Numerous recent reports have highlighted shortfalls employers face in hiring skilled technical workers. These challenges can be addressed, in part, by partnering with the two-year colleges that are educating the workforce.

By collaborating with local two-year colleges, employers can help ensure that program graduates meet the employability criteria they require. Two-year colleges have excellent educators, infrastructure to support learning, and students eager to prepare for the workforce. When employers supplement this education with the skills expected of new employees, opportunities to develop these skills, and needed equipment and resources, the result is a highly skilled and committed workforce that can start work with minimal additional training.

The attached materials outline the steps employers and two-year colleges can take to develop robust, mutually beneficial partnerships.

**About the roadmap**

The enclosed roadmap starts with an overview of the steps employers and two-year colleges can take to form a partnership. The overview is followed by a description of the two-year college and employer components. Finally, a more detailed description lays out the steps required to ensure that the partnership is mutually beneficial and fills the employment pipeline with talented, skilled employees.

**About the task force**

The roadmaps were the result of two complementary American Chemical Society (ACS) task forces comprised of industry and two-year college representatives. Both task forces were commissioned by 2015 ACS President Diane Grob Schmidt. In 2015, the Industry/Two-Year College Task Force was charged to identify ways in which ACS could support the workforce needs of the chemical industry at the two-year college level. In 2016, a subsequent Presidential Task Force developed the roadmaps as part of a plan for implementing the recommendations of the first task force.

3. Accelerating U.S. Advanced Manufacturing; President’s Council of Advisors on Science and Technology; Washington, DC, 2014.
Industry/Two-Year College Partnership Roadmap

Liaison

Industry

Student

Match the right

opportunity and

support the

Supervise and

activity

Student-specific

Prepare and

performance and

Provide feedback

Employer

Program/Coordinating

Match students

opportunities

Monitor student

progress

Release through press

Advise/Partnerships

Promote

Two-Year College

Overview
Two-year college component

Program/Industrial Coordinator
- Lead on Industrial Advisory Committee and Coordinator for Experiential Opportunities
- Investigates experiential opportunities and potential curricular adaptations with local employers
- Has full administrative support

Assemble Industrial Advisory Committee
- Consider individuals on current institutional advisory boards
- Contact the Office of Institutional Advancement for suggestions
- Ask faculty, staff, and alumni for recommendations

Identify opportunities at industrial partner locations
- Obtain leads and contact persons from Advisory Committee and other sources
- Request description for each experiential opportunity
- Collaborate with career services

Match students with opportunities
- Provide concise and precise descriptions of expectations
- Identify qualified students for experiential opportunities
- Require all candidates to keep an up-to-date resume on file

Monitor student progress during and after experience
- Require students to submit executive summary of their experience
- Have periodic follow up with internship (or other opportunity) supervisors
- Monitor students as they progress through program and into their careers

Evaluate and promote program
- Make use of press releases of success stories
- Request students address future candidates at the college upon completion of experience
- Keep student contact information current throughout the program and beyond graduation

Industry/Two-Year College Partnership Roadmap
Industry/Two-Year College Partnership Roadmap

Industry Champion

- Identify experiential opportunities
- Promote opportunities to academic institutions
- Match opportunities with students
- Supervise and support student activity

Employer Component

- Provide feedback and programmatic suggestions
- Support and mentor students
- Engage academic institutions in experiential opportunities
- Connect with interested students
- Engage academic advisors/faculty early in the process
- Engage academic institutions of academic services departments

Other support opportunities
- Collaborate with local two-year colleges to prepare students for the workforce
- Leverage internal organizational knowledge and expertise
- Leverage internship co-ops, full-time staff, and full-time employee networks
- Generate description of opportunities for each experiential opportunity
- Develop opportunities for each experiential opportunity
- Leverage existing HR and recent hires
- Leverage current relationships
- Leverage advisory board members and alumni

Involves career services, academic services department, and institutional advancement

Be clear in communicating expectations to the student and faculty advisor to prepare programs and faculty with intern feedback on their progress and areas of concern or improvement

- Be clear in communicating opportunities to the student and faculty advisor to prepare programs and faculty with intern feedback on their progress and areas of concern or improvement
- Capitalize on the opportunity to promote student and faculty development of professional skills
- Develop with students, expectations, and identify potential future employees

- Has full managerial support
- Has high-level support
- Has high-level leadership support
## Industry & Two-Year College Partnership Roadmap

### PROCESS DESCRIPTION

The following details the steps employers and two-year colleges can take to establish and maintain mutually beneficial partnerships.

