
ACS Electronic Poll 2001

Executive Summary

9/21/01

ACS Member Poll Report
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1.0 Executive Summary

1.1. Purpose of the Poll

1.1.1. Coupling the changing needs of chemists and the changing face of chemistry

The scientific discipline traditionally known as chemistry and the research and industrial base it spawned are rapidly changing. These enterprise wide changes have implications for the American Chemical Society since they address BOTH:

- The discipline of chemistry - as a science and enterprise that is becoming more interdisciplinary in a climate of less available research funding for the physical sciences, and within the traditional industrial base, one that in large part is becoming more bulk commodity and process oriented and less discovery oriented.
- The current and future practitioners of chemistry - chemists who require and will continue to require assistance in gaining the information and expertise they need to successfully navigate this complex landscape as they strive to build lives, to enjoy careers and to contribute to the core and applied base of science.

The future success of the ACS will rest on its ability to BOTH serve the current and projected interests of a changing membership demographic AND anticipate and act on the rapidly changing environmental landscape in the chemical enterprise. *Acting primarily on one and not the other will preclude the Society's longer-term success.*

1.1.2. Poll focus, purpose and intent

The intent of this Membership Poll is to focus on chemists who are current ACS members with the purpose of identifying what they value about membership, whether or not they are satisfied with their membership, and what they need and expect into the future from their membership in ACS. The findings are intended to aid ACS governance in making the best and most informed strategic choices for resource allocation in this ever more diverse climate using the information from current members as the basis for projected future requirements.

Specifically, the poll was designed to:

- Obtain the perceptions and requirements of the current ACS membership, both as a whole and by demographic cohort (gender, years of membership/age, degree level and nature of business), as determined by the responses to the poll questions.
- Be analyzed in conjunction with demographic projections from ACS surveys and the literature on the evolving diversity of the chemical (scientific) workforce.
- Provide ACS governance with definitive information, analysis and recommendations to aid in anticipating member requirements, prioritizing strategic alternatives, and taking focused action on the requirements of both the current and future projected workforce.

The Poll was not designed to address or determine members' opinions on the broader issues facing the enterprise; however, open ended response questions allowed for free identification of important critical issues. A more in depth poll to obtain specific insights, recommendations and expectations from members on the broader questions surrounding the changing face of chemistry could well be valuable to support governance development of the next generation of ACS strategic plans.

1.1.3. Summary: Chemistry and ACS

The decline in research funding for the physical sciences combined with a movement towards hybrid disciplines and the increased rate of change in scientific information form the basis for questions including:

- Will classical, compartmentalized, or pure disciplines exist in the future?
- What are the implications for career development, and what degree levels will be required for success?
- As the hybridization of chemistry continues, will the composition of the Society become less homogeneous and more diverse, and what will the future of chemistry and the American Chemical Society look like?
- What other professional Societies are/will address the needs of the hybrid scientific disciplines?
- What will be the requirements for technical information access, and what will comprise technical information?
- How is science literacy evolving, and what will the requirements be?
- What will be the implications of the changing demographics of the work force on the future of science, in general, and chemistry specifically?

Vital to the Society's sustainability will be its ability to address issues such as these with a compelling, focused and decisive strategy, a clear and ongoing communications process, and effective implementation of both. The Society and its leadership must:

- Use the Poll information and analysis to anticipate our members' future requirements,
- Understand and appreciate the changing climate for the chemical discipline,
- Have the courage and insight to embrace the information from both arenas and build a Strategy for ACS that addresses the most formidable challenges, and
- Make the strategic decisions necessary to change the current course as required and capitalize on the inherent opportunities.

1.2 Poll Results Overview and Analysis

1.2.1. Poll results and recommendations at-a-glance

While half the members are satisfied (see Section 1.2.3) with their membership and a large majority would recommend membership to others, the pivotal reason is the perceived "givens" of publications, less so CAS and even less so meetings and conferences. Members are most interested in topics that impact them directly with careers as chemical professionals, public science literacy, the perception of the role and value of chemistry in society including environmental issues, and research funding topping the list. (See Section 1.2.2.) However, despite the high importance assigned these topics, most members are only marginally involved with the Society (see Section 1.3.1.3) and there is a low perceived value and knowledge of many current programs that are intended to address these topics, especially among the growing demographic cohorts of chemists - younger chemists, women and industrial members. In general, members are less interested in what is perceived to be the "behind the scenes" of ACS, such as dues calculation or membership retention, and they assume publications, CAS and meetings as "givens" or the basic reasons for membership. (See Section 1.2.4.)

Therefore, there is a substantial unmet need on the topics ranked of greatest importance: careers, image and professionalism of chemistry, science literacy, and funding for science. Written responses also shed additional insight into member satisfaction and suggest the need to rid barriers to participation, including an "elitist" and "in group" image of governance and staff groups. Satisfaction with membership also relates to how ACS is perceived as an organization. While the Society is rated more highly on attributes including professional, knowledgeable, well organized and reliable, the low scores on issues of personal direct impact to each and every member, helpful, member service oriented, responsive and reasonably priced, are troubling. (See Section 1.2.3.)

Recommendations to address these issues include (see Section 1.3):

- Focus on the strategic issues deemed of greatest importance: careers, image and professionalism, science literacy, and funding and minimizing emphasis on topics of limited interest to members, as a whole.

