The New ACS Guidelines for Undergraduate Chemistry Programs: Promoting Excellence and Innovation.

Symposium sponsored by CHED and organized by CPT.

Fall 2008 ACS National Meeting
Philadelphia, PA
Monday, August 18, Afternoon

Join members of the Committee on Professional Training (CPT) for an interactive symposium to discuss opportunities for excellence and innovation under the new ACS Guidelines. This event will include an open forum to ask questions, offer comments, and share experiences on issues associated with the new ACS Guidelines. The symposium will include the following presentations by the CPT members:

Overview of the 2008 ACS Guidelines for bachelor's degree programs

William F. Polik

The ACS Committee on Professional Training (CPT) has released new guidelines for approval of bachelor's degree chemistry programs. The goals of the new ACS Guidelines will be reviewed, and the changes regarding faculty, infrastructure, and curriculum requirements will be summarized. Expectations for developing student skills and program self-evaluation will be described. New application and reporting procedures will be described, and the implementation schedule for the new guidelines will be presented.

Promoting curricular innovation using degree tracks and foundation courses

John W. Kozarich and Lee Y. Park

Promoting curricular innovation is a major goal of the new ACS Guidelines. Chemistry departments have the opportunity to develop degree tracks. Degree tracks can cover chemistry as a whole, focus on a chemistry subdiscipline, or address a chemistry-related multidisciplinary area. The requirement for one semester of foundation course work in each of the five major areas of chemistry (analytical, biochemistry, organic, inorganic, and physical chemistry) can be met in a variety of ways, including the first semester of a two-semester course sequence, a specifically developed one-semester course, or an integrated experience. Thus, many options are available for developing innovative degree tracks that address emerging areas of chemistry, match the needs and interests of students, take advantage of faculty or local expertise, and match departmental and institutional mission.

Building program strength and excellence through in-depth experiences

Jeanne Pemberton and Scott C. Hartsel

Promoting program excellence is a major goal of the new ACS Guidelines. Approved programs offer their students a broad-based and rigorous chemistry education that prepares them to become professional chemists. Because in-depth courses build on prerequisite foundation course work, they provide depth and rigor on various chemistry topics. They can also integrate

and develop connections between multiple foundation areas. In-depth courses can support degree tracks in chemistry-related multidisciplinary areas. A high quality undergraduate research experience is particularly effective for integrating chemical concepts at an in-depth level and should be offered whenever possible.

Development of student skills to promote professional success

Joel I. Shulman and Anne B. McCoy

While formal course work provides students with education in chemical concepts and training in laboratory practices, students need to learn more than course content alone to be effective and productive scientists. They need to master a variety of skills that will allow them to become successful professionals, including problem-solving, use of chemical literature, laboratory safety, oral and written communication, teamwork, and ethical behavior. Departments should have a means by which they assess the development of student skills through their pedagogy and curriculum.

Using a self-evaluation process to stimulate program improvement

Barbara A. Sawrey and Joseph S. Francisco

Self-evaluation is a process by which programs determine how well they are meeting their stated goals. The new ACS Guidelines state that an approved chemistry program should regularly evaluate its curriculum and pedagogy, development of student skills, faculty development opportunities, and infrastructure needs relative to its teaching and research mission. The process of program self-evaluation will be discussed, along with the expectations for ACS-approved programs.

Case studies and applying the ACS Guidelines to real curricular situations

CPT Panel

Several case studies will be presented that apply the new ACS Guidelines to situations encountered in various chemistry curricula, including quarter systems, one-semester foundation courses, foundation and in-depth level laboratory experiences, and courses taught by other departments. Opportunity for discussion of situations posed by audience members will be provided.