

CPT Newsletter

Spring 1998

Biochemistry Requirement for All Approved Chemistry Programs

As indicated in a recent *Newsletter* article, CPT has decided that all ACS-approved curricula in chemistry shall be required to include the equivalent of three semester credit hours of biochemistry, which shall be required for student certification. It is anticipated that this requirement will become effective with publication of a new edition of the CPT guidelines for undergraduate professional education in chemistry, probably in 1999.

Recently, CPT has been considering how the requirement might be implemented by approved programs. In previous *Newsletter* articles on the new biochemistry requirement, the committee requested comments on the proposal. By and large, the only concerns brought forward regarded questions of implementation. The main points articulated by several of the respondents were: (i) the chemistry program is already so crowded that another three-credit course cannot just be added to the current requirements, (ii) if biochemistry is made part of the core, how could space be made for it? and (iii) if biochemistry is given as one of the advanced courses, programs would lose some flexibility.

CPT is sensitive to these concerns and, in its further deliberations, has attempted to arrive at implementation guidelines that address them as much as possible. One point on which there is agreement within the Committee is that there will be no increase in the total number of credit hours required for graduation. The discussions, therefore, have been concerned with whether the new biochemistry requirement should be part of the core or whether it should be taught as an advanced course. The current thinking of the committee is that approved programs will be given considerable flexibility in implementing the requirement; they can either integrate biochemistry into the core or offer it as an advanced course, whichever works best in each individual program. Therefore, in the new edition of the guidelines the committee plans to insert the following statement in the section titled "Curriculum Requirements":

Biochemistry must also be included in the curriculum. Approved programs may implement this requirement either by offering and requiring certified graduates to take the equivalent of three semester credit hours of biochemistry as one of the required advanced courses, or by integrating the three semester credit hours into the required core. If a program does the latter, the minimum number of semester credit hours of basic instruction in the core would continue to be 28, with the remaining part of the core retaining comparable emphasis in the areas of inorganic, analytical, organic, and physical chemistry.

In the "Commentary on Curriculum Requirements" subsection this statement will be elaborated. The current draft for the new part of this subsection is as follows:

Biochemistry. *Approved programs may implement the biochemistry requirement either by offering and requiring certified graduates to take the equivalent of three semester credit hours of biochemistry as one of the required advanced courses or by integrating the equivalent of three semester credit hours of biochemistry into the required core. If the biochemistry requirement is implemented by incorporating it into the core, the remainder of the core must retain comparable emphasis in the areas of inorganic, analytical, organic and physical chemistry. An integrated approach would probably be necessary to incorporate biochemistry into core material; CPT encourages approved programs to consider developing such integrated core programs.*

Molecular aspects of biological structures, equilibria, energetics, reactions and metabolism should be covered in the required biochemistry experience for undergraduates. Clearly it will not be possible to cover all of these topics in depth in the equivalent of three semester credit hours. However, enough of an introduction to these topics should be presented so that students obtain the flavor of modern biochemistry. Although there is no biochemistry laboratory requirement for approved programs, appropriate laboratory experiences can be used to satisfy part of the overall biochemistry requirement.

Supplementary material will be supplied later to provide further advice on the required biochemistry experience. CPT welcomes any comments you may have on these proposed implementation guidelines. Please send them to the CPT office either by regular mail or by e-mail (cpt@acs.org).

CPT Symposium at the Spring ACS Meeting in Dallas

On Tuesday afternoon of the Spring 1998 ACS Meeting in Dallas, CPT will cosponsor a symposium, "**How Do We Know If New Ways of Teaching Improve Learning?**" The symposium will be cosponsored by the Society Committee on Education (SOCED) and the National Science Foundation (NSF) and will be held on the SOCED meeting program. It will address the tough question of how we can evaluate the success or failure of systemic change in undergraduate chemical education in the context of what it is trying to achieve, and it will feature partnerships of chemists and evaluators who will speak and engage in dialog about some of the most promising recent developments and how they are being evaluated. It will also discuss how to build successful alliances between chemists and the evaluation and assessment communities. The symposium was organized by Jerry Mohrig, Chair of CPT, and it will have as speakers, John Wright and Susan Millar of the University of Wisconsin, Madison, Brock Spencer of Beloit College, Joshua Gutwill of the University of California, Berkeley, and Brian Coppola of the University of Michigan.

MARK YOUR CALENDAR

The Committee has decided to hold an open meeting at the ACS National Meeting in Dallas. It will be held at Noon on Sunday, March 29, 1998, in the Continental Room of the Fairmont Hotel. This is a slight departure from the regular schedule of only having one open meeting a year at the fall ACS National Meeting. CPT holds open meetings to gather input from the chemistry community on topics discussed in this newsletter and on other matters of interest in professional chemical education. We invite you to attend and express your views on the following subjects or other issues that you would like to bring to the Committee's attention:

1. Biochemistry in ACS-approved programs.
2. Library requirement for ACS approval.
3. Topics from the floor.

CPT Correspondence Backlog Eliminated

Some of you may have experienced delays in correspondence from the Committee within the last year or two. Because of a combination of largely unavoidable occurrences it has taken much too long for the Committee to convey its actions on 5-year reports and new applications to the interested parties. CPT apologizes for any inconvenience that this may have caused you and is happy to announce that the backlog has now been largely eliminated. In the future, all schools can expect to hear from the Committee within four months of the time CPT considers their materials. We also pledge to exercise the same care in preparing the correspondence as has been done in the past.