- Communicate the linkage among current programs, important issues from the poll, and the progress made (ongoing evaluation and measurable results) in these programs to address the issues.
- Grow satisfaction by improving both the perceptions around issues including "elitist", "in groups", helpfulness, membership orientation and programming topics and interest especially at the local section and divisional levels.

1.2.2. Most Important Issues

In general, members are most interested in things that affect them directly. They are not interested in what is perceived to be the "behind the scenes" or bureaucratic workings of ACS such as dues calculation or membership retention.

Members across all cohorts strongly support core themes and issues of the Society that have been traditional areas of emphasis. These are topics that directly impact both the research and careers of chemical professionals and the perception of the role and value of chemistry. However, despite this support, the low involvement of members coupled with a low perceived value and knowledge of many current programs – especially among younger chemists – demonstrates the need for improvement in current programs outside of publications.

The most important issues (receiving importance level ratings of greater than 75% Two Top Box scores¹ of all members) across all members and demographic cohorts are (see Appendix 6.1.1 Figure 1):

1. Science literacy of students and a quality education in the chemical sciences (with statistically higher importance to the female and academic cohorts).
2. Funding for the chemical sciences (with statistically higher importance to the female, younger chemists, and government and academic cohorts).
3. Career development services and programs (with statistically higher importance to the female, industrial, younger and BS/MS chemists).
4. Technical information access with a focus on publications NOT meetings (with statistically higher importance to the academic cohort).
5. Improving the recognition of and professionalism in chemistry (with statistically higher importance to the older, academic and PhD cohorts).

Very disappointing, and of special note, is the combination of low knowledge and low importance assigned by a substantial percentage of members to many of the programs that the Society offers, especially in the areas of greatest importance based on the poll. (See Appendix 6.1.2. Figure 2.) These high percent unknown and low importance scores mean that a great amount of money, time, and staff are committed in programs that members are either not aware of or do not find valuable. (In addition, see Section 1.2.4 and Figure 3 in Appendix 6.1.3.) In addition, the low participation and interest in local section activities are of special note in that these interactions are often the first level of real involvement for members beyond reading publications or attending national meetings (Appendix 6.1.4, Figure 4).

¹Top Box Score refers to the percentage of respondents selecting the most positive choice in a multiple-choice option; Two Top Box Score refers to the simple sum of the percentages of respondents selecting the two most positive choices in a multiple-choice option. Correspondingly, Two Bottom Box Score refers to the simple sum of the percentages of respondents selecting the two least positive (most negative) choices in a multiple-choice option.

As a reminder, for the demographic cohort analysis, all data are given as a percent of the cohort responding to a question with no normalization for size of cohort, and cohort sizes are not equal. Using the Nature of Business cohort as an example, 20% of the academic cohort does not equal 20% of the industrial cohort in absolute numbers.

1.2.3. Satisfaction and Perception of ACS

As for satisfaction in ACS membership, the demographics are quite revealing. Satisfaction is highest for older, academic, PhD level, emeritus and/or retired and males, but lowest for females, young to mid age, industry and government with BS and MS degrees. **Therefore, the growing cohorts of chemists into the future are the least satisfied members.**

Further, although half (50.7%) of the respondents say they are satisfied with their membership (see Appendix 6.1.5. Figure 5), and 73.6 % definitely would recommend membership to others, the verbatim comments on questions such as “why would you recommend membership”, coupled with the responses on current level of activity in the Society, and what would make members more active, show that there is a perception of low cost/benefit or cost/value based on dues paid in relationship to membership services and member support.

Specifically, publications, and less so meetings, received high percent importance ratings. Just as with any hierarchy of needs, these products and services are the “givens”, or the basic reasons for simply being a member, and are seen as the main reason for membership and recommendation for membership. Support of this is found in the responses to Question 9, “why would you recommend membership”. Journals and print materials were the most often cited reasons.

For a member to value, be committed to, and highly involved with ACS requires a perceived value of membership in the Society beyond the “givens” of journals and meetings. Involvement and loyalty are based on programs and initiatives that measurably and demonstrably address the most important issues defined by the members. Further support for this analysis is found in the data on overall level of member involvement and what would make members more involved (only 8.1% consider themselves extremely or very involved while over two thirds, 67.5%, are not involved (see Appendix 6.1.6 Figure 6), yet only 2.2% said “nothing could make them more involved”. Therefore with attention paid by ACS governance and staff to initiatives and programs that are of high importance, it is possible to develop more loyalty and commitment to the Society.

Hence, lack of value in membership and the perception of wasting time, resources and money link with:

- Programs and initiatives surrounding those areas of low or middling importance to members (Appendix 6.1.3., Figure 3),
- The perceived lack of programs to address member rated highly important requirements, and
- Programs where there is little understanding or knowledge of how they link with and/or measurably impact issues of high importance. This can be due to lack of communication on programs, lack of sufficient time and critical mass to get a measurement of value, or both (see Appendix 6.1.2. Figure 2).

As for the perception of ACS attributes, while the Society is rated better on professional, knowledgeable, well organized and reliable, the low scores on issues of personal direct impact to each and every member, helpful, member service oriented, responsive and reasonably priced, are troubling. (See Appendix 6.1.7. Figure 7)

Of greatest importance is that the younger members or the fewer the years of membership cohorts rated ACS the lowest on all attributes (top box and top two box scores). Also, whether highly satisfied or not with membership, all cohorts view ACS as a Society in the same way – professional but not member-oriented, and the core of the ACS future membership base rates ACS the lowest.

