

**Memorandum of Agreement
External Program Review
Department of Chemistry
College of Arts and Sciences
October 2015**

Members of the Chemistry Department faculty, the Dean and Associate Dean of the College of Arts and Sciences, the Natural Sciences Division Chair, and the Academic Affairs Financial Analyst met on September 30, 2015 to review and discuss the Department's program review by Dr. Robert Poon, Professor of Chemistry from Claremont McKenna College. The group agreed upon the summary points and action plan that follow:

Summary Facts:

- 1) The Chemistry Department consists of five tenure-track faculty members (Ernie Kho, Norbert Furumo, J.P. Michaud, Charles Simmons, and Mazen Hamad) and two instructors (Natalie Crist and Simona Vaduvescu).
- 2) The Department offers a BA degree, with two tracks: Chemistry and Health Science.
- 3) The Department offers courses that contribute to the University's General Education Curriculum (e.g., CHEM 100/L, CHEM 114/L, CHEM 124/L and 125/L), the pre-Nursing program (CHEM 141), and the pre-Pharmacy program (CHEM 241/L and 242/L).
- 4) Over an eight year period (Fall 2008 to Fall 2015), the Chemistry Department averaged 82 majors per year and graduated an average of 6 students per year (9%).
- 5) The Department currently has an FTE Student/FTE Faculty ratio of 25 students per faculty member, and an SSH/FTE Faculty ratio of 377 SSH per faculty member.
- 6) The Chemistry major currently has a 6 year graduation rate of 18%.

External Reviewer's Recommendations:

1. It is very important that chemical waste be disposed of properly and not merely transferred to the new shed when construction is completed.
2. Usage of Kilohana tutoring should be tracked and the academic progress of students who use the service should be evaluated.

3. CAS should account for pre-bachelors pharmacy matriculants moving forward, especially if administrative decisions on departmental resources are to be made based on retention and degree completion numbers.
4. Department should create a student mentor program staffed by upper level science students to help first and second year students navigate their first two years as UHH science students.
5. There are hidden requirements to the Chemistry major that should be made clear to students.
6. The department should take the appropriate steps to convert the chemistry health sciences degree to a B.S. option.
7. The department should approach its curriculum with a united front if it wishes to retain its majors and attract new students.
8. The department should change the name of the Chemistry Health Sciences major.
9. The department requires a larger budget to provide modern laboratory experiences for its students.
10. The department should review the ACS Guidelines and meet as a group to discuss the requirements for ACS approval.
11. The department should think strategically about how to reapportion instrumentation so that either (1) one or two of the smaller lab spaces can be dedicated to faculty for research, or (2) the courses that utilize the spaces do so in an efficient way that frees up space for research during certain days of the week, whole stretches of a semester, or whole semesters.
12. The department should advertise and promote NSF REU and other fellowship experiences to its students very early on in their academic careers (many accept first-year applicants). More than that, however, the department should establish more proactive support to encourage and help students to apply for these opportunities.
13. The department should change the major requirements such that one of the seminar courses is offered in the fall of the junior year for chemistry and chemistry health sciences majors only. I then recommend changing the emphasis of the course to proposal writing.
14. The department should offer a lab-based research course required of all majors.
15. The department should celebrate the research accomplishments of students (and faculty).
16. The department should conduct some level of program assessment to determine learning outcomes for the majors that they offer.

17. The department should conduct future assessments using the guidelines set forth by the ALO/Assessment Office.

18. The department should consider applying for other courses to count for the institutional written communication requirement.

Commitments

The Chemistry Department agrees to:

1. Submit to the CAS Dean's Office the names of Chemistry majors who are pre-medical or pre-pharmacy students so their matriculation to medical or pharmacy programs can be tracked and accounted for in Chemistry major data. This data will be provided by Kelli Okamura of the Institutional Research Office.
2. Submit a BOR-approved certificate in Pre-Pharmacy Studies, housed in the Chemistry Department, so that Biology and Chemistry students taking the current pre-pharmacy curriculum can receive credit for its completion, and both departments can receive credit for the students' completion of the curriculum.
3. Explore creating an undergraduate laboratory assistant program staffed by upper level Chemistry majors to help first- and second-year students. This will be done using 399 courses.
4. Provide a report of essential equipment needs, along with the curriculum and research implications of not having those equipment available and fully functioning.
5. Work on a proposal for lab fees for their CHEM 124L, 125L, 241L and 242L lab courses. The fees will cover disposable costs above and beyond what is covered by student tuition.
6. Work on a department brochure and website to promote its program and increase its social media presence.
7. Work on making learning outcomes for Chemistry classes objective and measurable, and code ACS exam questions to learning outcomes.

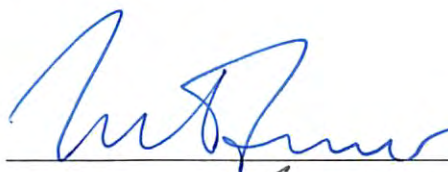
Administration agrees to:

1. Take immediate action to dispose of all chemical wastes as soon as possible.

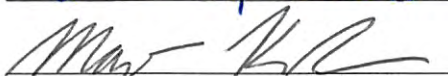
2. Explore the use of one-time funds to purchase essential equipment to support the Chemistry Department's curriculum and research (VCAA Office).
3. Provide Funds to update the Chemistry Department's brochure (CAS Dean's Office).
4. Provide funds to update the Chemistry Department's website (NS Division / CAS Dean's Office).
5. Identify funds for the search and hire of a new tenure-track faculty member to replace Dr. Ernest Kho at the start of the Fall 2017 semester.
6. Work with faculty governance to develop division or college wide procedures to recognize faculty for teaching Independent Study, Guided Undergraduate Research and Graduate Research (CHEM 399, 499 and 699 courses) with course releases.

Departmental Approvals:

Norbert Furumo, Chair

 2/17/16

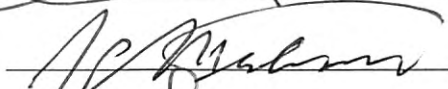
Mazen Hamad

 2/18/16

Ernest Kho

 2/18/16

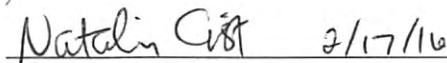
J. P. Michaud

 2/18/16

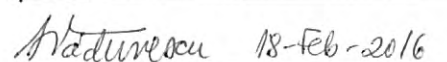
Charles Simmons



Natalie Crist

 2/17/16

Simona Vaduvescu

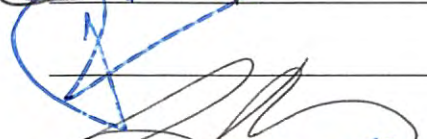
 18-Feb-2016

Administration Approvals:

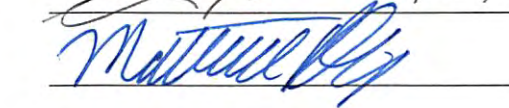
Ernest Kho, Social Sciences Division Chair

 2/18/16

Randy Hirokawa, CAS Dean

 2/24/16

Susan Brown, CAS Associate Dean



Matthew Platz, VCAA

