August 2008

**Hall Harris** retired as a Founder’s Professor in 2012 has been replaced by **Ben Bythell** who will begin August 2013.

**Wes Harris** accepted a position as Associate Dean of the Graduate School (0.5FTE) in Spring 2012. His teaching effort was replaced by teaching assistant professor **Bruce Hamper**.

**ii) Human Resources-Support**

**Angela Thomas** (Administrative Associate) was replaced by **Lindsay Zoellner-Shy** in 2010

**Donna Kramer** (Coordinator of Laboratory Operations and Storeroom Manager) was replaced by **Daniel Cranford** in 2011.

**John Tubbesing** (Senior Electronics Technician) laid off in 2010.

**Rensheng Luo** (Director NMR Facility) 50% of rate salary removed. Currently 50% rate, 25% soft, 25% facility fees.

**Nigam Rath (**Director X-Ray Facility) 50% of rate salary removed. Currently 50% rate, 25% soft, 25% facility fees.

**Joe Kramer** (Mass Spectrometrist) 50% of rate salary removed. Currently 50% rate, 25% soft, 25% facility fees.

**Bruce Burkeen** [Senior Research Engineering Technician (Machinist)] reduced from 1.0 FTE top 0.8 FTE and all rate salary funds removed. He is currently paid from soft money from multiple sources and facility fees.

**Joe Flunker** (0.6 FTE) Glassblower II reduced to employment on an as needed basis. All rate salary removed.

**iii) Facilities and Major Equipment.** Despite declining University support, we have managed to consistently improve our facilities and major equipment through grants and departmental resources. In 2010, we were awarded an NSF MRI-R2 grant ($614,500) to purchase a new 600 MHz NMR spectrometer. Lab space for the NMR was extensively renovated using funds from the Department gift account. Three major pieces of equipment were donated to the Department; a Varian Vista AX ICP-AES, a Shimadzu LC/MS and a Micromass MALDI MS. Again, the lab renovation required for the installation of this equipment came from the Department (instrument fund). Finally, using a generous anonymous gift to the Department, the chemistry conference room, the graduate student lounge and a tutoring room were renovated and equipped with new furniture.

**iv) Budget.** In 2009, interim Dean Terry Thiel in the College of Arts & Sciences, decided to redistribute E&E amongst the various departments. The Department of Chemistry & Biochemistry rate budget for E&E was reduced ($52,728, 37%) from $143,622 to $90,894. The Department rate budget for graduate research assistants for fall 2013 will be reduced from to 264,000 to 246,910. However, the $17,090 (approx. 1 TA position) rate decrease was offset by a soft money allocation due to the increased SCH delivery.

**Strategies or Plans for Improving Program**

Below are selected suggestions from the external reviewer and campus review team.

1. *Graduate programs*

* Finalize the institutional routing/approval of the new graduate program requirements and implement the entire set of requirements consistently throughout the department.
* Incorporate a workshop on graduate fellowship opportunities and how to write graduate fellowship applications into the graduate orientation program.
* Develop chemistry-specific career counseling, workshops, and/or internship programs for undergraduates earlier than the senior seminar.
* Increase the stipends associated with graduate assistantships and increase the number of graduate assistantships.

The level of graduate student stipends and the numbers of TA lines together create a problem for the department; they place a limit on faculty research productivity. The level of support for graduate students was an issue that came up in the previous 5-year review.

2. *Undergraduate programs*.

* Identify reasonable changes in prerequisite/corequisite structure and course scheduling to support undergraduate degree completion in a timely fashion.
* Develop more consistent content and textbook requirements for upper division courses offered by different instructors.

*3. Develop a better reporting and funding model for CNS.* The current funding model for the CNS needs to be reconsidered for all the reasons mentioned by the external reviewer. As one step in the right direction, we recommend that the CNS provide financial support for one TA line for the department.

4. *Future plans for Department Chair*. As noted above, Chemistry has a tradition of long-serving department chairs, and it is clear that their dedication and skill have contributed to the strength of the department. Despite (or perhaps because of) this tradition, we recommend that the department consider steps to reduce the administrative load on the chair. One obvious possibility would be appointment of an Associate Chair who could take full responsibility for some aspects of the Department. An Associate Chair could also be in the position to take over as Chair in the future.

**Other Comments**

As commented on by the campus review team “The Chemistry Department is well managed and run, generating what the external reviewer called “very respectable” rates of external funding and publication per capita. Of particular note is the department’s excellent track record of seeking and receiving external funding and other forms of support, including donations, for instrumentation and equipment. The department is notably collegial and collaborative and there is little doubt that this has been critical to its success, especially when it comes to recruiting and retaining faculty in the face of uncompetitive salaries relative to prevailing market conditions. The department enjoys excellent relationships both with its alumni and with local industry, which further has enhanced its reputation in the St. Louis community. The undergraduate and graduate students appear to be fully engaged and to have collegial and respectful relationships with the faculty. The undergraduates, for example, noted that they especially appreciated the encouragement and opportunities that faculty offered them to gain early research experience. Clearly, the Chemistry Department must be considered one of the university’s major assets; everything possible should be done to maintain its excellence and enhance its promise.”