1.2.4 Least Important Issues

The themes and issues of especially low to no importance to members where expenditure of resources and dollars could be perceived as irrelevant (see details in Section 5 and Appendix 6.1.3. Figure 3) across all cohorts are:

1. A different method for calculating dues (especially low importance to the industrial cohort)
2. Member Insurance programs (especially low importance to the academic and middle age cohorts)
3. A credentialing process for chemists (especially low importance to the PhD and older cohorts)

It must be noted that over the past several years, these have been themes that have received attention and focus, including initiatives and programs by ACS staff and governance. However, these are not areas of perceived value to members.

1.3. Key Recommendations and Follow-Ups

The changing face of chemistry is an opportunity for ACS to gain even more members, as well as to increase the level of member involvement and loyalty if we address the challenges, build on the strengths and do not avoid or ignore the changes that need to take place in order to open up the Society to a younger and more diverse group.

The challenge and opportunity facing ACS into the future is how to address the changing needs of this ever more diverse group of chemical professionals. Fortunately, the data show that although different cohorts place greater or lesser emphasis on certain programs and initiatives, there is substantially a consensus on the most important and least important issues to members, their level of satisfaction with the Society and what they need to be truly engaged going forward.

The following recommended actions are based on the analysis of the data, summary of the anecdotal responses and Task Force member input and focus on not maintaining the status quo, but embracing the opportunities to further build the Society based on member need. In general, to be successful in improving the involvement and satisfaction of members, it is recommended that three key issues be addressed:

- **Focus, Focus, Focus**
- **Communicate, Communicate, Communicate**
- **Satisfaction, Satisfaction, Satisfaction.**

1.3.1. Focus, Focus, Focus on the IMPORTANT ISSUES: There needs to be a commitment to:

- Focusing on the most important themes and issues to members as articulated in this poll.
- Using well crafted collateral studies to define specific member requirements.
- Reviewing current programs underway and receiving funding and emphasis at ACS in light of the most important issues raised in this poll and being daring enough to eliminate or de-emphasize those programs and initiatives deemed of low to no importance by members.
- Developing metrics for success to be able to demonstrably show members the value of programs and initiatives in addressing themes of high importance.
- Specifically:
 - **1.3.1.1.Careers:** Based on the Poll, there is a clear need for a stronger ACS emphasis on overall career development in the chemical sciences – not just a technical focus. While programs currently exist for improving technical skills and in some limited areas of overall career development, augmentation and upgrading is required to meet growing member needs outside

of technical skills. From the demographic data the need is greatest among female, industry, government, and younger members, especially, but not limited to those without a PhD - in short, the growing cohorts in the chemical sciences. From the demographics, the older, male, predominantly academic contingent has less need for this service.

- Suggestions include:
 - Make available to members value added courses and services that help improve professionalism and grow careers beyond the science and current limited scope of Career Services and the Clearing House. Examples include:
 - Business-technology linkage, business development, selling ideas, and the basics of commercial development. Alliances with organizations such as Commercial Development and Marketing Association as training providers are a natural here.
 - Specific “how to” information from chemical professionals who have built leading careers in technology and management.
 - Implications of globalization on careers.
 - Conduct a follow-up longitudinal study to SPECIFICALLY pinpoint career needs.
 - Communicate what currently exists in career development.
 - Develop alliances with professional career consultants (professionals and not volunteers or staff who mean well, but have neither the skills nor proven track record) to both provide overall career coaching and to improve the career success skills of foreign-born scientists. Models for programs for foreign-born scientists exist in the Society of Nuclear Medicine and in the American Association of Pharmaceutical Scientists.

1.3.1.2. Image of chemists and value of chemistry: Improving the professional image of chemists and demonstrating the value of chemistry was one of the key themes.

- Suggestions include:
 - Develop and maintain programs that can BOTH improve science literacy and create brand awareness for the value of chemistry and the contributions of chemists and the ACS. Examples to consider might include:
 - Kids in Chemistry
 - Wonder Science
 - The Smithsonian Exhibit
 - Join with other professional societies to create critical mass for these initiatives.

1.3.1.3. Programming, participation and involvement: Local section and regional level interest and participation are very low (see Appendices 6.1.4 Figure 4, and 6.1.6. Figure 6). Meetings and topics are considered irrelevant and chosen by a small group. To invigorate the Society in these aspects, consider:

- Conducting surveys and getting information on relevant topics for programs.
- Integrating programming so that local sections can benefit from new program series that seem to run from National Headquarters in local sections but don't involve the sections.
- Joining with other local chapters of other professional societies to enrich programs and build networks.

1.3.2. Communicate, Communicate, Communicate: There needs to be a concerted, planned, focused and measurable communication and public relations campaign to help members know about current ACS programs and how they explicitly link with the most important topics as defined by members: science literacy, science funding, image and respect for the contributions of chemistry, and careers. This communication should include:

- Initiatives and programs that are currently underway such as Project SEED, National Chemistry Week, Petroleum Research Fund, etc.;
- Explicitly how these initiatives and programs link to the most important topics and issues;
- The measurable and demonstrable progress these initiatives and programs have made in addressing the key issues;
- What ACS staff, governance, local sections, divisions and committees are SPECIFICALLY going to do to address communication requirements and the poll information;
- How dues are used and financing of programs undertaken; and
- How the ACS Strategic Plan is developed and how the results of this poll will be used in developing the next phase of the ACS Strategic Plan.

