Report On “The Sophomore Physical and Inorganic Courses”

JOHN E. BENDER
Department of Chemistry
The University of Michigan
Ann Arbor, MI 48109
jbender@chem.lsa.umich.edu

For students who take organic chemistry in the first year, this means an effective elimination of any kind of traditional general chemistry course....

In this workshop, Mark M. Banaszak-Holl and M. David Curtis took turns elaborating on the recent changes and evolution of The University of Michigan’s introductory inorganic chemistry course, in light of an initial switch to teaching organic chemistry as a first-year chemistry course. The resulting weaker background of second-year students in traditional chemistry, particularly in physical chemistry topics, was noted. This situation prompted the following changes: creating a new physical chemistry course for second-year students to make up for the deficiencies in physical chemistry

"The Sophomore Physical and Inorganic Courses" by Mark M. Banaszak-Holl and M. David Curtis was presented at the "Day 2 to 40" workshop symposium held May 10–11, 1997. The two-day event was held in the Willard H. Dow Chemical Sciences laboratory building on the central campus of The University of Michigan in Ann Arbor, Michigan. Each of the articles that comprise this issue was written by one of the group of reporters whom I asked to attend each session to take field notes and then follow up with the session leader and participants afterwards.

—Brian P. Coppola, Proceedings Editor
and narrowing the syllabi topics in the following inorganic course. It was reported that the overall curriculum shift brought about a fundamental re-evaluation of how teaching is approached at U of M with respect to the role of the person of the instructor as a traditional “purveyor of facts” or a “motivator of learners.” The use of Internet/multimedia sources to streamline class organization and improve learning were presented, including a proposal to integrate an interactive online question-and-answer site for the inorganic course. Interaction with workshop participants focused somewhat on comparative aspects of these curricular changes to their respective educational institutions but most heavily on test making and grading styles. The major problems associated with the curricula shift at U of M appear to have been identified and addressed, and work is continuing on further fine tuning of the classes.

Chronology

1. Workshop participants are questioned as to their experience with teaching organic chemistry in the first year; all participants, with one exception have no experience with organic chemistry as a first year course. A survey of the course titles to be discussed and their sequential ordering in the chemistry major were given: first-year organic chemistry, CH 210 and 215 second-year physical chemistry in the fall, CH 260 and inorganic chemistry CH 302 in the winter semester. It was noted that organic chemistry has been taught as a first-year chemistry course at the University of Michigan for eight years now, though CH 260 has only been taught for three years.

2. The new course for physical chemistry, CH 260, was presented as a solution for the first problem this curriculum shift caused: a deficiency of physical chemistry skills for students entering the second-year inorganic chemistry course, CH 302. CH 302 was reported to be overloaded with material to cover, and fierce disagreement amongst faculty members over what exactly should be in the syllabus further accentuated the need for a new course. On the side, workshop participants agreed that analytical chemistry is easier to deal with in the grand scheme of things, and so its relevance to this discussion was recognized as being small.

3. The workshop leaders presented the syllabi topics for CH 320 and CH 260, and they then discussed the teaching goals of these courses. CH 302 has recently been