America’s great idea: Advancing community college education in the US and abroad

John V. Clevenger
Professor Emeritus, Truckee Meadows Community College, Reno, NV
Chair, Society Committee on Education Task Force on Two-Year College Activities

240th ACS National Meeting
August 23, 2010
Objectives

• Review the unique and changing landscape of community colleges
  – Responsive community- and student-oriented role
  – Growing enrollment
  – Increasing diversity
  – Expanding internationalization

• Explore the opportunities for chemistry education
  – Facilitating student transitions
  – Extending the American Chemistry Society’s response

• Share strategies for leveraging America’s great idea
Community College Landscape

Who has…

• attended a community college?
• taught at a community college?
• taught students who transferred from a community college?
• established a partnership with a community college?
Unique and Changing Landscape

The growth and evolution of an uniquely American institution of higher education

- 1901 – first community college (Joliet Junior College)
- 1930s – development of job training programs in response to the depression
- 1944 – GI bill
- 1960 – establishment of Kellogg Junior College Leadership Programs
- 1960s – development of a national network of public community colleges
- 1988 – Commission on Future of Community Colleges (defined community not only as a region to be served, but as a climate to be created)
- 2009 – Presidential challenge to increase proportion of college graduates
Community-oriented Landscape

Number and type of two-year colleges*

- Total: 1195
- Public: 987
- Independent: 177
- Tribal: 31

* Does not include branch campuses

Student-oriented Landscape

Two-year colleges…

• are distinct educational institutions with their own missions
• share common goals
  – provide access to higher education
  – serve community
• pursue common practices
  – open admissions
  – low tuition

American Association of Community Colleges, *Community Colleges Past to Present*, http://www.aacc.nche.edu/AboutCC/history/Pages/pasttopresent.aspx
Student-oriented Landscape

Two-Year College Enrollment

- Total: 11.5 million
  - Credit: 6.5 million
  - Noncredit: 5.0 million
- Full-time: 41%
- Part-time: 59%

Diverse Landscape

Two-Year College Student Demographics

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>60%</td>
</tr>
<tr>
<td>Men</td>
<td>40%</td>
</tr>
<tr>
<td>Racial and ethnic minorities</td>
<td>35%</td>
</tr>
<tr>
<td>Black</td>
<td>13%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>15%</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>6%</td>
</tr>
<tr>
<td>Native American</td>
<td>1%</td>
</tr>
<tr>
<td>First generation</td>
<td>39%</td>
</tr>
</tbody>
</table>

Increasingly Diverse Landscape

Fall Enrollments in Two-Year Colleges

Digest of Education Statistics 2003, Table 210; 2004, Table 207; 2005, Table 206; 2007, Table 217; 2008, Table 227
Increasingly Diverse Landscape

Percentage of all undergraduate students in the US

- 41% First-time freshmen
- 55% Native American
- 46% Asian/Pacific Islander
- 46% Black
- 55% Hispanic

Expanding International Landscape

Number of international students is increasing at a higher rate at US community colleges

<table>
<thead>
<tr>
<th>2008-09 Academic Year</th>
<th>Community college students in US</th>
<th>All undergraduate students in US</th>
</tr>
</thead>
<tbody>
<tr>
<td># of international students</td>
<td>95,785</td>
<td>671,616</td>
</tr>
<tr>
<td>% of international students</td>
<td>1.5%</td>
<td>3.7%</td>
</tr>
<tr>
<td>annual increase</td>
<td>10.5%</td>
<td>7.7%</td>
</tr>
</tbody>
</table>

Expanding International Landscape

<table>
<thead>
<tr>
<th>2008-09 Academic Year</th>
<th># of international students</th>
<th>% of student body</th>
</tr>
</thead>
<tbody>
<tr>
<td>Houston Community College System, TX</td>
<td>5,580</td>
<td>9%</td>
</tr>
<tr>
<td>Santa Monica College, CA</td>
<td>3,146</td>
<td>10%</td>
</tr>
<tr>
<td>Montgomery College, MD</td>
<td>2,248</td>
<td>9%</td>
</tr>
<tr>
<td>Seattle Central Community College, WA</td>
<td>1,201</td>
<td>12%</td>
</tr>
</tbody>
</table>

