Supporting the Backbone of the Chemical Enterprise

Report from the Applied Chemical Technology Professionals Summit

December 12-14, 2008
Applied Chemical Technology Professionals Summit
Planning Task Force

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Executive Summary

Over the past 45 years, the American Chemical Society (ACS) has increasingly embraced the applied chemical technology community, establishing the Committee on Technician Affairs (CTA) and the Division of Chemical Technicians (TECH), supporting technical programming by and for technicians, and encouraging the formation of Technician Affiliate Groups (TAGs). ACS has also expanded its membership qualifications to be more welcoming to technicians; the new membership qualifications that take effect June 2009 make over two-thirds of the 350,000 applied chemical technology professionals in the U.S. workforce eligible for ACS membership.

Paralleling the changes within ACS have been changes in the workplace. The field of technicians, operators, analysts, and other applied chemical technology professionals has grown to encompass a broad range of occupations and responsibilities. This group is held to a higher level of professionalism than ever; they now require career management and employability skills similar to those of the researchers and managers they work with.

To ensure that ACS adequately engages applied chemical technology professionals, TECH organized the Applied Chemical Technology Professionals Summit. Cosponsored by CTA, the summit brought together key members and staff from across ACS to discuss the past, present, and future of applied chemical technology professionals in the Society.

During the course of the summit, participants concluded that many of the concerns of the applied chemical technology community mirror those of other professionals and could be addressed by resources already available in the Society. However, applied chemical technology professionals and their employers are frequently not aware of these resources. Other factors, such as the lingering perception that applied chemical technology professionals do not require professional development opportunities, also limit applied chemical technology professional participation in ACS.

Summit participants identified the following opportunities to improve engagement with the applied chemical technology community:

- Catalogue existing technician-relevant ACS professional development offerings
- Expand local outreach
- Build stronger alliances with industry partners
- Increase pool of ACS Career Consultants with applied chemical technology professional backgrounds
- Follow up with the summit survey respondents
- Celebrate the recent change in membership category

Next steps to improve engagement with the applied chemical technology community include the following:

- Streamline dedicated technician units within ACS and consider the dissolution of TECH
- Increase outreach to the applied chemical technology community
- Expand and promote ACS programs, products, and services

The summit was intended to be the first step in an ongoing dialogue among the various ACS bodies, applied chemical technology professional members, and the broader applied chemical technology community. CTA and TECH look forward to working with other ACS committees and divisions, as well as the local sections and membership, to ensure that ACS is the preeminent global scientific community that engages technicians, operators, analysts, and other applied chemical technology professionals to advance the chemical enterprise.
Background
Since the 1960s, the role of technicians in ACS has changed considerably. Technicians have gone from not being members, to being Society Affiliates, associate members, and finally, full members in some cases. With the enactment of new membership categories in June 2009, more than two-thirds of technicians in the U.S. will be eligible for full membership in ACS.

As the role of technicians in ACS has changed, so too has the role of technicians in industry. No longer seen as just “pairs of hands,” technicians fill a wide range of positions in industry and are held to a higher level of professionalism than ever before.

With all of these changes came a growing concern that ACS was not adequately engaging the applied chemical technology profession. On December 12-14, 2008, key ACS members and staff came together for a summit at the ACS headquarters in Washington, DC with the following goals:

- Build a comprehensive “state of the profession” assessment of the applied chemical technology profession.
- Articulate a desired future for applied chemical technology professionals within ACS, including the identification of the key programs, products, and services that ACS could/should deliver to meet the needs of this community in the next three to five years.
- Begin to outline how ACS should organize its various governance entities to provide maximum value to the community of applied chemical technology professionals in the next three to five years.
- Build a post-summit action agenda that includes a prioritization of the issues (opportunities and challenges) as well as the assignment of deadline-driven responsibilities for follow up.

