American Chemical Society

Using the ACS Guidelines for Chemistry Programs in Two-Year Colleges to Enhance Programs Facilitate Student Transitions

John Clevenger

Emeritus Professor
Truckee Meadows Community College

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Symposium Objectives

- Consider the proposed revisions to the *ACS Guidelines for Chemistry in Two-Year College Programs*
- Explore the changes and opportunities
- Explore ways to
  - Raise awareness
  - Increase use
  - Leverage impact

History

- 1970 - Guidelines for Chemistry Programs in Two-Year Colleges - First Edition
- 1988 - Guidelines for Chemistry and Chemical Technology Programs in Two-Year Colleges
- 1991 - Establishment of the Chemical Technology Program Approval Service (CTPAS)
- 1997 - Guidelines for Chemistry Programs in Two-Year Colleges - Second Edition

ACS Guidelines for Chemistry Programs in Two-Year Colleges provide

- A comprehensive model designed for a range of institutions
- A framework for reviewing two-year college chemistry programs
- Help in identifying areas of strength and opportunities for change
- Opportunity to leverage support from institutions, partners, and external agencies

Members

Society Committee on Education (SOCED) Task Force on the ACS *Guidelines for Chemistry Programs in Two-Year Colleges*

- **John Clevenger (Chair)**
  - Truckee Meadows Community College, NV
- **Dolores Aquino**
  - San Jacinto College Central, TX (CHED Committee on Chemistry at Two-Year Colleges)
- **Carlos Gutierrez**
  - California State University-Los Angeles (Committee on Professional Training)
- **Tom Higgins**
  - Harold Washington College, IL (Committee on Minority Affairs)
- **David Malik**
  - Indiana University Purdue University-Indianapolis
- **Doug Sawyer**
  - Scottsdale Community College, AZ
- **Uni Susskind**
  - Oakland Community College, MI (College Chemistry Consultants Service)

Previous Members

- **Maureen Scharberg (Past Chair)**
  - San Jose State University, CA
- **Ed Kremer**
  - Kansas City Kansas Community College (CHED Committee on Chemistry at the Two-Year Colleges)
- **George Kriz**
  - Western Washington University
- **Linette Watkins**
  - Texas State University (Committee on Minority Affairs)

Timeline for Third Edition

- Formed task force to consider revisions to the *ACS Guidelines for Chemistry Programs in Two-year Colleges* in Spring 2005
- Conducted an informal study in Fall 2005
- Solicited input on how best to align guidelines
- Solicited feedback on goals of revision in Winter 2007/08
- Solicited feedback on proposed changes in Spring 2008
- Will begin soliciting feedback on draft revisions in Fall 2008
- Will release new guidelines in Spring 2009

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Setting the direction for the ACS Guidelines for Chemistry Programs in Two-Year Colleges

Panelists

John Clevenger
Truckee Meadows Community College

Doug Sawyer
Scottsdale Community College

Tamar (Uni) Susskind
Oakland Community College

Moderator

Jodi Wesemann
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Goals of the Third Edition

- Reflect changes in pedagogy, technology, accountability
- Facilitate student transfer
  - by aligning with the new *ACS Guidelines and Evaluation Procedures for Bachelor's Degree Programs*
  - by calling for communicating with receiving institutions
- Provide a more useful resource for strengthening programs
  - by offering guidance for ongoing curricular change
  - by offering guidance for improving the working environment

Questions for Consideration by Panel Audience

- How does the draft revision reflect current changes in pedagogy, technology, and accountability?
- How can the revised *Guidelines* better facilitate student transfer?
- How do the revised *Guidelines* provide a more useful resource for strengthening programs?
- Others?

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Exploring the Changes and Opportunities

Doug Sawyer

Math/Science Division Chair
Scottsdale Community College

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Exploring the Changes
What's New?

- No longer a list of standards
- The guidelines are aligned with the ACS guidelines for bachelor's programs, where appropriate
  - Student Research
  - Student Skills
  - Assessment
- Partnerships
- Supplements will be available for those seeking specialized resources (assessment, pedagogies, safety regulations)

Guideline Types

- Essential for a successful program -“Must have”
- Common for an effective program - “A program has..”
- Standards of excellence - “may have”

Organization

1. Goals of Guidelines
2. Institutional Environment
3. Faculty and Staff
4. Infrastructure
5. Curriculum
6. Student Research and Scholarly Activities
7. Development of Student Skills
8. Student Mentoring and Advising
9. Program Self-Evaluation and Assessment
10. Partnerships

We Want Your Feedback!

- Pick a section of the Guidelines
- Assemble into small groups
- In your group
  - Pick a time keeper and scribe
  - Review the section
  - What aspect of this section of the guidelines will be useful for your program?
  - What resources will your program need to implement these guidelines?