## Expanding International Landscape

### Top 10 places of origin (2008-09)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Place of Origin</th>
<th>Associate’s institutions</th>
<th>All institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% of Total</td>
<td># of international students</td>
<td>% of Total</td>
</tr>
<tr>
<td>1</td>
<td>South Korea</td>
<td>14.5</td>
<td>15.4</td>
</tr>
<tr>
<td>2</td>
<td>Vietnam</td>
<td>8.4</td>
<td>14.6</td>
</tr>
<tr>
<td>3</td>
<td>Japan</td>
<td>8.3</td>
<td>11.2</td>
</tr>
<tr>
<td>4</td>
<td>China</td>
<td>5.8</td>
<td>4.4</td>
</tr>
<tr>
<td>5</td>
<td>Nepal</td>
<td>4.0</td>
<td>4.4</td>
</tr>
<tr>
<td>6</td>
<td>Mexico</td>
<td>3.6</td>
<td>4.2</td>
</tr>
<tr>
<td>7</td>
<td>Hong Kong</td>
<td>3.4</td>
<td>2.2</td>
</tr>
<tr>
<td>8</td>
<td>India</td>
<td>3.0</td>
<td>2.0</td>
</tr>
<tr>
<td>9</td>
<td>Taiwan</td>
<td>2.6</td>
<td>1.9</td>
</tr>
<tr>
<td>10</td>
<td>Indonesia</td>
<td>2.2</td>
<td>1.9</td>
</tr>
</tbody>
</table>
Expanding International Landscape

Strategies for internationalizing community college education

• Internationalizing the curriculum
• International student recruitment and retention
• Student study abroad programs
• Service learning
• Faculty global professional development

From Community Colleges for International Development, Inc.
http://ccid.kirkwood.cc.ia.us/index.htm
Expanding International Landscape

Strategies for internationalizing community college education

- Establishing the partnership
- Planning the partnership
- Funding
- Preparing the campus
- Formatting the partnership
- Marketing the partnership
- Networking

AACC Global Education Commission
http://www.aacc.nche.edu/Resources/aaccprograms/international/Pages/trends_partnerships.aspx
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• Share strategies for leveraging America’s great idea
Responding to a Changing Landscape

Percentage of bachelor’s and master’s graduates in 1999 and 2000 who attended community college

<table>
<thead>
<tr>
<th>Field</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>All science and engineering</td>
<td>44%</td>
</tr>
<tr>
<td>Physical and related sciences</td>
<td>37%</td>
</tr>
<tr>
<td>Engineering</td>
<td>40%</td>
</tr>
<tr>
<td>Computer and math sciences</td>
<td>42%</td>
</tr>
<tr>
<td>Social and related sciences</td>
<td>45%</td>
</tr>
<tr>
<td>Life and related sciences</td>
<td>46%</td>
</tr>
</tbody>
</table>

Responding to a Changing Landscape

Fostering successful student transitions

• Involve all stakeholders – including chemistry faculty
• Pursue concerted efforts to:
  – Increase awareness
  – Improve communications
  – Develop partnerships

Responding to a Changing Landscape

For student transitions to be successful, all parties need an understanding of the different:

- student demographics
- capacity issues
- general education requirements
- curricula
- cultural attitudes and perceptions
Responding to a Changing Landscape

Early ACS activities

• 1961 – First Two-Year College Chemistry Consortium (2YC₃) conference
• 1970 – Publication of Guidelines for Chemistry Programs in Two-Year Colleges
• 1985 – Invitational Conference “Critical Issues in Two-Year College Chemistry”
Responding to a Changing Landscape

Recent ACS events – 2008

• Reinvigoration of 2YC3 Regional Advisory Boards
• Revision of *ACS Guidelines and Evaluation Procedures for Bachelor’s Degree Programs* (inclusion of Section 5.9 Student Transfer)
• Programming at 20th BCCE
  – “Using the ACS Guidelines for Chemistry Programs in Two-Year Colleges to Enhance Programs Facilitate Student Transitions”
  – “Exploring the ACS Guidelines and Expectations for the First Two Years of Chemistry”
• Workshops on increasing participation of undergraduate students in chemistry
  – Native American
  – Hispanic
Responding to a Changing Landscape