The summit was organized by TECH and cosponsored by CTA. Representatives from the TAGs, the Committee on Corporation Associates, the Committee on Economic and Professional Affairs, the Divisional Activities Committee, the Local Section Activities Committee, the Membership Affairs Committee, the Women Chemists Committee, and the Younger Chemists Committee attended, as well as the 2008 ACS President-Elect. A complete roster of attendees can be found in Appendix I, and the summit agenda can be found in Appendix II.

Prior to the summit, CTA and TECH had surveyed over 600 applied chemical technology professionals, supervisors, and managers to identify the needs of the community. While the pre-summit survey results were not a statistically rigorous representation of the applied chemical technology workforce, they provided a snapshot of the prevailing needs and concerns.

The summit was envisioned as the first step in a continuing dialogue among ACS members, divisions, committees, and applied chemical technology professionals. The ultimate goal of this dialogue is to ensure that ACS is the indispensable professional and information resource that actively engages the applied chemical technology community.

State of the Applied Chemical Technology Profession

Changing role of technicians
Technicians are, and always have been, the backbone of the chemical enterprise. In broad terms, their function is to carry out the practical, hands-on activities of a given operation. However, the roles and responsibilities of chemical technicians in the workplace have changed drastically in recent years.

Historically, technicians were trained on the job by their supervisors. Because their skills and knowledge were so tied to those of the supervisors, technicians were seen as little more than a pair of hands.

Recent advances in technology and the increasing use of instrumentation in the laboratory have required technicians to develop a unique set of skills. Many of these skills are now taught in school, prior to employment. Globalization and budget concerns have led to technicians having a stronger presence in
the laboratory and playing a greater role in both the research and manufacturing aspects of the chemical enterprise. Technicians are no longer seen as just pairs of hands, but rather as skilled professionals.

Technicians are no longer limited to a single job title. A recent search on Monster.com for jobs fitting the description of chemical technician revealed over 200 job titles. Additionally, many professionals feel the title, “technician,” is too closely associated with the historical role and prefer not to use it. Terms such as “applied chemical technology professional” and “chemical technologist” have evolved as generic terms for the wide range of technicians, analysts, and operators employed by the chemical enterprise.

**Technicians in ACS**

ACS has been working to address the changing role of chemical technicians. In 1967, the Committee of Technician Activities (CTA, later changed to the Committee on Technician Affairs) was established to advance the increasingly professional role of technicians in the workplace. Because technicians could not become members of ACS at that time, the committee encouraged the formation of Technician Affiliate Groups (TAGs) within ACS local sections. CTA also advocated for the expansion of ACS membership requirements.

CTA began organizing symposia at national meetings to enable technicians to present their work. In the early 1970s, CTA established the National Committee of Chemical Technician Affiliates (NCCTA) to assume this responsibility. NCCTA ultimately pushed for a technical division to support technician interests. In 1991, the Division of Chemical Technicians (TECH) was established to organize the technician programming, support TAGs, and coordinate other technician member activities.

TECH members consist of technicians, supervisors, managers, and educators. At its peak, TECH had just over 1,000 members; currently the membership hovers around 500, a small fraction of the over 350,000 applied chemical technology professionals employed in the U.S. (See Figure 1.) Additionally, of the 1,500 ACS members who have identified themselves as chemical technicians, only 7 percent are TECH members; the remaining members have integrated themselves into other technical divisions.

The pre-summit survey revealed that many applied chemical technology professionals and their employers do not see the value of ACS membership. In some cases, it is the professional development of applied chemical technology professionals themselves that is undervalued.

**Defining the profession**

The phrase, “applied chemical technology professional,” is used as a generic term for a variety of positions. Chemical technicians are characterized by a wide range of skills, industries, responsibilities, and job titles. Technicians cannot even be defined by academic degree, as some technicians have master’s degrees or doctorates.