1.3.3. Satisfaction, Satisfaction, Satisfaction: While ACS members are professionals, they need to be satisfied as customers. Customer satisfaction is the way to grow and sustain any organization. With only half the members saying they are satisfied with their membership, two-thirds saying they are not involved or engaged, and the richness of the suggestions for improvement in the poll data, there is a real need to build on the current satisfied base, but address the unmet needs of those demographic cohorts that represent growth potential for the Society. Suggestions include:

1.3.3.1. Rethink, Revise, Update ACS's reputation with members: The perception of members that ACS is an expensive operation that is "stale" and "inaccessible" with staff and governance "in-groups" that are hard to "get into" and "elitist" must be addressed. Suggestions include:

- Creating more opportunities for "breaking into the old guard" by minimizing the complexity, bureaucracy and hierarchy of getting into governance. Specifically,
 - Break the strangle hold in many local sections by senior chemists who want others to "wait their turn" for participation, and
 - Redesign the terms of office for local section officers, Councilors, committees and the Board with the SPECIFIC aim of enfranchising the growing demographic cohorts of chemical professionals and minimizing term lengths.

1.3.3.2. ACS and Customer Orientation: Systemically address the perceptions of ACS attributes with a focus on improving responsiveness, member (customer) service orientation and helpfulness to members. Suggestions include:

- Continually upgrade, update and assess data on member (customer) satisfaction
- Continually respond to ACS member (customer) satisfaction requirements, using the best practices available.
- Measure the impact of the ACS response to customer requirements and adjust actions as appropriate.

1.3.3.3. Continuously gain data and information:

- Conduct a study of POTENTIAL ACS members who HAVE NOT CHOSEN membership to determine why.
- Conduct a study of former members who have not renewed their membership to determine why.
- Build a concerted communications and program strategy across all ACS to clearly link and articulate all ACS programs and how they address the key initiatives as defined by the members in this poll.
- Data mine, be open to the information and act. There is a wealth of untapped information still in the data sets of the Poll. This must be mined for its real worth by the groups who can best take action and as a source for governance and staff in building the strategy for ACS.
 - Summarize and categorize the written responses by cohort and act on the findings.

- Give access to appropriate ACS staff groups for additional data analysis.

1.4 Background Information

1.4.1. Poll Information and Statistics

On April 16, 2001, ACS launched an electronic Internet-based poll to determine member requirements and satisfaction. Allowed to run for three weeks to allow sufficient response time, the poll was:

- Sent to the approximately 90,000 members for whom the ACS database contains E-mail addresses,
- Managed by the ACS Customer and Administrative Services unit, and
- Conducted on the behalf of ACS by Greenfield Online, a well-respected electronic survey company.

With approximately 9000+ bounce backs (sent back as undeliverable), the 8009 respondents constitute a demographic statistically equivalent to the overall ACS membership, and the 10% response rate is a robust sample that is very respectable for membership polls. Taken together, this allows projection of the poll data analysis, results and recommendations to be projected to ACS overall.

Based on the poll conducted by the California Local Section in December of 2000, the poll pre-supposed no outcomes and used multiple choice, single response and open-ended response questions aimed at determining the:

- Importance and value members place on ACS programs and initiatives,
- Level of satisfaction with and participation in ACS programs and activities by members,
- Perception of ACS as an organization by members, and
- Pertinent demographic information of the respondents as an enhancement to the ACS database information.

1.4.2. Task Force Process

The statistically compiled data were provided to the task force by Greenfield as tables comprising “Top Box”, “Two Top Box”, and “Two Bottom Box” scores for the responses¹, summarized according to the following cohorts to allow for both overall and demographically refined analysis:

- Gender
- Degree level
- Years of ACS membership
- Nature of business (academic, industry, government)

Due to the extensive amount of data and analysis required to adequately address the Charter to the Task Force by President Pavlath, the Task Force divided into subgroups to analyze the data and generate recommendations, where appropriate, both by cohort (above) and overall. The recommendations summarized in the next section will, therefore, indicate where specific cohorts have shown a higher indication of need or interest.

Further, in order to address the extensive amount of data and not completely overwhelm either the reader or the Task Force, data analysis and recommendations were confined to overall and by cohort analysis of:

- The MOST IMPORTANT themes and issues to members
- The LEAST IMPORTANT themes and issues to members
- Member satisfaction with the Society, including value for the dues, needs not being addressed, and perceptions of the Society overall, and

- Implications for follow-up and future work.

Task Force members used the overall Core Data responses to questions and cross correlated and summarized issues to develop overall trends and build an analysis. This basic analysis was then backed with cross tabulations between questions, where relevant, and augmented with general findings from the rich yet anecdotal write-in responses. In short, there is still a **wealth** of valuable information to be mined from this detailed poll and the member responses. (See Section 1.3 for specific follow-up suggestions.)

1.5 Acknowledgements

With sincere thanks to the Task Force, for diligently and objectively analyzing and collating the data, developing valuable and data based conclusions and recommendations and having the courage to listen to the data, not be prejudiced by the past, and wanting the best for the chemistry, chemists and ACS.