Section Details

2. Institutional Environment
    - 2.1 Institutional Accreditation
    - 2.2 Program Organization
    - 2.3 Program Budget
    - 2.4 Student Support Services

Section Details

3. Faculty and Staff
    - 3.1 Faculty
    - 3.2 Teaching Contact Hours
    - 3.3 Professional Development Policies
    - 3.4 Support Staff

Section Details

4. Infrastructure
    - 4.1 Organization of Facilities
    - 4.2 Equipment and Instrumentation
    - 4.3 Computational Capabilities and Software
    - 4.4 Chemical Information Resources
    - 4.5 Chemical Safety Resources

Section Details

5. Curriculum
    - 5.1 Pedagogy
    - 5.2 General Education Chemistry Courses
    - 5.3 Developmental or Preparatory Course
    - 5.4 General Chemistry
    - 5.5 Organic Chemistry
    - 5.6 Laboratory Experience
    - 5.7 Frequency of Course Offerings
    - 5.8 Transfer Students

Section Details

6. Student Research and Scholarly Activities
   - Elements of good research and its benefit to students and faculty

Section Details

7. Development of Student Skills
    - 7.1 Problem Solving Skills
    - 7.2 Chemical Literature Skills
    - 7.3 Laboratory Safety Skills
    - 7.4 Communication Skills
    - 7.5 Team Skills
    - 7.6 Ethics

Section Details

8. Student Mentoring and Advising
    - 8.1 Faculty
    - 8.2 Counselors and Advisors

Section Details

9. Program Self-Evaluation and Assessment
    - 9.1 Program Goals and Objectives
    - 9.2 Student Learning
    - 9.3 Innovations in Instruction

Section Details

10. Partnerships
    - 10.1 On Campus
    - 10.2 Higher Education Institutions
    - 10.3 K-12 Institutions
    - 10.4 Industry and Scientific Organizations

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Extending the Impact of the ACS Guidelines for Chemistry Programs in Two-Year Colleges

Tamar (Uni) Susskind

Professor Emerita
Oakland Community College
Auburn Hills, MI

Like Previous Editions, the Third Edition of the *Guidelines*

is intended to be used as:

- a framework for self-studies and program reviews.
- a resource that deals with:
  - Faculty working conditions,
  - Space requirements,
  - Curriculum and instrumentation,
  - Hands-on laboratory experiences and safety, and
  - Other topics to share with administrators, colleagues, union members and partnering institutions and organizations.

In Addition, the Third Edition of the *Guidelines* is intended to:

- Stimulate faculty, departments and administrators by providing a vision of excellence in chemistry education for the first two years of college.
- Be used as a resource for self-evaluation and ongoing improvement of chemistry education in two year colleges.
- Serve as a call for collaborative action for all stakeholders to improve chemistry education in the first two years of college.

The Audience for the Third Edition of the *Guidelines* is

- Primarily 2YC chemistry faculty/counselors/advisors
- Faculty in other/related disciplines to infuse chemistry across the curriculum
- K-12 chemistry teachers and college/university chemistry faculty to align exit/entrance requirements
- Policy makers who seek excellence & accountability
- Professional societies, government & funding agencies and educational institutions to build consensus and provide guidance
- Publishers and developers of instructional materials
- Chemistry business and industry to keep everyone current and connected to work force demands

The Impact of the *Guidelines* can be extended by:

FACULTY who recognize their "beyond-the-classroom" responsibilities by:

- Participating in professional growth activities
- Participating in building consensus within the department/college on student outcomes in chemistry courses/programs
- Building collegiality across disciplines for chemistry curricula/instruction
- Communicating the needs of chemistry students to faculty in other disciplines
- Being actively involved in professional organizations

The Impact/Influence of the *Guidelines* can be raised by:

DEPARTMENTS AND ADMINISTRATORS who:

- Invite adjunct faculty to participate in department activities
- Hold regular faculty meetings for sharing teaching strategies and curricular review.
- Provide faculty financial support for professional development.
- Provide faculty development activities to help faculty respond to new pedagogy/technology techniques.
- Help ease articulation process for all transfer students, especially minority students.

The Impact/Awareness of the *Guidelines* can be extended further by:

Referencing the new *Guidelines*

- In journal articles on chemistry pedagogy.
- In AACC and other two-year publications
- When sharing pedagogical approaches in newsletters (department, regional, state and/or national)
- On web sites that serve as clearing-houses for effective pedagogical practices
- In workshops that deal with teaching/learning
- In teaching/learning scholarly activities/studies
- In building public understanding and support of chemistry

The Impact/Awareness of the *Guidelines* can be extended by:

- Aligning its *Guidelines* to those of the ACS Guidelines for Bachelor Degree Programs
- Promoting the formation of partnerships
- Improving the image of 2-year colleges
- Incorporating student, as well as exiting/incoming institutional responsibilities for facilitating student transfer

Looking Beyond:
Future Impact and Use of the *Guidelines*

Are there other ways in which the impact of the

ACS Guidelines for Chemistry Programs

in Two-Year Colleges

can be extended?

Thank You!

Additional thoughts, questions and suggestions

can be sent to:

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or

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