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**Figure 1. Division of Chemical Technicians Membership, 1992-2008**

- Total Regular and Associate Members
- Total Affiliates
- 60% of members who leave TECH do so in first three years.
- Membership spikes (in 1993 and 2000) correspond to times of ACS outreach to technicians.
- Past four years have lowest membership in TECH history.
Consequently, defining applied chemical technology professionals is no trivial task. In broad terms, applied chemical technology professionals apply their skills and knowledge in a scientific setting to put theory and ideas into practice. These professionals improve people’s lives by ensuring that the chemistry enterprise can move forward. Applied chemical technology professionals act as a two-way interface between the physical world and the symbolic world of science.

Needs of the Profession
Several data sources were used to enumerate the needs of the applied chemical technology community. Meeting participants used the pre-summit survey, along with other ACS resources, external reports, and personal experience, to build a composite picture of the anticipated state of the applied chemical technology profession in 2015.

Summit participants attempted to predict the most likely state of the profession, rather than the idealized state. Participants discussed the workplace environment, the profile of a successful professional practitioner, and the key challenges professionals will face in 2015. (See sidebars.)

In 2015, applied chemical technology professionals will work in a team-oriented, globally connected environment. Teams will be increasingly multidisciplinary and diverse. Because of economic pressures and increased emphasis on regulatory compliance, businesses will need to generate more value from fewer resources. These pressures, along with the constant and rapid pace of technology changes and the need for sustainability, will create an urgent atmosphere that places a great deal of pressure on applied chemical technology professionals to deliver.

To be successful in this environment, applied chemical technology professionals will need a broad base of technical and employability (or “soft”) skills that can be quickly repurposed as new projects come along. It will be necessary to communicate and collaborate with a wide variety of professionals. Applied chemical technology professionals will need to be innovative problem solvers, team players, and self-starters. They will need to take personal responsibility for their careers. Most importantly, they will serve as two-way interface between the ideal and the practical. They will not only put ideas into practice, but they will also collect and interpret the results and communicate them back to the people who created the ideas.

Applied chemical technology professionals in 2015 are likely to be concerned about job security as companies respond to economic pressures and changing technology. The need for job skills to keep pace with rapidly changing technology and work environments will make the upkeep of both technical and soft skills another concern. As the work environment grows increasingly multidisciplinary and team-oriented, applied chemical technology professionals will also need to develop good communication skills to a higher degree than ever.

Applied chemical technology professionals will also be challenged to find a balance, both between independent work and team work and between their work and private lives.
One of the most striking features of these predictions is how similar they are to those for other professions. With a few key exceptions, the concerns of applied chemical technology professionals are well aligned with those of other chemical professionals.

Three areas in particular distinguish the careers of applied chemical technology professionals from other professionals.

- **Emphasis on technical skills.** Applied chemical technology professionals must keep pace with rapidly changing technology and be able to work with a number of instruments at any given time. They must be able to install, operate, and troubleshoot any new piece of equipment quickly and usually independently.

- **Perception that applied chemical technology is a job, not a profession.** This perception prevents many employers from supporting the career development and professional activities of applied chemical technology professionals. It even prevents some from considering themselves professionals and pursuing the career development opportunities available to them.

- **Limited contact with ACS.** Most applied chemical technology professionals are not familiar with ACS. They often do not know of the benefits of membership, nor do they readily know where they fit in. While the chemistry community generally assumes that research chemists are ACS members, there is no similar assumption for applied chemical technology professionals. Additionally, there is little outreach to this group beyond those students in chemistry-based technology programs. Special efforts are needed to reach applied chemical technology professionals and demonstrate the ACS resources that can benefit them the most.

**Opportunities for the Community**

Summit participants identified some ways to address the needs of the applied chemical technology community. The proposed strategies were not intended to be exclusively pursued by ACS. However, as the only professional society for all applied chemical technology professionals across all industry sectors, ACS would be in the best position to act upon these strategies. Possible strategies were prioritized, and some additional description was developed for each of the top three priorities. These included affordable continuing education, mentoring, and networking.