Task Force: J. Giordan, Chair; M. Cavanaugh; D.R. Cobb; N. Gilham; N. Heindel; G. Heinze; T. Lane, Z. Morales-Martinez; D. Wohlers; P. Ayre, Staff Liaison

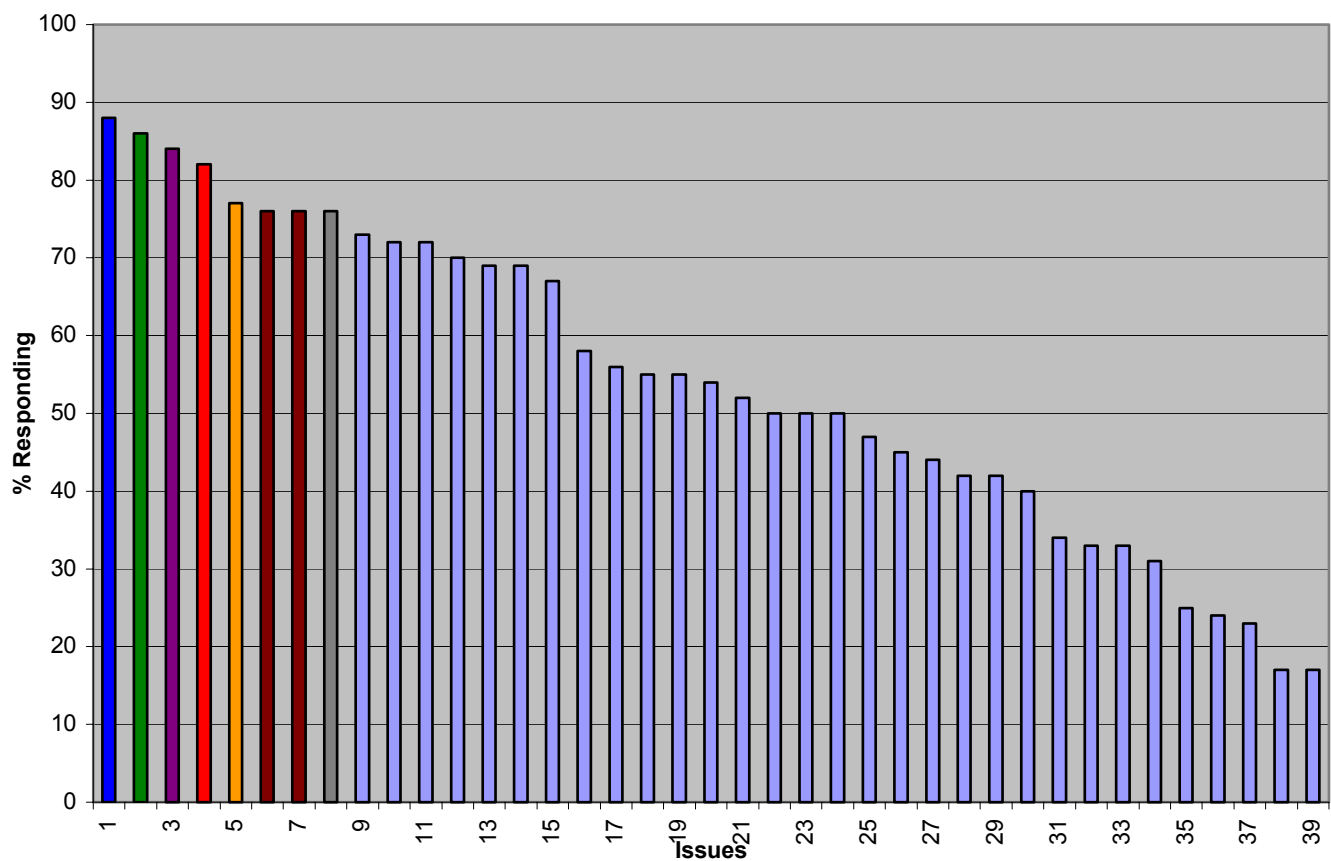
Task Force Sub-Groups:

N. Gilham and Z. Morales-Martinez: Gender
M. Cavanaugh and R. Cobb: Degree Level
J.Giordan: Overall

N. Heindel and T. Lane: Nature of Business
D. Wohlers: Years of Membership
P. Ayre: Demographics

6.0 Appendices

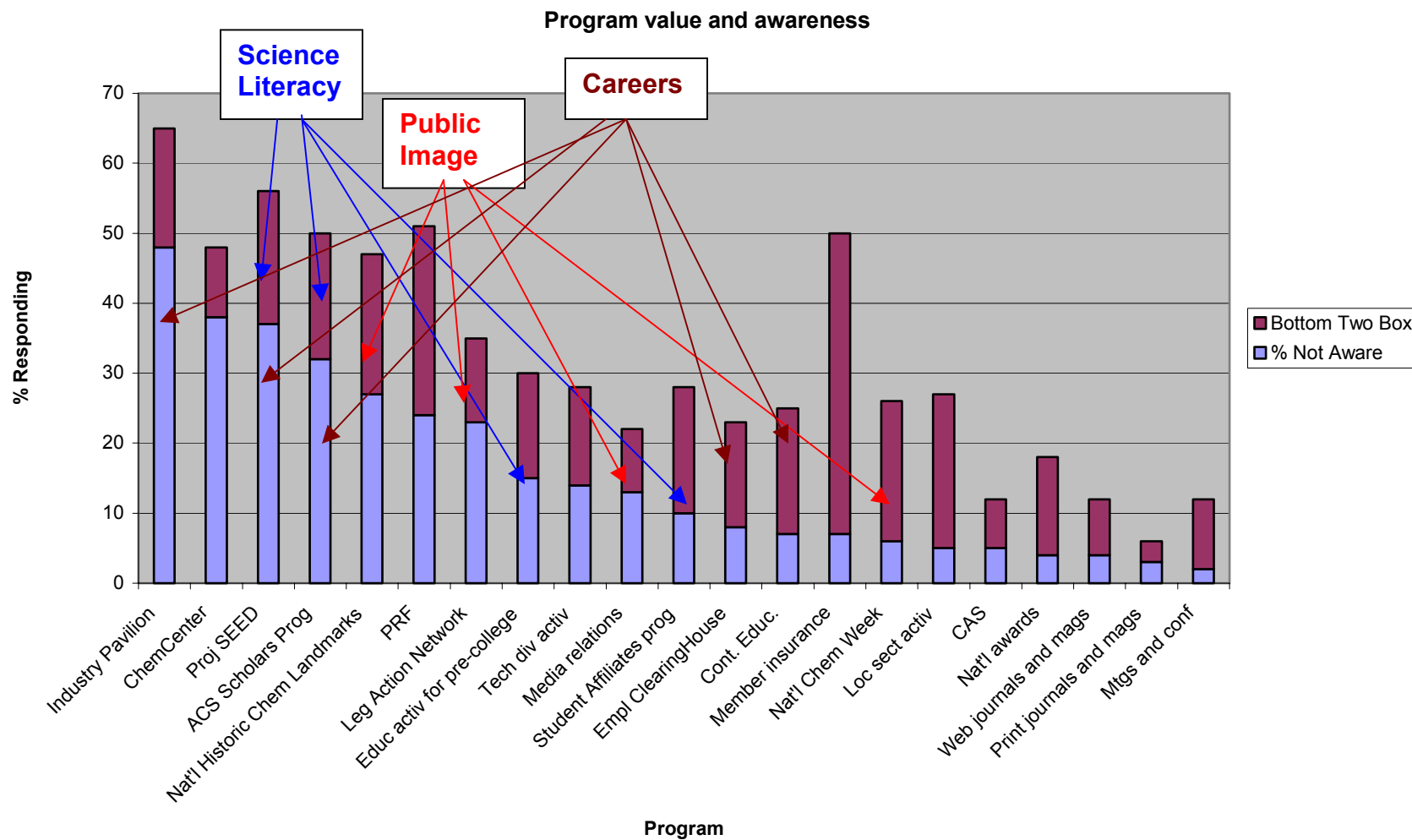
Appendix 6.1.1. Figure 1 Most Important Issues