Recent ACS events – 2009
- Release of *ACS Guidelines for Chemistry in Two-Year College Programs*
- Formation of Society Committee on Education Task Force on Two-Year College Activities

Recent ACS events – 2010
- Expansion of ACS Office of Two-Year Colleges
- Collection of data on chemistry faculty at two-year colleges
- Programming at 21st BCCE
  - “Supporting and Engaging Year College Programs: Exploring the ACS Role”
  - “Practices and Policies that Foster Excellence in the First Two Years”
Responding to a Changing Landscape

ACS guidelines provide a vision of excellence

ACS Guidelines for Chemistry in Two-Year College Programs parallel ACS Guidelines and Evaluation Procedures for Bachelor’s Degree Programs
Responding to a Changing Landscape

*ACS Guidelines for Chemistry in Two-Year College Programs* are 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 the first two years of college.
- Serve as a call for collaborative action for all stakeholders to improve chemistry education in the first two years of college.
Objectives

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Leveraging America’s Great Idea

“Overseas, many educators say they are in awe of our community college system and…. want to copy it.”

Leveraging America’s Great Idea

Top 10 Strategies
(taken from the following sections of the ACS Guidelines for Chemistry in Two-Year College Programs)

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
Leveraging America’s Great Idea

Strategy # 10 - Partnerships

• Engage stakeholders in meaningful, ongoing dialogue that develops trust and mutually beneficial relations
Leveraging America’s Great Idea

Strategy # 9 - Program Self-Evaluation and Assessment

• Institute a transparent and reflective self-evaluation process that collects, considers, and acts on evidence
Leveraging America’s Great Idea

Strategy # 8 - Student Mentoring and Advising

• Foster and sustain a strong collaboration among the chemistry faculty, counselors, and advisers at the institution and their contacts at local high schools, receiving institutions, and industries
Leveraging America’s Great Idea

Strategy # 7 - Development of Student Skills

• Help students master lifelong skills that will allow them to be effective and productive professionals (and assess the development of those skills)
Leveraging America’s Great Idea

Strategy # 6 - Student Research and Scholarly Activity

• Invest in activities that allow students and faculty to:
  – integrate and reinforce chemistry knowledge
  – develop scientific and professional skills
  – create new scientific knowledge and add new contributions to other knowledge bases
Leveraging America’s Great Idea

Strategy # 5 - Curriculum

• Develop curriculum that:
  – addresses the needs of students
  – reflects the mission of institution
  – incorporates the standards of the discipline
Leveraging America’s Great Idea

Strategy #4 - Infrastructure

• Provide institutional support that can sustain a modern infrastructure through inevitable fluctuations in faculty, leadership, and funding levels
Leveraging America’s Great Idea

Strategy # 3 - Faculty and Staff

• Develop mechanisms for:
  – maintaining professional competence
  – providing professional development and mentoring
  – allowing for regular feedback
Leveraging America’s Great Idea

Strategy # 2 - Institutional Environment

• Develop policies and provide the resources that faculty and programs need to support the needs, career goals, and interests of the institution’s students
Leveraging America’s Great Idea

Strategy # 1 - Goals of the Guidelines

• Pursue guidelines appropriate for institutional mission, student body, and curriculum
Leveraging America’s Great Idea

Bonus Strategy

• Engage chemistry faculty and programs across higher education in efforts to address needs, develop resources, and foster excellence
Conclusions

- Two-year colleges are a growing and evolving sector of higher education
- Student bodies at two-year colleges are increasingly diverse and international
- The chemistry community (international and domestic) has the opportunity to develop programs and partnerships that:
  - Engage two-year students and faculty
  - Address community needs
  - Maximize resources
  - Build capacity
  - Foster excellence
- Strategies from ACS guidelines can be used by those in the US and abroad to leverage America’s great idea
Acknowledgements

- Committee on Professional Training
- Society Committee on Education (SOCED)
- SOCED Task Force on Two-Year College Activities
- ACS Education Division
- ACS Office of Two-Year Colleges

Please send comments and questions to
2YColleges@acs.org or jvclevenger@mac.com