**Affordable continuing education**

Applied chemical technology professionals need continuing education opportunities in both technical and employability/soft skills. Such opportunities enable applied chemical technology professionals to keep their skills and knowledge up to date, as well as develop interpersonal and communications skills.

The following continuing education topics would be particularly useful for applied chemical technology professionals:

- **Technical**
  - Engineering
  - Biology
  - Nanotechnology
  - Informatics
  - Assorted analytical techniques

- **Employability**
  - Presentation/communication
  - Strategic career development
  - Time management
  - Strategies for working in diverse groups
  - Coping with change

Although there are many continuing education opportunities addressing these topics, not all are appropriate for applied chemical technology professionals, especially among the technical topics. Most technical courses focus heavily on theory, building on background knowledge that is not relevant to the
applied chemical profession. Technical courses need to focus on the application of the theories and how they are used in scientific settings.

Affordability is also an issue. Many applied chemical technology professionals have difficulty procuring employer support for continuing education and are not able to cover the expenses themselves. Shrinking training budgets mean that even those who do have support often still cannot get all the support they need. Fees for short courses and workshops need to be less than $500. Since employers often do provide tuition reimbursement, more costly courses need to be applicable to some type of degree or certificate.

**Mentoring**

Mentors have long been identified as a critical part of successful careers. Mentors help with career development, growth of leadership skills, and the maintenance of work/life balance. Mentors provide feedback and support and help identify opportunities for personal and professional advancement.

Identifying mentors can be difficult, so mechanisms are needed to bring together good mentors and the applied chemical technology professionals who need them. Additionally, the pool of potential mentors needs to be broadened, and the value of mentoring applied chemical technology professionals needs to be highlighted.

Outreach to employers to highlight the value of professional development is necessary to improve mentoring opportunities. A case can be made that the development of applied chemical technology professionals leads to improvement in the quality of their work, which leads to improved production of their division. This opportunity needs to be emphasized to employers. Once employers understand the importance of professional development, they will be more open to supporting the mentoring that will encourage it.

**Networking**

Improved networking is another tool for addressing the needs of the applied chemical technology community. Networking makes professionals aware of opportunities in and outside their companies and their fields. Local networks can help identify solutions to immediate job-specific issues, while global networks can highlight broader opportunities.

A variety of options are available for networking. The person-to-person networking that results from work interactions, professional meetings, and committee work tends to be among the broader types of networking; people naturally engage in a wider range of topics during face-to-face interactions. Additionally, such interactions tend to feel more personal and can lead to more long-lasting personal contacts.

There are some local opportunities for face-to-face networking, such as inter-departmental meetings and ACS local section meetings. Opportunities that require travel, such as most ACS regional and national meetings, are more costly but open up a larger networking pool.

On-line networking can be a valuable, inexpensive method for accessing a large networking pool. The interactions are less personal and so may not have as strong an impact as fact-to-face interactions. However, they can also be targeted more easily to specific interests and concerns.
Opportunities for ACS
Affordable continuing education, mentoring, and networking are broad categories of opportunities that can help applied chemical technology professionals prepare for the changing work environment. Specific actions that bodies within ACS could take to better engage the applied chemical technology community were discussed. These included:

• **Catalogue existing technician-relevant ACS professional development offerings.** Gathering information on all of the ACS products, programs, and services relevant to technicians in one place will facilitate communication about the benefits of ACS to applied chemical technology professionals.

• **Expand local outreach.** Many applied chemical technology professionals lack employer support for ACS membership, much less travel to national meetings. By expanding local offerings, such professionals would be able to reap the benefits of the national meetings in more affordable venues.

• **Build stronger alliances with industry partners.** Some employers do not see the value of professional development for applied chemical technology professionals. Others see the value but are not aware of any such opportunities. Actively engaging employers in applied chemical technology professional activities will raise awareness of their existence and value. Collaboration with the Committee on Corporation Associates (CA) is a good place to start with this task, as CA represents a number of applied chemical technology professional employers.