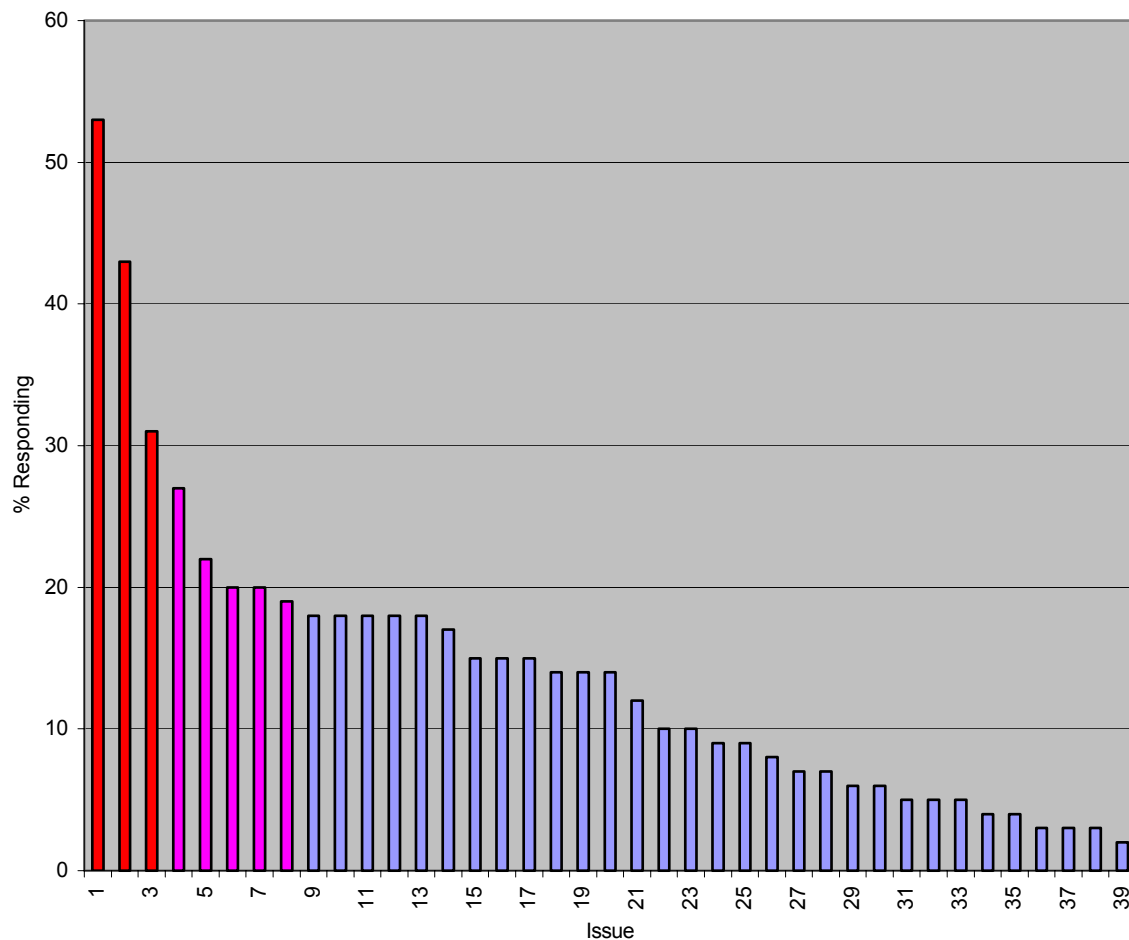
Issues Legend

- 1 *Science literacy*
- 2 *Research funding*
- 3 *Print journals and mag*
- 4 *Public's recog of chem.*
- 5 *Environmental issues*
- 6 *Career development*
- 7 *Career development*
- 8 CAS
- 9 Student participation
- 10 Acad/ind/govt
- 11 Chem info provider
- 12 Web journals and mag
- 13 Promote profess
- 14 Mtgs and conf
- 15 Interdisc activities
- 16 Empl C'ing House
- 17 Nat'l awards
- 18 Members in industry
- 19 Media relations
- 20 Women, underrep
- 22 Addr supply/demand
- 23 Student affiliates
- 24 Cont Educ
- 25 NonPhD prog
- 26 Tech div activ
- 27 NCW
- 28 Mbr retention
- 29 Leg Action Network
- 30 Loc sect activities
- 31 Credentialing
- 32 ChemCenter
- 33 PRF
- 34 Scholars Program
- 35 Mbr insurance
- 36 Proj SEED
- 37 Chem Landmarks
- 38 Dues calc
- 39 Industry Pavilion

