

SFC Chemistry Committee Report

Written by Pradeep Bugga (Ch, '09)

Committee Members:

Undergrads

Andrey Poletayev (ARC liaison), Dana Levine, Benji Lin, Wesley Yu, Laura Decker

Faculty

Douglas Rees (Faculty Chair), John Bercaw, Dennis Dougherty, William Goddard III, Mitchio Okumura, Brian Stoltz

The undergraduate members of the SFC Chemistry Committee met several times to not only organize the survey but also to analyze the results, discuss recommendations, and present assessments to the faculty members. The option session ran smoothly with tremendous faculty attendance and input yet low turnout by undergraduates. Each of the topics at hand was discussed to an extensive and sufficient degree.

Issues:

1) Undergraduate TA Program

The previous SFC Chemistry Committee ('07) took the concept of an undergraduate teaching assistant from an idea to a reality, and over the past two years, the number of UTA's has increased. Realizing from the survey that many students not only expressed interest in TA'ing but also rated UTA's highly, the committee suggested developing a more concrete program involving a website for announcements of opportunity / sign-ups. Moreover, as the HHMI grant for UTA's expires after next year, alternate sources of funding need to be sought (e.g. Student-Faculty Programs, Alumni Association). Faculty acknowledged the usefulness of UTA's and pledged parallel efforts to procure continued funding for this program.

2) Ombudspersons

In light of student input on the ability of ombuds meetings to aid the professor to respond to course concerns, the committee thought adding another meeting. An ombuds meeting before and after the midterms period along with the selection of ombudspersons earlier in the term can allow for better feedback from students. Interestingly, the faculty revealed that the original purpose of ombuds meetings was not to allow for "real-time" change within the same term but rather to elucidate various aspects of the course for the *following* year. Regardless, the addition of a second meeting can be easily implemented and aid professors and students alike.

3) Undergraduate Research

This year's committee analyzed the chemistry major and realized, outside of the

survey, the difficulty for freshmen (and sophomore) chemistry majors in landing summer research positions, especially without Ch 10 experience. The issue necessarily involves the student-faculty interaction and funding. Recommendations involved an information session early in the application season wherein professors briefly discuss their research and a website with a list of projects for freshmen with only Ch 1 experience. As an alternate to bridging the gap between freshmen and professors, the process could involve bringing together underclassmen chemistry researchers with upperclassmen who have been active in research groups. In that vein, an internal database with a list of upperclassmen and corresponding mentors could be developed with little difficulty. With regard to the fiscal aspect, other summer research fellowships (i.e. REU) could be explored along with other sources of funding (after discussion with campus administration). The option discussion revealed that the short information session and mentor-student list could prove effective in addressing this concern. A few of the faculty stressed the importance of providing every student in the chemistry major with a research opportunity. Future efforts must be made in the next Student-Faculty Conferences to make such an idea possible.

4) Senior Thesis

The previous SFC Chemistry Committee put much effort into defining a structured framework for the senior thesis option (Ch 82), while the Chemistry Club implemented many of the suggestions to a point where this is now a viable opportunity for chemistry majors. This year's committee chose simply to highlight this option for students and to allow the Chemistry Club in the future to make any requisite changes accordingly.

5) Ch 4

Based on the survey, many students felt improvement was needed with regard to organization and equipment in Ch 4. Specific problems inherent to this lab course include clogging during NMR characterization and excessive write-ups due to a lack of specific instructions. The committee recommended the addition of an NMR training session separate from normal class hours to allow students to familiarize themselves with the software and commands. Such a measure might be possible considering that Ch 4 now has two designated GLA's for the Mead Laboratory NMR instruments. A means to preclude overly lengthy write-ups could involve encouragement of the instructor to make detailed requirements available for each and every lab report. Finally, the committee felt the laboratory column purification experience could be improved by installing pressure gauges/ regulators in each of the hoods. These modifications could easily be implemented in the near future.

6) Ch 21

After ascertaining discontent with Ch 21 with respect to lectures and class organization through the survey and the persistence of this issue in not only past SFC's

but also this year's ChE committee, the committee realized the urgency in effecting a change. Two of the recommendations included employing a class coordinator (in the same vein as Mike Vicic in CH 1) and altogether rotating professors (a la Ch 41). Faculty in the option discussion felt these suggestions either were not viable or would not prove effective. The other alternative, mentioned in the discussion, is to encourage more UTA's for the course so as to fix the organizational flaws that may exist. As of now, this particular change can most viably be implemented.

7) Ch 41 Freshman Year

Based on the survey, this committee realized that most chemistry majors not only felt taking Ch 41/21 as a freshman without Ch 1 would be beneficial but also would have taken Ch 41/21 concurrently if given the option. Discussion ensued as to whether concurrent Ch 41/21 and Ch 1 enrollment should be explicitly mentioned in the course catalog or even encouraged. Nevertheless, the current system of allowing students to satisfy the institute chemistry requirement with Ch 41 instead of Ch 1 only through the pre-enrollment placement test was not changed. After the option session, the issue of disallowing students to take Ch 41 on pass-fail without having placed out of Ch 1 was raised. With present discussion by ARC on changing upper-level courses to a graded basis during the first two terms of pass-fail, no further discussion at the level of only the chemistry major is needed.