• **Increase pool of ACS Career Consultants with applied chemical technology professional backgrounds.** Career consultants can serve as the mentors needed to help applied chemical technology professionals address their career concerns.

• **Follow up with the summit survey respondents.** Of the 600+ people who responded to the survey, more than 200 agreed to participate in focus groups about applied chemical technology professional needs, employer responsibilities, and the role of ACS. These respondents could be used to identify other applied chemical technology professional needs, new ACS activities, and even new leaders within ACS.

• **Celebrate change in membership category.** The recent change in membership categories means that virtually all of the 350,000+ applied chemical technology professionals in the U.S. are eligible for full ACS membership. Celebrating this achievement will provide an opportunity to educate applied chemical technology professionals and their employers about the benefits of ACS membership and actively engage the applied chemical technology community.

ACS has multiple structures that can support these actions. Many applied chemical technology professionals belong to divisions other than TECH; the divisions can improve their outreach to their applied chemical technology professional members. Applied chemical technology professional members tend to be active locally; ACS local sections could start seeking out and recognizing applied chemical technology excellence in their communities. Existing career materials and continuing education courses can be directed toward applied chemical technology professionals, as well.

Post-Summit Activities
Over the coming months, the summit planning team will investigate ways to foster ongoing dialogue across ACS, encouraging existing ACS bodies to suggest ways to more actively engage the applied chemical technology community. The applied chemical technology community itself will be invited to aid in shaping future plans. The planning team will also seek opportunities to highlight the products, programs, and services of greatest use to applied chemical technology professionals.

**Streamlining dedicated technician units within ACS**
Over 90% of ACS members identifying themselves as technicians are members of technical divisions other than TECH. The relatively low number of applied chemical technology professionals in TECH has been limiting and overtaxing the volunteer pool for TECH and CTA, limiting the work these bodies can accomplish. Therefore, it was proposed that ACS consider dissolving TECH and begin exploring ways to...
meet the needs of the applied chemical technology professionals through CTA and other existing ACS programs.

A complete listing of CTA and TECH activities can be found in Appendix III. As TECH considers dissolution, these activities will be reviewed. Activities of greatest value to the applied chemical technology community will be identified. CTA will take on those activities most appropriate to its goals. Other ACS bodies will be asked to consider activities not appropriate to CTA.

**Outreach to the applied chemical technology community**

The 1,500 self-identified technicians who are members of ACS represent less than half a percent of the pool of 350,000 applied chemical technology professionals in the workforce. New outreach efforts must be identified to tap into this large pool of potential ACS members and volunteers.

The integration of applied chemical technology professionals who are currently members into the technical divisions indicates that there are products, programs, and services useful to those who are aware of them. Improved outreach by the divisions to the applied chemical technology community can only increase the number of members who take advantage of them.

In the coming months, TECH and CTA will call upon the technical divisions, governance committees, and local sections to make special efforts to reach out to the applied chemical technology community and its employers. TECH and CTA will also continue their own outreach efforts and seek opportunities to collaborate on outreach opportunities.

The new ACS membership qualifications provide an ideal opportunity for such outreach efforts. The new qualifications allow any graduate of an associate program in chemistry or chemical technology to become a full member, regardless of the amount of work experience the candidate has (previously five years of work experience was required). The change makes ACS membership a possibility for more than two-thirds of the applied chemical technology professional workforce. It also enables ACS to tap into its existing network of contacts at two-year institutions to reach recent graduates.

**Expansion and promotion of ACS programs, products, and services**

TECH is already corresponding with ACS Continuing Education to discuss affordable courses that are appropriate for the applied chemical technology community. CTA will continue its promotion of ACS Careers resources, such as the Leadership Development Program.

TECH and CTA will seek opportunities to partner with other ACS bodies on other activities, such as the following:

- Identification of programs, products, and services appropriate to applied chemical technology professionals
- Development of networking and mentorship opportunities
- Outreach to applied chemical technology professional employers
- Celebration of the new membership categories
- Identification of other opportunities to work with the applied chemical technology community

Other suggestions for opportunities to engage the applied chemical technology community are welcome.