1) **Develop a program or identify a champion within your organization**

<table>
<thead>
<tr>
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</table>
| - Identify a faculty member or administrator to work with local industry and build partnerships  
  - **Considerations:**  
    - Familiarity with student needs, chemistry curriculum, available resources  
    - Connections among departments  
    - Position to effect any needed changes  
  - Coordinate with career services departments in development of program  
  - Consider developing an industry-responsive chemistry-based technology program (if institution does not currently have one)  
  - Ideal to have personnel overlap between Industrial Advisory Committee and Internship Programs  
| - Identify an employee to work with local two-year colleges and build partnerships  
  - **Considerations:**  
    - Familiarity with organizational needs regarding skilled employees  
    - Originate from any department with a vested interest in skilled chemistry professionals, such as R&D or QC  
    - Connections among departments  
  - Position to effect any needed changes  
  - Coordinate with Human Resources and Public Relations departments |
| **Both** | **Both** |
| - Ensure champion has adequate support; administrative/managerial support is essential.  
  - Provide release time, reduced workload, or other mechanism to ensure partnership work is prioritized  |

2) **Identify external organizations and individuals to partner with**

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| - Leverage career services, alumni, personal, and advisory board connections  
  - Contact Chamber of Commerce to identify potential industrial partners. Potential partners include:  
    - Analytical & testing organizations  
    - Chemical and pharmaceutical manufacturers  
    - Government laboratories  
    - Start-up companies  
  - Review opportunities at Get Experience (getexperience.acs.org) to identify employers interested in providing developmental opportunities for students  |
| - Leverage internal experts, including HR and recent hires, to assist in the building of relationships  
  - Consider working with local alumni and others who may have intern or co-op experiences in their own careers  
  - Reach out to local two-year college chemistry and chemistry-based technology faculty  
  - Consider posting opportunities on getexperience.acs.org |
| **Both** | **Both** |
| - Make connections through ACS local section and regional meetings and newsletters  
  - Develop a call report for each contact and follow up regularly  |
### Industry & Two-Year College Partnership Roadmap (continued)

#### 3) Identify unique resources and overlapping goals

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| Available resources may include:  
  - Educational equipment, space, and other infrastructure  
  - Educators who are experts in teaching and training  
  - Courses that may align with industry needs  
  - Capacity to develop new courses  
  - Goals may include:  
    - Experiential opportunities for students  
    - Curriculum that prepares students to enter the workforce | Available resources may include:  
  - Necessary skills and knowledge to incorporate into curriculum  
  - Experiential opportunities, such as internships, co-ops, job-shadowing, etc.  
  - Second-hand equipment or in-kind donations  
  - Guest lecturers and lab tours  
  - Goals may include:  
    - Graduates with the skills needed to enter the workforce  
    - Reduced training costs for new and incumbent employees |

**Both**
- Be proactive in identifying available resources
- Actively listen to identify overlapping goals and shared needs

#### 4) Match the right students with the right opportunities

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| Work with industrial contact to understand opportunities and expectations  
  - Obtain a complete job description with expectations for each co-curricular experience  
  - Establish needs with regard to number of candidates and their qualifications  
  - Require interested students to keep active resumes with the school's career services department  
  - Faculty can identify potentially viable candidates for co-curricular experiences  
  - Consider scheduling (e.g., summer only vs. full-year)  
  - Monitor students as they register and throughout the term  
  - Send only qualified student resumes (to avoid over-burdening partners with candidates) | Consider a variety of summer, part-time, and full-time opportunities [summer preferred]  
  - Consider R&D, analytical, manufacturing, marketing/marketing research (or other type of non-lab support), regulatory  
  - Make sure that internship descriptions and program summaries are current and interesting  
  - Project needs over several years to assist with program planning  
  - Engage academic advisors early in the process |

**Both**
- Balance industry need for flexibility and agility with the time needed to educate the future workforce
- Be creative in developing opportunities and responding to partners' needs
## Industry & Two-Year College Partnership Roadmap (continued)

### 5) Supervise and support the student-specific activity

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<tr>
<td>• Ensure students are prepared to fully engage in co-curricular activity</td>
<td>• Capitalize on the opportunity to teach the important professional skills (e.g. communication, teamwork, problem-solving) and their significance in working in industry</td>
</tr>
<tr>
<td>• Meet with students during co-curricular activity to monitor progress and provide support</td>
<td>• Provide the students and faculty with interim feedback on their progress and areas of concern or improvement</td>
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<table>
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<tbody>
<tr>
<td>• Clearly communicate expectations to students in advance of co-curricular activity</td>
</tr>
<tr>
<td>• Provide frequent feedback and support as needed</td>
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### 6) Follow-up and maintain good relationships

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<tr>
<td>• Require students to</td>
<td>• Maintain contact with students that appear well-suited for full-time employment</td>
</tr>
<tr>
<td>• Write executive summary of experience</td>
<td>• Attend student presentation, if applicable</td>
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<tr>
<td>• Discuss experience with other students considering similar opportunities (e.g., at a recruiting event, workshop, etc.)</td>
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<tr>
<td>• Review experience with student to identify any changes that could better support future participants.</td>
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<tr>
<td>• Review experience; identify what worked well for each partner and what could be improved</td>
</tr>
<tr>
<td>• Work with internal PR departments to promote program and activities through press releases and social media</td>
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<tr>
<td>• Continue to communicate frequently</td>
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