Mailing Labels

Periodically, the Committee receives requests for a mailing list of the approved schools in label format. Often the reasons for requesting such a list are very much in line with programs that CPT advocates and would therefore like to support. Pressure-sensitive labels are available at cost (\$30) for nonprofit educational purposes. For further information, please contact Dolphine Hite, Office of Professional Training, American Chemical Society, 1155 Sixteenth Street, NW, Washington, DC 20036, tel. (202) 872-4589.

Certificates for Graduates

Those chemistry majors receiving a baccalaureate degree and having completed a curriculum described in the ACS Guidelines may be certified to the Society for membership purposes by the head or chair of the chemistry department at the approved institution. We will be happy to send certificates to certified graduates. When you request that we send certificates, please include the student's current mailing address. If you would like to have certificates available for presentation to your certified graduates, please let us know the number of certificates you would like and the date you need them.

Send all requests to the Office of Professional Training, American Chemical Society, 1155 Sixteenth Street, N.W., Washington, D.C. 20036.

The ACS Directory of Graduate Research 1997

The 1997 edition of the *ACS Directory of Graduate Research*, just published in December, is now available. The Directory provides a wealth of information on faculty and their research at institutions in the U.S. and Canada offering organized curricula leading to doctoral and master's degrees in chemistry and fields closely related to chemistry. There are listings included in the 1997 edition for programs in chemistry, chemical engineering, biochemistry, medicinal/pharmaceutical chemistry, clinical chemistry, polymer science, food science, forensic science, marine science, toxicology, materials science, and environmental science. Information on 692 academic departments, 12,030 faculty members, and 91,515 publication citations are included in the most recent edition. The *Directory*, published in odd-numbered years, and the 1997 edition contain current faculty information for the 1997-98 academic year. Although it is designed to serve undergraduate students and their faculty advisers in choosing graduate schools appropriate to their talents and interests, the *Directory* is an important reference throughout the chemistry community. Each department listed in the *Directory* receives a copy and all ACS-approved programs at undergraduate institutions also receive complimentary copies. Additional copies may be purchased at a price of \$65 from ACS Customer Service & Sales, who encourage you to fax your order to (202) 872-6067. If you need to talk to a sales representative call 1-800-227-9919 or (202) 776-8100.

We are also pleased to announce the availability of *DGRweb 1997*, the on-line version of the *ACS Directory of Graduate Research 1997*. It contains all the information available in the printed version, but in an easy-to-use searchable database. *DGRweb 1997* is searchable by faculty and by institution. Go to the *DGRweb 1997* home page for more details: <http://pubs.acs.org/dgrweb>.

Careers in Industry and Graduate Work Brochures Available

The ACS Committee on Professional Training (CPT) has two brochures available for undergraduates. One is *Planning for a Career in Industry*. Prepared by CPT with the ACS Committee on Corporation Associates, this brochure is designed to provide advice for undergraduate chemistry students who plan to enter the work force upon graduation. It includes suggestions about curriculum planning as well as a broader discussion about career options and opportunities. The brochure concludes with a bibliography of resources on career planning available to undergraduates and their advisors.

The other brochure is the sixth edition of *Planning for Graduate Work in Chemistry*. Written for anyone considering graduate work in chemistry or chemically related disciplines, it offers suggestions on the preparation, selection, and application process for graduate school.

Requests for copies (free of charge) may be made by letter to the Office of Professional Training, 1155 Sixteenth St., NW, Washington, DC 20036, by e-mail to cpt@acs.org, or by phone to (202)

872-4589. These brochures are also accessible via the World Wide Web:
<http://www.acs.org/cpt/hp.htm>.

Revised Supplements to the 1992 ACS Guidelines

About the time the 1983 edition of the *ACS Undergraduate Professional Education in Chemistry: Guidelines and Evaluation Procedures* was published, additional curricular material was distributed in the form of supplements that included suggestions on course content in most of the major subdisciplines of chemistry. The supplementary material came about because of requests for more specific information on course content than was offered in the Guidelines. In fact, the Guidelines deliberately omit reference to course syllabi or the requirement of specific courses in order to maintain and encourage as much flexibility in the curriculum as possible. However, to assist schools that welcome suggestions for planning courses in the main areas of chemical curricula, descriptive information on courses was prepared with the help of the ACS Divisions. It is this material that we refer to as supplements.

In the years since the supplementary material appeared, we have occasionally asked the appropriate ACS Divisions to review the material and suggest revisions. Areas currently covered include analytical chemistry, biochemistry option, chemical information retrieval, environmental chemistry option, inorganic chemistry, materials option, organic chemistry, physical chemistry, polymers option, and guidelines for preparing a research report. The most recent supplementary material was made available in late 1997.

Please send your requests for supplementary material by letter to Office of Professional Training, American Chemical Society, 1155 Sixteenth Street, N. W., Washington, DC 20036 or by email to cpt@acs.org.

ACS Committee on Professional Training 1998

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**Contact the Secretary of the Committee
for inquiries concerning CPT and the
content of the newsletter.*