TECH and CTA intend for this summit to be the first discussion in a continuing dialogue about outreach to and integration of the applied chemical technology community in ACS. ACS is the only professional society in the U.S. that is open to this vital component of the chemical enterprise. As the needs of industry change, so do the needs of applied chemical technology professionals. Only with sustained effort will ACS be able to continue to engage and benefit from this community.
Appendix I. Participants in the Applied Chemical Technology Professionals Summit

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Appendix II. Applied Chemical Technology Professionals Summit Agenda

**Friday, December 12, 2008**

6:00 pm  Welcoming Remarks  
6:30 pm  Dinner  
7:15 pm  Beginning of Work  
8:30 pm  Desserts & Drinks  

**Saturday, December 13, 2008**

7:30 am  Breakfast  
8:15 am  Launching the Summit  
   Where is the Profession Now – And Where is It Headed?  
10 am  Health and Stretch Break  
10:30 am  The Possibilities: ACS as Solution Provider – Part 1  
Noon  Lunch  
12:45 pm  Dessert & Discussion  
1:15 pm  The Possibilities: ACS as Solution Provider – Part 2  
3 pm  Brain Break  
3:30 pm  Organizing for Success – Part 1  
5 pm  It's a Wrap—For Today  
7 pm  Dinner  

**Sunday, December 14, 2008**

7:30 am  Breakfast  
8:15 am  Reality Check after a Night's Sleep  
8:30 am  Organizing for Success – Part 2  
9:00 am  Action Agenda  
11:30 am  Adjourn
Appendix III. Overview of the Committee on Technician Affairs and the Division of Chemical Technicians

<table>
<thead>
<tr>
<th><strong>Committee on Technician Affairs (CTA)</strong></th>
<th><strong>Division of Chemical Technicians (TECH)</strong></th>
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<td><strong>Charge</strong></td>
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<tr>
<td>1) Coordinate the Society’s interests in the development and activities of chemical technicians</td>
<td>1) Increase the awareness of the important contributions that chemistry-based technicians make to the national economy and to society as a whole</td>
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<td>2) Facilitate communication between the American Chemical Society, employers, and other technical and professional societies concerning critical issues of common interest in the area of technician activities</td>
<td>2) Promote the technical, professional, and leadership development of chemistry-based technicians</td>
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<td>3) Provide continuing support for the American Chemical Society’s educational programs for chemical technicians by assisting in the development, review, and promotion of appropriate ACS education materials</td>
<td>3) Advocate high standards of education, technical practice and ethical conduct for members of the profession</td>
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<td>4) Support and strengthen the Division of Chemical Technicians by enhancing the professional image and development of technicians</td>
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<td><strong>Goals</strong></td>
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<td>1) Increase the awareness of the important contributions that chemistry-based technicians make to the national economy and to society as a whole</td>
<td>1) Increase awareness of the important contributions that technicians make to science and industry</td>
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<td>2) Make technicians relevant to ACS</td>
<td>2) Promote the technical, professional, and leadership development of chemistry-based technicians</td>
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<td>3) Make ACS relevant to technicians</td>
<td>3) Advocate high standards of education, technical practice, and ethical conduct for members of the profession</td>
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<td>4) Enhance communication about applied chemical technology by providing a vehicle for information exchange at the national, regional, and local ACS level</td>
<td>4) Support Local Section Technician Affiliate Groups (TAGs) which offer local opportunities for technicians to interact</td>
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<td>Activities</td>
<td>1) ACS Chemistry-Based Technology Student Recognition Award</td>
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<td>2) Equipping the 2015 Chemical Technology Workforce</td>
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<td>3) Working with</td>
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<td>a) TECH</td>
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<td>b) ChemTechLinks</td>
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<td>c) Chemical Technology Program Approval Service (CTPAS)</td>
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<td>4) Supporting ACS policies, activities, and other governance work that are inclusive of technicians</td>
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<td>5) Co-sponsorship of technical programming at ACS national meetings, as appropriate</td>
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| Meetings                                                                 | Twice a year, at ACS national meetings                     | Twice a year, at ACS national meetings |