6.1.2. Figure 2: Low Program Importance and Lack of Program Awareness

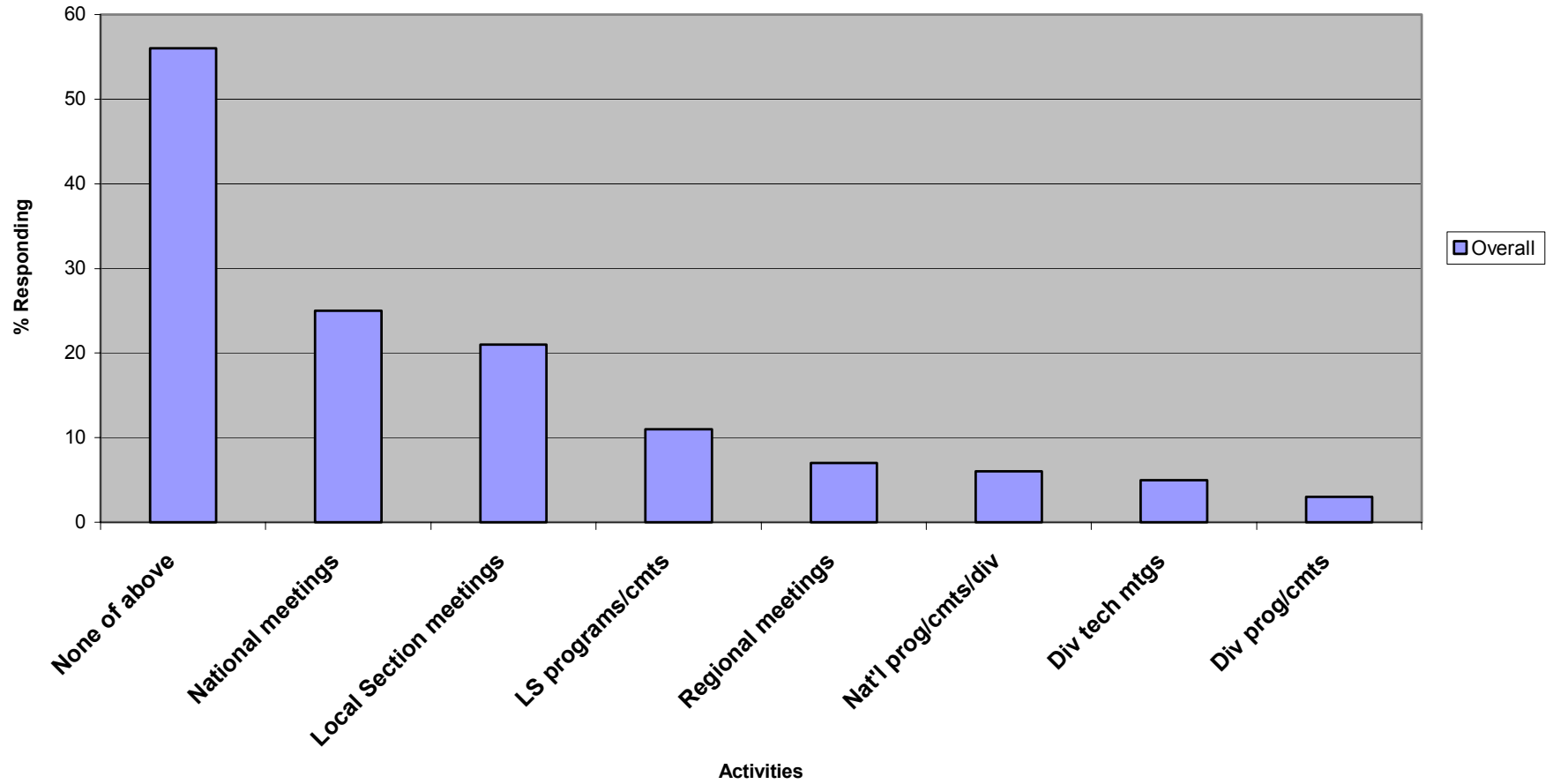


Appendix 6.1.3. Figure 3 Least Important Issues Overall



- Issues Legend
- 1 Dues Calculation
 - 2 Mbr ins
 - 3 Credentialing
 - 4 PRF
 - 5 LS Activ
 - 6 NCW
 - 7 Chem Landmarks
 - 8 Proj SEED
 - 9 Cont Ed
 - 10 Scholars Prog
 - 11 Student Aff
 - 12 Non PhD prog
 - 13 Mbr retention
 - 14 Ind Pavilion
 - 15 Empl Cl'g House
 - 16 Educ activ precoll
 - 17 Women, underrep
 - 18 Nat'l awards
 - 19 Tech div activ
 - 20 Addr supply/demand
 - 21 Leg Action Network
 - 22 Mtgs and conf
 - 23 ChemCenter
 - 24 Media relations
 - 25 Members in industry
 - 26 Web journals and mag
 - 27 CAS
 - 28 Prom professionalism
 - 29 Chem info provider
 - 30 Interdisc activ
 - 31 Students...particip
 - 32 Career development
 - 33 Acad/ind/govt interact
 - 34 Environmental issues
 - 35 Career development
 - 36 Print journals and mag
 - 37 Research funding
 - 38 Public's recog of chem.
 - 39 Science literacy

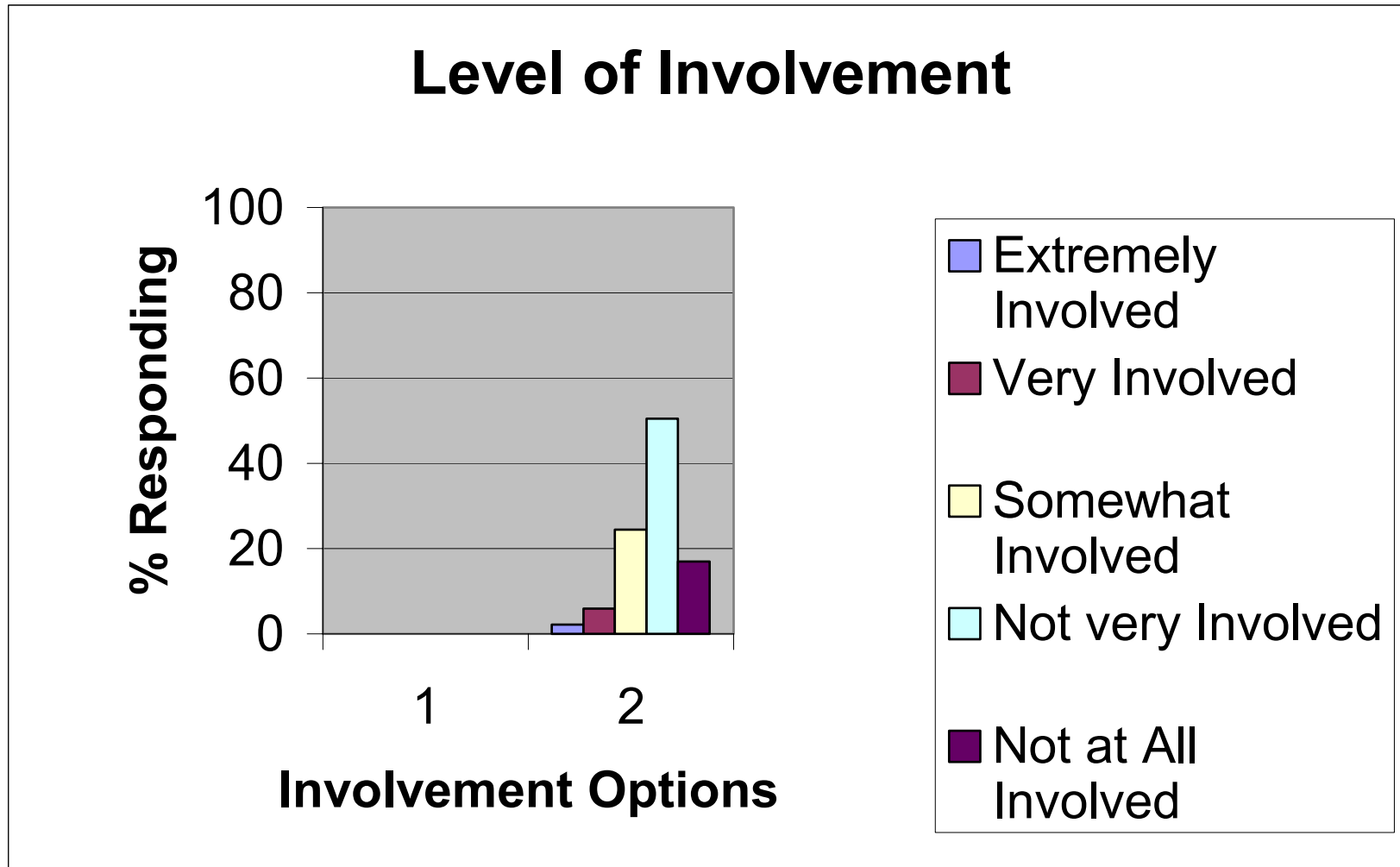
Appendix 6.1.4. Figure 4 Activities participated in Within the Last 12 Months



Appendix 6.1.5. Figure 5 Overall Member (Customer) Satisfaction



Appendix 6.1.6. Figure 6 Level of Involvement



Appendix 6.1.7. Figure 7 ACS Attributes