| Communication Strategies (internal and external)                         | 1) With ACS Governance                                    | 1) With ACS Governance                        |
|                                                                           | a) Biannual reports to Council                            | a) Councilors                                 |
|                                                                           | b) Reports in *Councilor Bulletin* and *Committee News*, as needed | b) Report to CTA at open meeting               |
|                                                                           | c) Participation in Joint Subcommittee on Diversity       | c) CTA/TECH joint executive board meetings at ACS national meetings |
|                                                                           | d) Liaisons to other committees                           | d) Member of the MPPG Steering Team           |
|                                                                           | 2) With TECH                                              | 2) With others                               |
|                                                                           | a) Members of TECH executive board, including chair, serve on CTA as members | a) *ConnecTECH* newsletter                    |
|                                                                           | b) Joint CTA/TECH executive board meetings at ACS national meetings | b) Website, new release in 2009               |
|                                                                           | 3) With CTPAS                                             |                                              |
|                                                                           | a) Members of CTPAS serve on CTA as members               |                                              |
|                                                                           | b) Reports exchanged between CTA and CTPAS at meetings    |                                              |
|                                                                           | 4) With others                                            |                                              |
|                                                                           | a) Website                                                |                                              |
|                                                                           | b) Reports in *ConnecTECH* newsletter, as needed          |                                              |
Appendix IV. Sponsors for the Applied Chemical Technology Professionals Summit

Support for the Applied Chemical Technology Professionals Summit was generously provided by

- Division of Chemical Technicians
- Committee on Technician Affairs
- Divisional Activities Committee
- Equipping the 2015 Chemical Technology Workforce
- Committee on Corporation Associates and their members
  - 3M Corp.
  - Abbott Laboratories
  - Advanced Chemical Safety
  - Afton Chemical Corp.
  - Air Products and Chemicals, Inc.
  - Altria Group, Inc.
  - Arkema, Inc.
  - AstraZeneca
  - Bayer MaterialScience
  - Boehringer Ingelheim Pharmaceuticals, Inc.
  - BP Chemicals
  - Bristol-Myers Squibb Corp.
  - ChevronTexaco Energy Research and Technology Corp.
  - ConocoPhillips Corp.
  - Chemtura
  - Degussa Corp.
  - The Dow Chemical Corp.
  - Dow Coming Corp.
  - DuPont Corp.
  - Eastman Chemical Corp.
  - Eli Lilly & Corp.
  - ExxonMobil Research and Engineering Corp.
  - Ford Motor Corp.
  - Genencor International, Inc.
  - General Motors R&D Center
  - GlaxoSmithKline
  - Hercules, Inc.
  - Honeywell
  - IBM Corp.
  - ICI
  - Idaho National Laboratory
  - Innocentive
  - International Specialty Products
  - Johnson & Johnson Pharmaceutical Research and Development, L.L.C.
  - Merck Research Laboratories
  - Nashua Corp.
  - Novartis Institutes for Biomedical Research
  - Osram Sylvania, Inc.
  - Pfizer Inc
  - Polymer Chemistry Innovations, Inc.
  - PPG Industries, Inc.
  - PQ Corp.
  - Praxair, Inc.
  - The Procter & Gamble Co.
  - R.J. Reynolds Tobacco Corp.
  - Rohm and Haas Corp.
  - Sandia National Laboratories
  - S.C. Johnson & Son, Inc.
  - Solvay America, Inc.
  - Strem Chemicals, Inc.
  - Trihydro Corp.
  - U.S. Borax
  - Wyeth Research
  - Xerox Corp.